Volksbanken Raiffeisenbanken
cooperative financial network

2018
Annual Report

DZ BANK Group

Contents

Uwe Fröhlich (left) and Dr. Cornelius Riese, Co-Chief Executive Officers

Dear Shareholders,

In 2018, the DZ BANK Group generated profit before taxes of just under €1.4 billion. This respectable figure was the result of its good operating performance. Our entities increased their volume of business and gained market share in most areas. By contrast, capital markets provided more headwind than tailwind in 2018. This is also reflected in the results.

Nonetheless, the level of profit was sufficient to enable us to absorb adverse one-off items. As well as recognizing negative valuation effects due to the performance of the capital markets, we also adjusted the enterprise value of DZ PRIVATBANK to reflect the more challenging conditions in the private banking market.

Last year, we made good progress in terms of the DZ BANK Group's strategic development. Under 'Verbund First 4.0', DZ BANK AG set itself ambitious targets for earnings and costs and has already launched a comprehensive action plan. DG HYP and WL BANK successfully merged to form DZ HYP, the largest Pfandbrief bank in Germany. Subsequently, the merged institution expanded both existing and new business. DVB Bank has made good headway with reducing risks and divesting parts of its business. As we examine further options, we continue to be guided by the principle of preservation of value.

The 2018 results in detail: Net interest income decreased by 4.8 percent to €2.79 billion. Entities with particularly significant interest-earning business – such as DZ BANK AG and Bausparkasse Schwäbisch Hall – faced challenges from low interest rates. By contrast, net fee and commission income rose to €1.96 billion (2017: €1.86 billion), once more due in no small part to Union Investment's strong performance. Gains and losses on trading activities fell from a net gain of €506 million to a net gain of €285 million owing to a smaller contribution from trading income at DZ BANK AG. Gains and losses on investments came to a net gain of €150 million (2017: €10 million), primarily reflecting the increase in income from sales of securities at DZ BANK AG. Other gains and losses on the valuation of financial instruments declined from a net gain of €289 million to a net loss of €120 million. This was again mainly due to valuation effects in relation to government bonds in DZ HYP's wind-down portfolio. Net income from insurance business decreased from €907 million to €490 million, predominantly as a result of a deterioration in gains and losses on investments held by R+V, whereas R+V's operating business again performed well. At €21 million, loss allowances were unremarkable (2017: €786 million). The stabilization of DVB Bank and net reversals at DZ BANK AG had a positive effect. Administrative expenses increased slightly overall, climbing by 2.5 percent to €4.06 billion. Whereas there was a growth-related rise at Union Investment, DZ BANK made significant savings following completion of the merger.

These results reflect the high level of commitment by our employees. All of us on the Board of Managing Directors would like to express our appreciation and thanks to them.

The DZ BANK Group's capital situation remains satisfactory. As at December 31, 2018, the common equity Tier 1 capital ratio was unchanged at 13.7 percent despite the expansion of the volume of business (December 31, 2017: 13.7 percent). This reflects our circumspect approach to managing risk assets and our ability to retain profits.

Taking account of the requirements of diligent capital management and the legitimate interests of our shareholders, we will propose an unchanged dividend of 18 cents per share to the Annual General Meeting.

The outlook for 2019 reflects the first indications of a deterioration in the economy, both abroad and in our domestic German market. However, at the start of the year, we still see high demand from customers in our operating business. We anticipate that our profit before taxes will rise slightly in 2019 and is therefore likely to be at the lower end of our long-term target range of €1.5 billion to €2 billion.

At the same time, it is our responsibility to safeguard the capabilities of our organization beyond the immediate future. Following the successful merger to create one central institution, we have laid a solid foundation on which we build 'Verbund First 4.0'. We focus on three main aspects. Firstly, we are investing in our market offering in the Capital Markets, Corporate Banking, and Transaction Banking business lines. One of the top priorities is customer focus and efficiency in all corporate customer processes, from the customer portal through to the back office.

Secondly, we are optimizing control and production, which includes seizing opportunities to digitize and automate core processes. The areas of focus are IT and the lending and control functions. It is essential that we further optimize our cost base. We will significantly reduce our expenditure on external service providers and we believe it is necessary to reduce the headcount by almost 500 by 2023. This figure equates to roughly 10 percent of positions after implementation of the merger synergies.

The third important aspect is the contribution of our employees to our long-term success. Our organization already has a unique reputation for a values-based, responsible approach to business. It is our ambition to translate these values into the future and to ensure that our corporate culture is even more focused on our customers, on efficiency, and on performance. That is another reason why attracting and promoting talented employees and so managing demographic change is high on our list of priorities. We will double the number of new trainees in 2019.

Thanks to our financial strength and due to our deep roots within society, we are well equipped for these future challenges. Yet for all the considerations on the future of our organization, we do not neglect our day-to-day business. We must do everything we can to remain the first port of call for the cooperative banks, to provide added value, and to pave the way for further growth. The constructive collaboration between the BVR, the cooperative banks, the companies within the cooperative financial network, and Fiducia & GAD as part of the joint digitization strategy is a cause for optimism.

We are pooling our broad and diverse digital experience in order to deliver this crucial project successfully and are benefiting from the expertise contributed by each partner involved. We are not just there for one another; we are operating strategically and as one. We do not rest on our success but are working together to find useful solutions; rolling up our sleeves, and playing an active part. As long as we maintain this approach, we have every reason to be optimistic.

Kind regards,

Uwe Fröhlich
Co-Chief Executive Officer

Dr. Cornelius Riese
Co-Chief Executive Officer

Group management report

Note

DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK), as the parent company in the DZ BANK Group, implements the transparency requirements as specified in section 37v of the German Securities Trading Act (WpHG) and section 315 of the German Commercial Code (HGB) and complies with equivalent requirements in the relevant German accounting standard (GAS 20 Group Management Report) with the publication of this group management report.

All figures are rounded to the nearest whole number. This may result in very small discrepancies in the calculation of totals and percentages.

I DZ BANK Group fundamentals

1 Business model and strategic focus

The strategic focus in the DZ BANK Group follows the guiding principle of fulfilling the role of a network-oriented central institution and financial services group. Business activities are centered on the local cooperative banks and their customers. The objective of this strategic approach is to consolidate the positioning of the cooperative financial network as one of the leading financial services providers in Germany on a long-term basis.

1.1 DZ BANK

In 2018, DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK) launched 'Verbund First 4.0', a strategic program designed to ensure the organization's resilience for the future. The program is aimed at improvements in three key areas: market offering (network orientation, customer focus, and a digital experience), control and production processes (efficient, effective, and focused), and corporate culture (performance-driven and integrative).

At the same time, DZ BANK is aiming to significantly increase earnings from operating activities in the central institution and corporate bank each year between now and 2022, while remaining risk-conscious. This applies to the Corporate Banking, Capital Markets, and Transaction Banking business lines. The plan is to step up capital expenditure on market- and sales-related matters, with a focus on the primary banks. Examples include investment in products and platforms in the capital markets business, acquisition of further customers and expansion of portal solutions in corporate banking, and investment in transaction banking.

Measures to reduce costs are also planned in order to secure the growth and future viability of DZ BANK. As well as reducing the costs for external service providers, this includes the loss of 485 jobs by the end of 2023 – on top of the job losses in connection with synergies from the 2016 merger that are yet to be harnessed. This is because fewer employees are required as a result of advancing digitalization and the simplification of processes. The restructuring is to be implemented with the minimum possible social impact.

DZ BANK has also maintained its strategic focus in the individual business lines, as described below.

1.1.1 Cooperative Banks/Verbund

The Cooperative Banks/Verbund division is responsible for providing end-to-end support for the cooperative banks, which are the most important customer group and shareholders of DZ BANK. The Regionaldirektoren [regional directors] are the first port of call and customer relationship manager for the cooperative banks and they assist them with their business in the regional markets.

In this context, DZ BANK offers consultancy and other services at every stage of the strategic bank management process as well as regarding regulatory matters. This is particularly important to the cooperative banks, both from an earnings and risk perspective and from a regulatory perspective. DZ BANK helps the local cooperative banks with all treasury and controlling aspects of bank management, such as planning and risk management, as well as with optimization for strategic bank management purposes and with own-account investing activities. These services, along with the systems offered (including GENO-SAVE and EGon) that support own-account investing, reporting, and accounting, are enhanced on an ongoing basis.

1.1.2 Corporate Banking

In the corporate banking market, DZ BANK operates both on a decentralized basis through the local cooperative banks and directly in the market. It rigorously pursues a policy of regional focus, guaranteeing proximity to the local cooperative banks and the shared customers. In collaboration with its subsidiaries and international branches, DZ BANK offers its customers the entire range of corporate banking services.

DZ BANK's clear strategic priority is its joint corporate banking business with the cooperative banks (joint lending business). In view of the crucial importance of this business for the shared success and positioning of the cooperative financial network in the market, DZ BANK carefully examined how to strengthen and improve this business. On the back of this, it is working on various initiatives aimed at significant process improvements – including standardized rating systems – and greater transparency in the product range.

DZ BANK offers comprehensive advisory services and expertise to customers in its international business. In June 2018, it signed a cooperation agreement with PT Bank Central Asia Tbk in order to strengthen its range of products and services in key markets. This partnership – supported by DZ BANK's representative office in Jakarta, which opened in 2017 – enables better support for customers doing business in Indonesia. The fast-growing Indonesian market is gaining in importance, especially for German small and medium-sized enterprises (SMEs). DZ BANK plans to enter into further partnerships with Asian banks over the next few years.

DZ BANK constantly works on further developing innovative ideas and using new technologies. The many different activities being carried out in this context include VR BusinessOnline, an online service that enables corporate customers' business inquiries to be processed seamlessly, and VR GeschäftsNavigator, which strengthens collaboration with the local cooperative banks in joint corporate banking business. DZ BANK is also increasingly working on the deployment of new technologies and digitalized processes in the development lending business, for example in connection with the integrated GENO-STAR application for development loans.

1.1.3 Retail Banking

DZ BANK offers the cooperative banks and carefully selected partners or third-party banks end-to-end services (generally platform- and process-driven) in the securities business, focusing on personal investments. These include a comprehensive range of investment services, intelligent liability products to strengthen and support the cooperative banks' market offering and balance sheets, as well as consulting services, market data, research, and trading/advisory/e-business platforms.

DZ BANK is steadily expanding its digital options for providing information and generating sales in order to support the omnichannel approach of the cooperative financial network. It is enabling customers to benefit not only from conventional banking but also from digital access to their bank via mobile login, online tools (such as VR-ProfiBroker and VR-ProfiTrader), and the DZ BANK derivatives portal.

1.1.4 Capital Markets

In the Capital Markets business line, DZ BANK offers its customers comprehensive research services along with advisory and sales services in relation to investment and risk management products covering the interest rate, credit, equities, and currency asset classes in both primary and secondary markets.

DZ BANK is optimizing its sales approach and giving it a clear edge as well as expanding digital trading activities for its customers. It constantly adapts its range of products and services to customers' evolving needs. In 2018, within just a few days of German lawmakers creating the necessary legal framework, DZ BANK helped its customers to enter the market for a new type of unsecured senior bank bond, responding to the new regulatory environment in collaboration with its customers.

On behalf of the cooperative financial network, the Group Treasury division at DZ BANK carries out the cash-pooling function and ensures access to global liquidity markets as well as to liquidity provided by central banks. In addition, Treasury acts as the product portfolio manager for secured and unsecured money market business, currency swaps and forwards, and the issue of short-term commercial paper.

In 2018, DZ BANK successfully placed the first green bond of its own on the market. The senior preferred green bond, which had a volume of €250 million, was significantly oversubscribed and attracted particularly strong interest from cooperative banks and institutional investors. By issuing its own bond, DZ BANK also gained additional expertise that will help it to advise customers in this segment.

1.1.5 Transaction Banking

In the Transaction Banking business line, DZ BANK provides efficient, high-performance platforms and services, helping cooperative banks and the entities in the DZ BANK Group to exploit the potential available in the market. To this end, it offers products and services covering payments, payments services, and acquiring, together with securities processing, depositary, and settlement services in connection with capital market products.

The current market environment presents major challenges for transaction banking. Customers have higher expectations regarding speed, security, and personal service, while regulatory requirements are forcing DZ BANK to adjust the processes, infrastructure, and range of services in this business line. DZ BANK constantly analyzes the trends, assessing how it can benefit from the changes and position itself in the new market environment. In this context, a key requirement is to continuously adapt the range of products and services to customer needs.

In the payments processing business, the implementation of instant payments reflects the continuing trend for making payments anytime and anywhere. Instant payments cater to liquidity requirements, particularly those of corporate customers, and are increasingly taking precedence over traditional bank transfers. Tapping into this trend, the banks in the cooperative financial network have been able to receive instant transfers since November 2018 and, in spring 2019, will also enable their customers to make instant payments.

The focus in the securities and capital markets services business continues to be on implementing regulatory requirements. DZ BANK supports the cooperative banks in this regard, mainly by enhancing the range of services in relation to transaction-based reporting. It also continued to expand the depositary business, with assets under depositary reaching a record level.

DZ BANK is maintaining its omnichannel approach when it comes to payment services. The bank is among the pioneers of contactless mobile payments by credit card. Customers of the cooperative financial network can now use both their debit card and their credit card to make payments via their smartphone. The optimization and better positioning of paydirekt, an e-commerce payment method, remains particularly important. Supplementary services are becoming increasingly attractive. Initiatives to expand the cooperative banks' merchant customer business and the introduction of VR Smart Guide paved the way for extending the range of solutions for SMEs. DZ BANK is also playing a major part in strengthening the competitiveness and positioning of the cooperative financial network in the market for transaction banking products by adding value-added products such as VR-ExtraPlus to its range. Going forward, these support services for the cooperative banks will be a key element of long-standing and stable customer relationships.

1.2 BSH

Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, (Bausparkasse Schwäbisch Hall; subgroup abbreviated to BSH) is the competence center for consumer home finance in the DZ BANK Group and offers tailored solutions that enable customers to make private provision for the future, build up savings, and own their own home or obtain home finance. The strategic objective is to safeguard its position as market leader in Germany with its profitable building society operations, working in close collaboration with the cooperative banks on a decentralized basis. With this objective in mind, BSH strives constantly to enhance its products and innovative solutions.

The persistently low interest rates mean that home finance is important as a second pillar of the business alongside home savings, allowing BSH to further diversify its sources of income. The home finance business includes building loans granted directly by BSH and its activities as an intermediary on behalf of cooperative banks in connection with real estate loans.

BSH also remains active in its international business, focusing on maintaining the existing approach to business through investee companies in the Czech Republic, Slovakia, Hungary, and China.

In 2018, BSH continued to restructure its IT environment, digitalize its existing customer channels, and prepare its internal processes for the issuance of its own Pfandbriefe from 2019 onward.

1.3 DVB

DVB Bank SE, Frankfurt am Main, (DVB Bank; subgroup abbreviated to DVB) is a specialist niche provider in the area of transport finance, focusing on the international transport market, which can be broken down into the shipping, aviation, and land transport segments.

In view of the persistent challenges presented by overcapacity in a number of shipping sectors, DVB is continuing to devote a great deal of time and energy to managing risk. As part of the restructuring of the business lines that was initiated in 2017, DVB brought together the assets that are no longer part of the core business to form a non-core assets portfolio in 2018.

The objective is to dispose of these assets within the next few years.

Strategic options, in particular substantial portfolio sales, continue to be examined, the aim being to find a lasting solution that preserves value. In this context, DVB signed a contract on December 21, 2018 to sell and transfer the land transport finance business to Landesbank Hessen-Thüringen. Under this contract, the employees and the entire customer credit portfolio in the land transport finance business are to be transferred to Landesbank Hessen-Thüringen. Subject to antitrust approvals and other conditions typical for the market, the sale is expected to be completed in the first half of 2019.

Furthermore, DVB and Volkswagen Financial Services AG signed a contract of sale on February 26, 2019 for all of the shares in LogPay Financial Services GmbH.

On March 1, 2019, a contract was signed with MUFG Bank, Ltd. and BOT Lease, Co., Ltd. for the sale and transfer of DVB's aviation finance business. Execution of the contract of sale is subject to antitrust approvals and other conditions. The sale is expected to be completed in the second half of 2019. Under this contract, the employees, the entire customer credit portfolio in the aviation finance business, further parts of the company's infrastructure, and the aviation investment management and aviation asset management business activities are to be transferred to the two contract partners.

1.4 DZ HYP

The entry of the merger in the commercial register on July 27, 2018 marked the successful completion of the process of merging the former DG HYP and WL BANK to create DZ HYP AG, Hamburg and Münster, (DZ HYP). DZ HYP is a leading real estate finance bank and one of Germany's largest Pfandbrief issuers. It serves commercial real estate investors, the housing sector, public-sector customers, and retail customers.

As the center of excellence and all-round specialist for real estate finance and local authority funding within the cooperative financial network, DZ HYP offers its customers a complete range of products and services focused on individual rather than standardized solutions. It has local offices throughout its core market of Germany and, moreover, supports its customers in selected international markets.

1.5 DZ PRIVATBANK

DZ PRIVATBANK S.A. headquartered in Luxembourg, together with its wholly owned subsidiaries DZ PRIVATBANK (Schweiz) AG, Zurich, (DZ PRIVATBANK Schweiz), IPConcept (Luxemburg) S.A. (IPC LU), and IPConcept (Schweiz) AG (IPC CH), is the center of excellence and solutions provider for private banking, fund services, and lending in all currencies. The services that it provides complement those of the other entities in the cooperative financial network.

DZ PRIVATBANK's products and services encompass not only tailored private banking solutions for high-net-worth individuals, business people, foundations, and semi-institutional customers but also bespoke service packages for professional fund initiators and flexible financing solutions denominated in euros and all other common currencies for retail and corporate customers.

Based on its expertise in asset management, funds, and financing, DZ PRIVATBANK aims to increase the market share of the cooperative financial network in the high-net-worth customer business, private banking, and the SME business.

DZ PRIVATBANK has built up extensive advisory, solution, and process expertise at its offices in Luxembourg and Zurich. It has also had a presence in the German market since 2010 and is now based at ten locations across Germany so that it can provide sales support locally for the cooperative banks.

Market conditions and interest rates remain challenging, characterized by the expansionary monetary policy of the European Central Bank (ECB), fierce competition, and the huge amount of time and resources taken up by implementing regulatory requirements. That is why DZ PRIVATBANK is also focused on measures to boost efficiency and productivity in its sales, production, and management units.

1.6 R+V

R+V Versicherung AG, Wiesbaden, (R+V Versicherung; subgroup abbreviated to R+V) offers its customers a comprehensive range of insurance and pension products, and is one of the leading providers in the German market. It operates in the life, non-life, health, and reinsurance sectors.

Under its 'Wachstum durch Wandel' (growth through change) program, R+V is focusing on improving the management of productivity and costs and, in particular, on gaining market share by exploiting existing potential within the cooperative financial network, expanding cross-selling, and digitalizing its business.

It is working on numerous projects for the future in this context. In 2018, for example, R+V and Union Asset Management Holding AG, Frankfurt am Main, (Union Asset Management Holding; subgroup abbreviated to UMH) together became the first provider in Germany to unveil a concept for the 'defined ambition' arrangement made possible under German legislation aimed at strengthening occupational pensions. The concept offers a solution for all partners under the social partnership model for occupational pension provision.

R+V is also exploring the innovative 'smart home' market with regard to future products and services. In 2018, it launched a project in collaboration with the Malteser Hilfsdienst charitable organization and IBM in which 25 homes – mainly single-person households – were fitted with highly sensitive sensors that enable help to be provided without delay in an emergency. This might be offered as a new assistance service from R+V or as a component of an insurance policy, such as for long-term care, health, or casualty insurance, in the future.

To help it develop suitable motor vehicle insurance concepts for the future, R+V is gathering initial findings from trials with its own autonomous minibuses. In this context, it has teamed up with public transportation provider Mainzer Mobilität to launch an innovative project involving a self-driving electric minibus.

1.7 TeamBank

TeamBank AG Nürnberg, Nuremberg, (TeamBank) together with its easyCredit product family is the consumer loan expert in the cooperative financial network. It is firmly focused on the customer with its products, positioning itself over the long term as a fair consumer finance expert in the German market. Its overarching strategic aim is to secure new customers for the cooperative financial network. TeamBank also operates as the consumer finance specialist for the cooperative banks in Austria, where it offers its 'der faire Credit' product.

A major focus of TeamBank's ongoing strategic development continues to be digital transformation. In September 2018, for example, it began offering 'easyCredit mit Kontoblick' (easyCredit with an account overview) to customers of the local cooperative banks. This is an even more straightforward process for handling loans up to a maximum of €15,000 that runs through the entire loan application online – including the lending decision – within just ten minutes.

TeamBank continues to offer installment purchase solutions under the 'ratenkauf by easyCredit' brand name that combine a simple and uniformly designed installment purchase function both online and in-store. In this context, it is working intensely to increase its market penetration by bringing more partners on board.

TeamBank has also developed the finance app fymio, a service for retail customers that uses a projection to warn of a potential financial squeeze at an early stage and automatically offer intelligent solutions.

1.8 UMH

UMH is the central asset manager in the cooperative financial network and offers investment solutions for retail and institutional clients. In both areas of business, it is aiming for further, sustainable expansion in the volume of assets under management.

In terms of business with retail clients, UMH is among the largest and most successful asset managers in Germany and offers solutions for wealth accumulation, asset structuring, wealth preservation, and pension provision. To generate further growth, it is focusing on segments relevant to customers' needs.

In the institutional client business, UMH is the central asset manager for the cooperative financial network and, at the same time, one of the leading providers of asset management for institutional clients outside the cooperative sector. It operates as a proactive risk manager and solutions provider that offers an integrated range of products across all asset classes, taking sustainability criteria into account.

1.9 VR LEASING

VR-LEASING Aktiengesellschaft, Eschborn, (VR-LEASING AG; subgroup abbreviated to VR LEASING) launched a program in 2017 to transform itself into a digital provider of finance for the self-employed and small businesses. As part of this, it has been operating in the market under the VR Smart Finanz brand name since mid-July 2018. This underlines the clear focus of its business on assisting the cooperative banks with the provision of finance to self-employed and small-business customers and the lower end of the SME segment. It offers its customers simple leasing, hire purchase, and credit solutions, together with digital services for day-to-day finances and smart data analysis. In connection with the transformation of its business, VR LEASING is exiting the factoring, centralized settlement, and IT leasing segments. On December 14, 2018, the BAWAG Group announced that it had signed a binding agreement to acquire all of the shares in BFL Leasing GmbH, VR LEASING's subsidiary for IT leasing. AKTIVBANK AG signed a contract of sale on December 20, 2018 to purchase the centralized settlement business of VR LEASING.

Under its new corporate identity, VR LEASING introduced the 'VR Smart express' product in 2018, which offers asset finance in a volume of up to €250,000. Thanks to an automated process using an online system, a binding financing decision can be given within just a few minutes.

In 2018, the existing products VR-FinanzGuide and SmartBuchhalter were combined to create VR Smart Guide. VR LEASING thus offers a comprehensive accounting solution that customers can use to keep track of spending, issue invoices, manage customers and suppliers, and get help with the preparation of financial statements.

2 Management of the DZ BANK Group

2.1 Management units

The DZ BANK Group comprises DZ BANK as the parent company, the DZ BANK Group's fully consolidated subsidiaries in which DZ BANK directly or indirectly exercises control, and other long-term equity investments that are not fully consolidated.

All entities in the DZ BANK Group are integrated into groupwide management. In the case of subgroups, the disclosures in the group management report on management units relate to the entire subgroup comprising the parent company of the subgroup plus its subsidiaries and second-tier subsidiaries. The management units are managed by the parent company in the subgroup, which is responsible for compliance with management directions in the subsidiaries and second-tier subsidiaries. The following management units are each managed as a separate operating segment:

- DZ BANK
- BSH
- DVB
- DZ HYP
- DZ PRIVATBANK
- R+V
- TeamBank
- UMH
- VR LEASING.

These fully consolidated entities are management units and form the core of the financial services group. DZ BANK forms a separate management unit from a higher-level perspective.

The terms DZ BANK Group and DZ BANK financial conglomerate are synonymous and refer to all the management units together. The context dictates the choice of term. For example, in the case of disclosures relating to economic management, the focus is on the DZ BANK Group, whereas in the case of regulatory issues relating to all the management units in the DZ BANK Group, the term DZ BANK financial conglomerate is used.

The DZ BANK financial conglomerate largely comprises the DZ BANK banking group and R+V. DZ BANK acts as the financial conglomerate's parent company.

2.2 Governance

Governance in the DZ BANK Group is characterized by the general management approach of the DZ BANK Group, appointments to key posts in the subsidiaries, and the committee structure.

2.2.1 General management approach

The general management approach consists of a combination of centralized and decentralized management tools. It is aligned with the business model and risks of the DZ BANK Group as a diversified financial services group that is integrated into the Volksbanken Raiffeisenbanken cooperative financial network and that provides this network with a comprehensive range of financial products.

The DZ BANK Group is a financial services group comprising entities whose task as product specialists is to supply the Volksbanken Raiffeisenbanken cooperative financial network with an entire range of financial services. Given the particular nature of the group, the Board of Managing Directors of DZ BANK consciously manages the group with a balanced centralized and decentralized approach with clearly defined interfaces and taking into account business policy requirements.

2.2.2 Appointments to key posts in the subsidiaries

For the purposes of managing the subsidiaries through appointments to key posts, a representative of DZ BANK is appointed in each case as the chairman of the supervisory body and generally also as the chairman of any associated committees (risk and investment committee, audit committee, human resources committee).

2.2.3 Corporate management committees

Figure 1 provides an overview of the committees of particular importance in the management of the DZ BANK Group.

The **Group Coordination Committee** is the highest-level management and coordination committee in the DZ BANK Group.

FIG. 1 – MANAGEMENT COMMITTEES IN THE DZ BANK GROUP

The objectives of this committee are to strengthen the competitiveness of the DZ BANK Group and to coordinate fundamental product and sales issues. The committee ensures coordination between the key entities in the DZ BANK Group to achieve consistent management of opportunities and risks, allocate capital, deal with strategic issues, and leverage synergies. The members of this committee comprise the Board of Managing Directors of DZ BANK and the chief executive officers of BSH, DZ HYP, DZ PRIVATBANK, R+V, TeamBank, UMH, and VR LEASING.

Various committees consisting of representatives from all strategic business lines and group functions assist the Group Coordination Committee's decision-making by preparing proposals. These are the following committees: the Group Risk and Finance Committee, the Group IT Committee, the Group HR Committee, the product and sales committees for retail customers, corporate customers, and institutional customers, the Heads of Internal Audit working group, the Heads of Compliance working group, the Economic Roundtable, and the Innovation Roundtable.

The **Group Risk and Finance Committee** is the central committee in the DZ BANK Group responsible for proper operational organization and, in particular, risk management in accordance with section 25 (1) of the German Supervision of Financial Conglomerates Act (FKAG) and section 25a (1) in conjunction with section 25a (3) of the German Banking Act (KWG). It assists DZ BANK with groupwide financial and liquidity management and provides support for risk capital management throughout the group. The Group Risk and Finance Committee also assists the Group Coordination Committee in matters of principle. The members of this committee include the relevant executives at DZ BANK responsible for finance, strategy and group development, risk, and treasury. The committee members also include representatives of the executives of various group companies. The Group Risk and Finance Committee has set up the following working groups to prepare proposals for decision-making and to implement management action plans relating to financial and risk management at group level:

– The **Group Risk Management working group** supports the Group Risk and Finance Committee in all matters concerning risk and the management of risk capital and market risk in the DZ BANK Group, and in matters relating to external risk reporting. At DZ BANK level, the monitoring and control of the aggregate risks to the bank is coordinated by the **Risk Committee**. The Risk Committee makes recommendations to the entire Board of Managing Directors in matters relating to risk management, risk methodology, risk policies, risk processes, and the management of operational risk.

– The **Architecture and Processes Finance/Risk working group** assists the Group Risk and Finance Committee with the further development of the integrated finance and risk architecture in the DZ BANK Group. In terms of the corporate management of the DZ BANK Group, this committee works on refining the blueprint for the business, process, and data architecture, ensuring a coordinated roadmap and a transparent project portfolio, and establishing overarching data governance.

- The management of credit risk throughout the group is the responsibility of the **Group Credit Management working group** of the Group Risk and Finance Committee. This working group monitors compliance with the rules in the group credit risk policy in connection with its involvement in drawing up group credit standards and related monitoring processes as the basis for groupwide management of counterparty default risk. In particular, this covers all measures relating to the monitoring and management of the limit allocation at individual counterparty level. The working group also participates in the further development and harmonization of the credit management organization and processes, and it discusses and continually develops the group credit risk strategy, group credit risk management, and group credit standards. It thus assists the Group Risk and Finance Committee with the groupwide harmonization of credit-related processes with due regard to their economic necessity. The monitoring and control of DZ BANK's overall portfolio for credit risk is coordinated by the **Credit Committee**. This committee normally meets every two weeks and makes decisions on material lending exposures at DZ BANK, taking into account the credit risk strategy of both the bank and the group. The Credit Committee is also responsible for managing credit risk at DZ BANK and country risk throughout the DZ BANK Group.

- The Group Risk and Finance Committee's **Market working group** is responsible for providing implementation support throughout the group in the following areas: liquidity management, funding activities, balance sheet structure management, and capital management. This body also focuses on coordinating and dovetailing funding strategies and liquidity reserve policies, as well as on planning the funding within the DZ BANK Group. In addition, the Market working group is responsible for refining the management of centrally measured market risk. At DZ BANK level, the **Treasury and Capital Committee** is the central body responsible for the operational implementation of the strategic requirements in the following areas to ensure integrated resource management: capital management, balance sheet and balance sheet structure management, liquidity and liquidity risk management, and income statement and profitability management. This committee also discusses overarching issues and current regulatory matters with the aim of identifying those requiring management action.

- The **Finance working group** advises the Group Risk and Finance Committee on matters concerning the consolidated financial statements, tax law at group level, regulatory law at group level, group controlling, and the management of financial resources. It discusses new statutory requirements and works out possible implementation options. The groupwide management framework (definitions, nomenclature, methods) is constantly updated, including in light of inquiries from the regulator.

The **Group IT Committee**, comprising the members of the boards of managing directors of the main group entities with responsibility for IT, supports the Group Coordination Committee in matters relating to IT strategy. This committee manages all overarching IT activities in the DZ BANK Group. In particular, the Group IT Committee makes decisions on collaboration issues, identifies and realizes synergies, and initiates joint projects.

The members of the **Group HR Committee** comprise the members of the boards of managing directors with responsibility for HR and the HR directors from the main entities in the DZ BANK Group. This committee helps the Group Coordination Committee address HR issues of strategic relevance. The Group HR Committee initiates and coordinates activities relating to overarching HR issues while at the same time exploiting potential synergies. It also coordinates the groupwide implementation of regulatory requirements concerning HR systems and facilitates the sharing of HR policy information within the DZ BANK Group.

The **product and sales committees** perform insight, coordination, and bundling functions relating to the range of products and services provided by the DZ BANK Group.

- The **retail customers** product and sales committee coordinates products and services, and the marketing activities of its members where there are overarching interests affecting the whole of the group. The common objective is to generate profitable growth in market share for the cooperative banks and the entities in the DZ BANK Group with a focus on customer loyalty and customer acquisition by providing needs-based solutions (products and processes) as part of a holistic advisory approach across all sales channels (omnichannel approach).

- The **corporate customers** product and sales committee is responsible for coordinating the strategies, planning, projects, and sales activities in the DZ BANK Group's corporate banking business if overarching interests are involved. The objective is closer integration in both the joint lending business with the cooperative banks and the direct corporate customer business of the entities in the DZ BANK Group.

- The **institutional clients** product and sales committee helps to strengthen the position of the DZ BANK Group in the institutional clients market.

The DZ BANK Group **Heads of Internal Audit working group**, which is led by DZ BANK, coordinates group-relevant audit issues and the planning of cross-company audits and activities based on a jointly developed framework approved by the relevant members of the Board of Managing Directors. This working group also serves as a platform for sharing specialist information across the group – especially information on current trends in internal audit – and for refining group audit activities. On behalf of this working group, the Head of Group Audit reports to the member of the Board of Managing Directors responsible for group audit and, where appropriate, to the Group Coordination Committee.

The **Heads of Compliance working group**, whose members comprise the heads of compliance in the management units and at ReiseBank AG, Frankfurt am Main (ReiseBank) and GENO Broker GmbH, assists DZ BANK with compliance management across the group if this is legally required. It also advises the DZ BANK Group's Group Coordination Committee on fundamental compliance-related issues. The Heads of Compliance working group is also responsible, in particular, for drawing up certain compliance standards in the DZ BANK Group that are discretionary under a comply-or-explain approach; in addition, it serves as a platform enabling specialists to share information across the group. When fulfilling its responsibilities, the Heads of Compliance working group must respect the individual responsibility of the heads of compliance in the group entities and ensure specific regulatory requirements are observed. The working group reports to the member of the DZ BANK Board of Managing Directors responsible for compliance and, where appropriate, to the Group Coordination Committee.

The **Economic Roundtable**, the members of which comprise the economists from the main group companies, helps the Group Coordination Committee to assess economic and capital market trends, providing a uniform basis for consistent planning scenarios throughout the group, and to prepare risk scenarios required by regulators.

The members of the **Innovation Roundtable** comprise specialists, executive managers, and innovation managers from the various divisions of DZ BANK and the group companies. The Innovation Roundtable is therefore the Group Coordination Committee's key point of contact for information on innovations and trends relevant to the group. The objectives of the Innovation Roundtable are to systematically examine innovative topics with group relevance on an ongoing basis, to bring together the divisions involved in innovation projects and to ensure that innovation activities in the DZ BANK Group are transparent. Innovation topics are broadly based throughout the DZ BANK Group and are promoted in the relevant DZ BANK departments and subsidiaries via the product and sales committees.

2.3 Key performance indicators

The DZ BANK Group's KPIs for profitability, volume, productivity, liquidity adequacy, and capital adequacy, as well as the regulatory return on risk-adjusted capital (RORAC), are presented below.

- **Profitability figures in accordance with International Financial Reporting Standards (IFRS):**
  The profitability figures (primarily loss allowances for loans and advances, profit/loss before taxes, net profit/loss) are presented in chapter II, sections 3.1 and 3.2 of this group management report as well as in note 33 of the notes to the consolidated financial statements.

- **IFRS volume figures:**
  The main volume-related KPIs include equity and total assets. These are set out in chapter II, section 3.2 (figure 3) and section 4 of the group management report, in the consolidated financial statements (balance sheet as at December 31, 2018), and in note 33 of the notes to the consolidated financial statements.

- **Productivity:**
  The KPI for productivity is the cost/income ratio. This KPI is described in chapter II, sections 3.1 and 3.2 of this group management report and in note 33 of the notes to the consolidated financial statements.

- **Liquidity adequacy:**
  Appropriate levels of liquidity reserves in relation to the risks associated with future payment obligations are demonstrated using the ratios for economic and regulatory liquidity adequacy presented in chapter VI, section 6.2 and section 6.3 of this group management report. The minimum liquidity surplus reflects economic liquidity adequacy. Regulatory liquidity adequacy is expressed in terms of the liquidity coverage ratio (LCR).

- **Capital adequacy:**
  The KPIs and the calculation method for economic capital adequacy are described in chapter VI, section 7.2 of this group management report. The KPIs for regulatory capital adequacy (coverage ratio for the financial conglomerate, total capital ratio, Tier 1 capital ratio, common equity Tier 1 capital ratio, and leverage ratio) are included in chapter VI, section 7.3.

- **Regulatory RORAC:**
  Regulatory RORAC is a risk-adjusted performance measure. In the year under review, it reflected the relationship between adjusted profit (profit before taxes largely taking into account performance-related income and capital structure effects) and the average own funds/solvency capital requirement for the year (determined quarterly). It therefore shows the return on the regulatory risk capital employed. This is described in chapter II, section 3.2 of this group management report and in note 33 of the notes to the consolidated financial statements.

Forecasts for core KPIs in the DZ BANK Group are set out in the Outlook section of the group management report.

2.4 Management process

In the annual strategic planning process, the entities in the DZ BANK Group produce a business strategy (objectives, strategic direction, and action plan), a finance and capital requirements plan, and risk strategies derived from the business strategy.

The planning by the management units is then validated and the plans are also discussed in strategy meetings. When the individual entity planning has been completed, the process then moves on to consolidated group planning, allowing active management of the DZ BANK Group's economic and regulatory capital adequacy.

The action plans to attain the targets are discussed in a number of ways, notably in quarterly meetings with the subsidiaries and in review meetings with DZ BANK's divisions.

At DZ BANK level, the main divisions involved in the strategic planning process are Strategy & Group Development, Group Risk Controlling, Group Finance, Bank Finance, and Research and Economics. The planning coordinators in the front-office divisions of DZ BANK and the subsidiaries are also incorporated into the process. The Strategy & Group Development division is responsible for overall coordination of the strategic planning process.

II Business report

1 Economic conditions

The pace of economic growth slowed during the year under review. Average inflation-adjusted gross domestic product (GDP) in Germany rose by 1.4 percent year on year.

Domestic economic output in the first quarter of 2018 was up by 0.4 percent compared with the preceding quarter. This was followed by a similar GDP gain of 0.5 percent in the second quarter. However, the third quarter saw a contraction in German economic output of 0.2 percent, one of the reasons being the automotive industry's hesitant switch to the new European emissions testing requirements. In the fourth quarter of 2018, the country's GDP growth was 0.0 percent.

Once again, higher consumer spending provided a boost to the German economy in the reporting year, although not to the extent of the previous year. Growth in government spending continued to slip back. Consumer demand rose by 1.0 percent year on year, aided by robust trends in the labor market and no improvement in the extremely low returns available on consumer investments. One of the consequences of an intensification of trade disputes during the year was a lower trade balance compared with the previous year. In the year under review, businesses stepped up capital spending at a faster rate with production capacity utilization remaining at a high level.

The increase in tax receipts generated by the overall robust economic growth meant that public finances in Germany ended 2018 once again with a budget surplus of 1.7 percent of GDP.

In the year under review, economic output in the eurozone grew by 1.8 percent year on year, the economic recovery being sustained in the first and second quarters of 2018 with growth rates of 0.4 percent (in each case compared with the previous quarter). In both the third and final quarters of 2018, the economy grew at a rate of 0.2 percent in each case.

Consumer spending once again proved to be a key driver behind the economic recovery in the eurozone in the reporting year. However, geopolitical crises, various conflicts, and above all the uncertainty arising from the Brexit negotiations and the United Kingdom's EU exit planned for March 29, 2019 as well as from current US trade policy did have some impact on consumer confidence during the year. Furthermore, rising energy prices also had an adverse effect on consumer willingness to spend in 2018. Over the course of the year, it became clear that businesses were increasing their spending on capital equipment. In view of the geopolitical factors referred to above, which have weighed on the global economy, and because export growth in the eurozone is likely to have lost momentum, it is anticipated that the trade balance will not have made any notable contribution to economic growth.

In the United States, economic growth in the reporting year was 2.9 percent.

The economy has therefore gained further significant traction compared with 2017, when the year-on-year rate of expansion was 2.2 percent. Overall, the principal economic driver in the US remained the recovery in consumer spending, which was bolstered by further improvements in the labor market, notably a further fall in the unemployment rate and a sharp rise in recruitment. Investment by businesses in plant and machinery once again rose at a stronger rate, boosted not least by the impact of the corporate tax reforms that came into force at the beginning of the year. The recovery in house-building was also sustained.

Trends toward economic recovery in key emerging markets such as India and Russia were sustained in the year under review. On the other hand, some of the highly indebted newly industrializing countries, such as Argentina and Turkey, suffered new economic crises. The Chinese economy was unable to maintain the really high level of growth achieved in the previous year. By and large, the stimulus for German exports derived from the demand from emerging markets was weaker in the year under review.

2 The banking industry amid continued efforts to stabilize the economy of the eurozone

The return of a trend toward economic policy driven first and foremost by national interests gained significant momentum in individual countries in the year under review.

The policy of 'America first' introduced by the US government in the first few months of 2018 with the imposition of customs duties on products from China, the EU, Canada, and Mexico was then ratcheted up over the rest of the year.

The increasingly tough reciprocal customs tariff barriers between the US and China, together with the associated price increases on products affected by the customs duties, pose the risk of depressing global trade and weakening global economic growth as a consequence of the resulting downward pressure on the demand for goods.

These negative economic influences were reinforced throughout the EU by the dispute between Rome and Brussels regarding the compatibility with the EU's stability targets of the draft Italian budget for 2019 initially submitted by the Italian government; this dispute came to a head toward the end of the year under review. To add to this, a notable feature over the whole of the reporting year was the ongoing uncertainty surrounding the details of how the UK was going to leave the EU.

At the end of November 2018, the UK and the EU managed to reach an agreement in principle regarding the structure of the transition period to follow the Brexit implementation date of March 29, 2019. This agreement allowed for a transition period up to no later than 2022 during which time the UK and the EU intended to enter into a comprehensive trade agreement. However, this agreement in principle was rejected by a UK parliamentary vote on January 15, 2019.

Not least in view of past crises in the eurozone, the developments described above highlight the need for an overhaul and strengthening of European Monetary Union (EMU), initial proposals for which have been put forward by French President Emmanuel Macron and German Chancellor Angela Merkel.

Joint EU-wide implementation of these initiatives was instigated at an EU summit at the end of June 2018, consisting of the first decisions in principle in relation to strengthening the European Stability Mechanism (ESM) and in particular concerning a backstop for the Single Resolution Fund (SRF).

At the beginning of December 2018, eurozone finance ministers (with the consent of the European Parliament) and, a few days later, the EU heads of state or government agreed to broaden the responsibility of the ESM so that it acts as the SRF backstop referred to above. This new structure is intended to take the form of a revolving credit line provided by the ESM for the SRF in an amount of approximately €60 billion to come into force no later than 2024. In addition, comprehensive resolutions were adopted related to a re-adjustment of EU banking regulation subject to the proviso of a further fall in the risk to which the EU banking sector is exposed.

At the same time, the agreed strengthening of the ESM specifies that, in the event of asymmetric shocks (such as possible negative effects on Ireland from Brexit), ESM precautionary credit lines can, for the most part, be utilized by EU countries whose economic conditions are generally still sound only if all debt criteria are satisfied, no excessive debt procedures (EDPs) have been instigated against these countries, and the countries concerned are not evidencing any excessive macroeconomic imbalances.

The content of the reform package described above and decided at EU level in December 2018 makes it clear that these measures at macroeconomic level alone are insufficient to increase the stability of the eurozone; it is also imperative that the individual EU countries themselves implement structural reforms with the aim of reducing their government debt.

On the whole, only limited progress was made in reducing new and total borrowing in the eurozone.

These efforts were supported by the ongoing phase of low interest rates and the continued path of economic recovery in the year under review, although the increase in the eurozone's economic output of 1.8 percent year on year during the reporting period was lower than the corresponding rise of 2.4 percent in 2017.

At the end of the third quarter of 2018, the total borrowing of the 19 eurozone countries equated to 86.1 percent of their GDP, a decrease of 2.1 percentage points compared with the figure of 88.2 percent as at September 30, 2017.

Even though France and Italy, countries that are important in generating overall economic growth in Europe, along with Portugal and Spain, which had been reliant on EU aid during the sovereign debt crisis, all made further gains in economic efficiency in the first nine months of 2018 compared with the first three quarters of 2017, they continued to suffer from a high level of indebtedness in the same way as some other eurozone countries, notably Greece.

Greece's public debt as a percentage of GDP stood at 182.2 percent in the third quarter of 2018 (third quarter of 2017: 174.9 percent) but the country continued on its path of economic recovery in 2018 compared with the previous year. Greece successfully exited its third economic adjustment program (loan of up to €86 billion) on August 20, 2018. However, if Greece is to make any noticeable impact in reducing its high level of indebtedness, it must sustain economic growth and continue with its reform policy and stringent budgetary discipline.

Italy is suffering from a high volume of non-performing loans in the banking sector and, above all, from having the highest relative government debt ratio in the eurozone after Greece; its public debt as a percentage of GDP stood at 133.0 percent in the third quarter of 2018 (third quarter of 2017: 133.6 percent).

This reflects a serious structural crisis, requiring sweeping reforms. Nevertheless, the coalition formed at the beginning of June 2018 between the far-right nationalist Lega and the populist Five Star Movement (M5S) based on the outcome of the parliamentary elections held on March 4, 2018 still put forward a proposed budget in mid-October 2018 for the coming year that involved new indebtedness of 2.4 percent of GDP. This included the withdrawal of social security cuts and suspension of the planned increase in value added tax. The new indebtedness of 2.4 percent, which ran counter to the EU's stability policy targets because of Italy's existing high level of indebtedness, led to a protracted dispute with the European Commission. Eventually, an agreement was reached with the Italian government on a slightly lower deficit ratio of 2.04 percent, which was enough to avert action by the EU authorities to instigate an excessive deficit procedure.

Portugal's public debt as a percentage of GDP stood at 125.0 percent in the third quarter of 2018 (third quarter of 2017: 129.5 percent) and the country made further progress on stabilizing its economy during the reporting year. The Portuguese economy was boosted in particular by steady consumer demand and a fall in unemployment. However, the banking sector continues to have significant legacy issues in the form of non-performing loans.

Spain's public debt as a percentage of GDP stood at 98.3 percent in the third quarter of 2018 (third quarter of 2017: 98.4 percent) and its economy continued to enjoy a pleasing rate of growth in the year under review. However, the new minority government with socialist Pedro Sanchez as Prime Minister, which took over after the previous conservative administration under Mariano Rajoy was ousted with a vote of no confidence at the beginning of June 2018, only has limited leeway because of the difficulty in securing a majority. The political instability is therefore hampering the necessary reform of the labor market and pension systems.

France's public debt as a percentage of GDP stood at 99.5 percent in the third quarter of 2018, only a slight reduction compared with the figure a year earlier (third quarter of 2017: 99.9 percent). The enthusiasm of the general public for the structural reforms introduced by President Emmanuel Macron in the first year of his term of office waned increasingly over the course of the year. Following a rail strike that dragged on for several months and that had a notable adverse impact on economic growth in the second quarter of 2018, the 'yellow vest' protest movement sparked off by higher carbon taxes on fuel rapidly gathered pace during the last few weeks of 2018 and became such a strong opposition force that it is likely more extensive reforms, such as the standardization of the system of competing pension regimes to cut costs, will have to undergo a retrospective review.

The trends in the eurozone described above show that the European Central Bank (ECB) with its policy of quantitative easing has 'bought' the necessary time for the EU countries burdened with significant debt to reduce their fundamental budget deficits. Nonetheless, the countries specified above have for the most part made only limited efforts to reduce their high levels of indebtedness and bring in the necessary structural reforms. This is especially worrying because it is questionable whether the EMU countries concerned will be in any position at all (because of the size of their debt burden) to cope with substantially higher interest rates arising from further normalization of the ECB's monetary policy.

It is clear that the current low level of interest rates has also had the effect of decreasing various EMU countries' efforts to implement austerity measures because the availability of low interest rates is noticeably reducing the debt burden anyway.

One of the main reasons why politicians are generally reluctant to introduce the necessary structural improvement measures to reduce public debt is that various EU countries are still seeing strong political movements that oppose the jointly agreed stabilization efforts of the single currency area. Aside from the UK's decision to leave the EU, the parliamentary elections in Austria, Italy, and Hungary have also shown, in particular, that increasingly anti-EU forces are gaining momentum and, as in the case of Italy recently, have even made it into government.

A key reason for the European Commission's reluctance to strictly implement the stability criteria under the Fiscal Compact agreed by the EU member states at the beginning of 2012 is most probably also the widespread return to a more nationalistic focus apparent within the eurozone. In the Fiscal Compact, the signatory countries committed to reducing their debt (as a proportion of GDP) each year by one twentieth of the difference between the debt level and the Maastricht limit of 60 percent of GDP.

At the same time, the ECB's current policy of zero and negative interest rates is making it harder for savers to build up sufficient capital and, in particular, to ensure they have adequate provision for old age. Although the weakness of the euro resulting from low interest rates is boosting companies' exports, it is also diminishing their efforts to lower costs and improve productivity. Furthermore, the ECB's policy of maintaining extremely low interest rates boosts the risk of misallocations and even the formation of bubbles in real estate and equities markets, which could jeopardize the stability of financial markets.

There is also a danger that future interest-rate rises in individual eurozone countries could lead to a wave of insolvencies among companies with chronic profitability problems. This may subdue economic growth and even trigger a recession if the situation worsens sufficiently. The countries giving rise to concerns about a sharp rise in insolvencies in the event of an interest-rate hike are Greece, Portugal, and Italy, because they each have a high proportion of non-performing loans to companies. This indicates a prevalence of firms with a sustained lack of profitability.

Another problem facing the ECB is that it will find itself with insufficient leeway in the event of an economic downturn and accompanying fall in inflation, because key interest rates will still be close to zero.

At its meeting on December 13, 2018, the ECB decided that its asset purchase program (quantitative easing, QE) launched in March 2015 would be discontinued at the end of 2018 following the reduction in the volume of monthly bond purchases from €30 billion to €15 billion in October 2018. At the same time, however, the ECB would continue to reinvest funds from maturing QE bonds. Explaining this move, ECB President Mario Draghi said that there was increased confidence that inflation in the eurozone was moving in the medium term in the direction of the central bank's target of below, but close to, 2.0 percent. At the meeting on December 13, 2018, the ECB also decided to leave the main refinancing rate unchanged at 0.00 percent and the deposit facility for banks at minus 0.40 percent.

By contrast, the Federal Reserve (Fed) raised its target range for the federal funds rate by 25 basis points on March 21, June 13, September 26, and again on December 19, 2018, taking the target range to the current level of 2.25 percent to 2.50 percent.

Against a backdrop of challenging market conditions, all the major German banks had to accept a fall in operating profits in 2018. The loss allowances for loans and advances recognized by the major banks were mostly lower than in 2017. Administrative expenses increased slightly year on year in the majority of cases.

3 Financial performance

3.1 Financial performance at a glance

The DZ BANK Group successfully consolidated its position in the year under review in challenging market conditions influenced primarily by the extremely low level of interest rates and demanding regulatory requirements.

The year-on-year changes in the key figures that made up the net profit generated by the DZ BANK Group in 2018 were as described below.

FIG. 2 – INCOME STATEMENT

€ million	2018	2017	Change (%)
Net interest income	**2,799**	2,941	-4.8
of which: net income from long-term equity investments[1]	**63**	73	-13.7
Net fee and commission income	**1,955**	1,864	4.9
Gains and losses on trading activities	**285**	506	-43.7
Gains and losses on investments	**150**	10	>100.0
Other gains and losses on valuation of financial instruments	**-120**	289	>100.0
Net income from insurance business	**490**	907	-46.0
Loss allowances	**-21**	-786	-97.3
Administrative expenses	**-4,059**	-3,959	2.5
Staff expenses	-1,843	-1,808	1.9
Other administrative expenses[2]	-2,216	-2,151	3.0
Other net operating income	**-109**	38	>100.0
Profit before taxes	**1,370**	1,810	-24.3
Income taxes	**-452**	-712	-36.5
Net profit	**918**	1,098	-16.4

1 Total of current income and expense from income from other shareholdings, current income and expense from investments in subsidiaries, current income and expense from investments in associates, income/loss from using the equity method, and income from profit-pooling, profit-transfer, and partial profit-transfer agreements; see consolidated financial statements, notes to the consolidated financial statements, note 34.
2 General and administrative expenses plus depreciation/amortization expense on property, plant and equipment, investment property, and on other assets; 2017 amount restated; see note 02 in the notes to the consolidated financial statements.

Operating income in the DZ BANK Group amounted to €5,450 million (2017: €6,555 million). This figure comprises net interest income, net fee and commission income, gains and losses on trading activities, gains and losses on investments, other gains and losses on valuation of financial instruments, net income from insurance business, and other net operating income.

Net interest income (including net income from long-term equity investments) in the DZ BANK Group declined by 4.8 percent year on year to €2,799 million (2017: €2,941 million).

Net interest income at DZ BANK (excluding net income from long-term equity investments) went down by €63 million. It decreased by €67 million at BSH and by €53 million at DZ PRIVATBANK. At DZ HYP, net interest income was down by €23 million, although the equivalent figure at DVB increased by €9 million. At VR LEASING and TeamBank, net interest income rose by €10 million and €23 million respectively.

Net income from long-term equity investments in the DZ BANK Group fell by €10 million to €63 million (2017: €73 million).

Net fee and commission income in the DZ BANK Group increased by 4.9 percent to €1,955 million (2017: €1,864 million).

It rose by €12 million at DZ BANK and by €56 million at DZ PRIVATBANK. At BSH, net fee and commission income improved by €8 million, whereas this item declined year on year at TeamBank (down by €14 million), DVB (down by €9 million), and VR LEASING (down by €8 million).

The DZ BANK Group's **gains and losses on trading activities** in 2018 came to a net gain of €285 million compared with a net gain of €506 million for 2017. This was largely attributable to the gains and losses on trading activities at DZ BANK amounting to a net gain of €258 million (2017: net gain of €485 million).

The net gains under **gains and losses on investments** went up by €140 million to €150 million (2017: €10 million).

The main reasons for the year-on-year change in gains and losses on investments were the factors described in the details for the operating segments DZ BANK, DVB, and UMH.

Other gains and losses on valuation of financial instruments in the DZ BANK Group amounted to a net loss of €120 million in 2018 (2017: net gain of €289 million).

Of the figure reported for the DZ BANK Group for 2018, a loss of €20 million (2017: gain of €291 million) was accounted for by DZ HYP and a loss of €105 million (2017: loss of €23 million) by DVB.

The DZ BANK Group's **net income from insurance business** comprises premiums earned, gains and losses on investments held by insurance companies and other insurance company gains and losses, insurance benefit payments, and insurance business operating expenses. In 2018, this figure decreased by 46.0 percent to €490 million (2017: €907 million).

This year-on-year change was attributable to a significant fall in gains and losses on investments held by insurance companies and other insurance company gains and losses.

The **loss allowances** determined in 2018 for the first time in accordance with IFRS 9 amounted to a net addition of €21 million (2017: net addition of €786 million).

Further disclosures on the nature and extent of risks arising from financial instruments and insurance contracts can be found in note 83 of the notes to the consolidated financial statements.

Administrative expenses in the DZ BANK Group rose year on year by €100 million, or 2.5 percent, to €4,059 million (2017: €3,959 million). Of this increase, €50 million was attributable to the first-time consolidation of VR Payment GmbH, Frankfurt am Main (until January 3, 2019: CardProcess GmbH, Karlsruhe). Staff expenses went up by €35 million or 1.9 percent to €1,843 million (2017: €1,808 million) and other administrative expenses by €65 million or 3.0 percent to €2,216 million (2017: €2,151 million).

The DZ BANK Group's **other net operating income** amounted to a net expense of €109 million (2017: net income of €38 million).

The main reasons for the year-on-year change in other net operating income were the factors described in the details for the operating segments DZ PRIVATBANK, DZ BANK, DVB, and UMH.

Profit before taxes in the reporting year amounted to €1,370 million compared with a figure of €1,810 million in 2017.

The DZ BANK Group's **cost/income ratio** (i.e. the ratio of administrative expenses to operating income) for 2018 was 74.5 percent (2017: 60.4 percent).

The **regulatory return on risk-adjusted capital (RORAC)** was 8.2 percent (2017: 11.3 percent).

The DZ BANK Group's **income taxes** amounted to €452 million in the reporting year (2017: €712 million). This figure included deferred tax income of €272 million (2017: deferred tax expense of €267 million) and a current tax expense of €724 million (2017: €445 million).

The DZ BANK Group generated a **net profit** of €918 million in 2018 compared with a net profit of €1,098 million in 2017.

The following provides an explanation of the above information and the details below (section 3.2) concerning the financial performance of the DZ BANK Group with reference to the corresponding presentation in the outlook for 2018 (chapter V of the 2017 group management report).

In 2018, the DZ BANK Group generated profit before taxes that was slightly below the budgeted figure. While the change in loss allowances was lower than expected, significant items on the other side of the equation were the net gains under gains and losses on trading activities, which were well below budget because of the widening of spreads in the interest-bearing securities portfolios, and other gains and losses on valuation of financial instruments, which fell short of projections. The latter budget shortfall was largely attributable to changes in credit spreads for bonds from the peripheral countries of the eurozone. In addition, it was not possible to attain the budgeted figure for net income from insurance business. The reason was a lower net gain under gains and losses on investments held by insurance companies and other insurance company gains and losses compared with budget as a consequence of the widening of spreads in the interest-bearing securities portfolios. Another factor was that other net operating income did not reach the budgeted figure, mainly because of the impairment losses recognized at DZ PRIVATBANK in respect of goodwill and customer relationships. However, the net gains under gains and losses on investments exceeded the budget by almost the same amount as this budget shortfall, primarily because of the sale of securities by DZ BANK.

3.2 Financial performance in detail

Figure 3 shows the details of the financial performance of the DZ BANK Group's operating segments in 2018 compared with 2017.

FIG. 3 – SEGMENT INFORMATION

2018

€ million	DZ BANK	BSH	DVB
Net interest income	1,081	766	177
Net fee and commission income	362	-40	84
Gains and losses on trading activities	258	-	-3
Gains and losses on investments	142	13	-18
Other gains and losses on valuation of financial instruments	36	8	-105
Premiums earned	-	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	-
Insurance benefit payments	-	-	-
Insurance business operating expenses	-	-	-
Loss allowances	140	-11	-80
Administrative expenses	-1,466	-480	-200
Other net operating income	-31	39	15
Profit/loss before taxes	**522**	**295**	**-130**
Cost/income ratio (%)	79.3	61.1	>100.0
Regulatory RORAC (%)	8.0	26.8	-33.8
Average own funds/solvency requirement	4,772	1,098	352
Total assets/total equity and liabilities as at Dec. 31, 2018	271,189	71,667	20,566

2017

€ million	DZ BANK	BSH	DVB
Net interest income	1,276	833	168
Net fee and commission income	350	-48	93
Gains and losses on trading activities	485	-	-26
Gains and losses on investments	49	18	-64
Other gains and losses on valuation of financial instruments	21	1	-23
Premiums earned	-	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	-
Insurance benefit payments	-	-	-
Insurance business operating expenses	-	-	-
Loss allowances	22	-20	-728
Administrative expenses[1]	-1,563	-470	-175
Other net operating income	112	20	-19
Profit/loss before taxes	**752**	**334**	**-774**
Cost/income ratio (%)	68.2	57.0	>100.0
Regulatory RORAC (%)	9.7	32.5	>100.0
Average own funds/solvency requirement	4,598	1,027	506
Total assets/total equity and liabilities as at Dec. 31, 2017	265,843	68,337	23,414

1 Amount restated in the DZ BANK operating segment and in the DZ BANK Group (see note 2).

	DZ HYP	DZ PRIVAT-BANK	R+V	TeamBank	UMH	VR LEASING	Other/ Consolidation	Total
	522	64	-	449	25	153	-438	**2,799**
	2	182	-	-13	1,416	7	-45	**1,955**
	1	10	-	-	-	-	19	**285**
	-10	-	-	-	-23	22	24	**150**
	-20	-	-	-	-51	-	12	**-120**
	-	-	15,997	-	-	-	-	**15,997**
	-	-	1,342	-	-	-	-69	**1,273**
	-	-	-14,208	-	-	-	-	**-14,208**
	-	-	-2,721	-	-	-	149	**-2,572**
	12	-	-	-70	-	-13	1	**-21**
	-299	-219	-	-222	-895	-142	-136	**-4,059**
	24	-188	3	1	30	-26	24	**-109**
	232	**-151**	**413**	**145**	**502**	**1**	**-459**	**1,370**
	57.6	>100.0	-	50.8	64.1	91.0	-	**74.5**
	16.0	-44.8	5.5	31.8	>100.0	0.2	-	**8.2**
	1,460	336	7,564	458	345	325	-	**16,711**
	85,882	18,322	107,351	8,536	2,559	4,768	-72,107	**518,733**

	DZ HYP	DZ PRIVAT-BANK	R+V	TeamBank	UMH	VR LEASING	Other/ Consolidation	Total
	545	117	-	426	29	143	-596	**2,941**
	-	126	-	1	1,415	15	-88	**1,864**
	11	10	-	-	-	-	26	**506**
	3	-	-	-	8	10	-14	**10**
	291	7	-	-	13	-	-21	**289**
	-	-	15,181	-	-	-	-	**15,181**
	-	-	3,531	-	-	-	-57	**3,474**
	-	-	-15,312	-	-	-	-	**-15,312**
	-	-	-2,595	-	-	-	159	**-2,436**
	18	-	-	-70	-	-10	2	**-786**
	-233	-217	-	-214	-858	-136	-93	**-3,959**
	2	-23	-10	5	3	-39	-13	**38**
	637	**20**	**795**	**148**	**610**	**-17**	**-695**	**1,810**
	27.3	91.6	-	49.5	58.4	>100.0	-	**60.4**
	43.4	6.8	11.4	34.6	>100.0	-7.6	-	**11.3**
	1,487	301	6,970	430	350	330	-	**15,999**
	85,855	16,802	103,419	8,009	2,445	4,749	-73,279	**505,594**

3.2.1 DZ BANK

Net interest income (excluding net income from long-term equity investments), which is primarily attributable to the lending business portfolios (Corporate Banking business line and a separately managed real estate lending portfolio) and the portfolios from the money and capital markets business, declined by 9.8 percent to €583 million (2017: €646 million). Net interest income also includes the interest expense and income relating to issued subordinated bonds and those purchased by group entities. The amounts of the individual items and the effects on the change in net interest income are described below.

In the lending business, net interest income fell by 1.1 percent to €466 million (2017: €471 million). Within this figure, net interest income in Corporate Banking declined marginally, by 1.1 percent, to €430 million (2017: €435 million). Net interest income from the separately managed real estate lending portfolio remained at the prior-year level of €36 million (2017: €36 million).

At DZ BANK, the Corporate Banking business line comprises the five regional corporate customer divisions that focus on corporate banking in Germany (Northern and Eastern Germany, Western Germany, Central Germany (from January 1, 2019: Central Corporate Banking), Baden-Württemberg, and Bavaria), the Investment Promotion division, and the Structured Finance division covering business with German corporate customers and foreign customers with links to Germany.

In accordance with the cooperative principle of decentralization, the distribution of responsibilities in the Volksbanken Raiffeisenbanken cooperative financial network, and the focus on the needs of companies, customer relationship management for corporate customers is provided by the local cooperative bank in conjunction with DZ BANK, or directly by DZ BANK.

The cooperative financial network has been pivotal in supporting the sustained economic upturn experienced by Germany's large and medium-sized companies that began some years ago. This is confirmed by its position in the corporate finance market.

Over the past ten years, the cooperative financial network's volume of lending has grown at a much faster rate than that of the market as a whole. As a result, the group's share of the corporate finance market in Germany has now increased to approximately 22 percent.

The macroeconomic conditions in Germany are generally positive for the corporate banking business operated jointly by DZ BANK and the cooperative banks, even though the pace of growth in the German economy slackened over the year under review. The country's large and medium-sized companies remain in robust financial health.

At the same time, however, the competitive environment in corporate banking is becoming increasingly challenging and there is still a great deal of pressure on credit margins. The game changers of our age, digitalization and the accompanying shift in customer behavior, are further intensifying this competition and significantly increasing the need for innovation and optimization in the Corporate Banking business line.

Moreover, the vast majority of large and medium-sized companies continue to be able to meet their capital investment requirements from their own cash flows or reserves thanks to their sound capital and liquidity position.

According to a survey carried out by DZ BANK in the autumn of 2018, German large and medium-sized companies' significant propensity to invest has eased off slightly compared with the spring of 2018, even though capacity utilization has remained at a high level. One of the key reasons for this is likely to be the shortage of skilled employees, which is an ever-growing concern for these firms. Geopolitical factors, particularly the worldwide trade disputes and the uncertainties linked with the approach of Brexit, are acting as a further brake on the inclination of businesses to invest.

Partly as a result of the stable German economy and companies' robust financial health, large and medium-sized companies have increasingly ventured into international business over the last few years. More than half of large and medium-sized companies operate internationally through exports, imports, joint ventures, foreign production facilities, or partnerships. DZ BANK has recognized this trend and, in the reporting year, entered into a cooperation agreement with Indonesia's third-largest bank, PT Bank Central Asia Tbk. The aim of this agreement is to provide support for each other's corporate customers, i.e.

direct and cooperative financial network customers in Germany that are targeting the Indonesian market as well as PT Bank Central Asia's Indonesian customers that are looking to enter the German market.

Net interest income from the money and capital markets business went down by 31.0 percent to €169 million (2017: €245 million), mainly in connection with a contraction in the portfolio of long-term securities in the year under review. Securities were sold to reduce the duration of the portfolio.

The adverse impact of subordinated capital (balance of subordinated own issues and subordinated securities purchased by group entities) on net interest income declined by 25.7 percent in 2018 to €52 million (2017: €70 million) as a consequence of a contraction in the liability portfolios.

Net fee and commission income rose by 3.4 percent to €362 million (2017: €350 million).

The principal sources of income were service fees in the Corporate Banking business line (encompassing, in particular, lending business including guarantees and international business), in the Capital Markets business line (mainly comprising securities issuance and brokerage business, agents' fees, transactions on futures and options exchanges, financial services, and the provision of information), and in the Transaction Banking business line (mainly consisting of payments processing including credit card processing, safe custody,-and gains/losses from the currency service business).

As part of service procurement arrangements, DZ BANK has transferred processing services in the lending business to Schwäbisch Hall Kreditservice, in the payments processing business to Equensworldline, and in capital markets business/transaction banking to Deutsche WertpapierService Bank. The expenses arising in connection with obtaining services from the above external processing companies amounted to a total of €167 million (2017: €164 million) and are reported under net fee and commission income for the individual Corporate Banking (€12 million) and Transaction Banking (€155 million) business lines.

The Corporate Banking business line saw a slight overall rise in net fee and commission income of 2.9 percent to €105 million (2017: €102 million). In the five regional corporate customer divisions, net fee and commission income went down by 22.9 percent to €27 million (2017: €35 million). By contrast, net fee and commission income in the Structured Finance division rose by 10.5 percent to €84 million (2017: €76 million). Net fee and commission income in corporate finance increased to €5 million (2017: €2 million).

In the Capital Markets business line, the contribution to net fee and commission income rose by 6.2 percent to €154 million (2017: €145 million). In this regard, net fee and commission income from securities issuance activities went up by 46.4 percent to €41 million (2017: €28 million) on the back of additional client portfolios in the bond issuance business.

In addition, net fee and commission income in the Transaction Banking business line amounted to €120 million, which equated to a year-on-year increase of €8 million or 7.1 percent. This increase was primarily attributable to higher income from the securities safe custody business and payments processing.

Net fee and commission income from other financial services fell by 88.9 percent in the reporting year to a net expense of €17 million (2017: net expense of €9 million).

€4 million of this decline was accounted for by first-time fee and commission expenses for rating information in connection with services for cooperative banks and €1 million by higher commission expenses related to own issues.

Gains and losses on trading activities amounted to a gain of €258 million in 2018 (2017: gain of €485 million).

Income from trading on behalf of customers matched the high level achieved in the prior year. The deterioration of gains and losses on trading activities was attributable to market-price-related measurement losses, specifically spread-induced measurement losses in interest-rate and fixed-income trading.

The liabilities recognized at fair value gave rise to a positive effect on earnings of €28 million in 2018 (2017: loss of €45 million).

Further factors influencing the gains and losses on trading activities in 2018 included interest-rate-related changes in the fair value of cross-currency basis swaps used for the hedging of financial instruments denominated in foreign currency amounting to a loss of €23 million (2017: loss of €49 million).

In the year under review, DZ BANK's balance of unrealized and realized gains and losses relating to asset-backed securities (ABSs) amounted to a loss of €4 million (2017: gain of €21 million).

Key influences on capital markets during the reporting year were the continuation of the ECB's program of quantitative easing up to the end of the year, as mentioned earlier, and its decision to leave the main refinancing rate unchanged at 0.00 percent and the deposit facility for banks at minus 0.40 percent beyond the end of 2018.

Furthermore, during the course of 2018, the Fed raised its target range for the federal funds rate in four stages (in March, June, September, and December 2018), in each case by 25 basis points, with the target range at the end of the year then standing at 2.25 percent to 2.50 percent.

The weakening of economic growth that was discernible in Germany and the eurozone from the start of 2018, but especially in the second half of the year, took hold against a backdrop of far-reaching geopolitical changes. The principal factor weighing on economic trends, other than the Brexit negotiations and the increasingly entrenched positions in the debt dispute between Rome and Brussels as the year progressed, was the trade disputes between the US and China, leading to an escalation in the reciprocal imposition of customs tariff barriers. These trade disputes in particular had a detrimental impact on the German economy, which is heavily dependent on exports.

In this environment, the DAX averaged out at 12,270 points in the year under review, which was virtually unchanged on the equivalent figure of 12,435 points for 2017. However, market prices were far more volatile in 2018 than in the previous year. The regulatory environment also impacted on the markets and market players, which again had to cope with the demanding requirements imposed by banking regulators in the year under review.

The products and services of DZ BANK's customer-oriented capital markets business are geared to the needs of cooperative banks, specialized service providers within the cooperative sector, and their retail and corporate customers.

In addition, DZ BANK has business relationships with direct corporate customers and institutional customers in Germany and abroad. The portfolio comprises competitively priced investment and risk management products involving the asset classes of interest rates, equities, loans, and foreign exchange. These products are complemented by a broad range of advisory and research services, structuring expertise, and platforms. In respect of all customer groups, the proportion of business conducted through electronic systems is rising significantly and increasingly replacing traditional telephone trading.

Against the current backdrop of low interest rates, German retail investors' top priorities are safety and understandable investment solutions. By focusing on these customer needs, and thanks to the successful sales performance of the cooperative banks, the cooperative banking group was able to achieve investment certificate sales of more than €4.5 billion in the year under review, repeating the record sales level achieved in 2017. DZ BANK's performance – as measured by data from the Deutscher Derivate Verband (DDV) [German Derivatives Association] – has once again been impressive, demonstrating its market strength with a market share of 17.9 percent as at the end of December 2018, based on the market volume invested in structured securities (97.8 percent of which is accounted for by investment products). The comprehensive range of high-quality services also earned DZ BANK the Best Issuer of 2018/2019 award from an independent panel of experts in this year's Investment Certificates Awards, the second time that DZ BANK has received this accolade following its success in the 2017/18 awards.

DZ BANK continued to focus on steadily and effectively digitalizing and optimizing securities processes in retail securities business. DZ BANK also has an advanced quality management system for customer service and product development based on the new ISO 9001:2015 standard. The system has been audited and certified by DQS GmbH Deutsche Gesellschaft zur Zertifizierung von Managementsystemen.

In order to stabilize their financial performance over the long term, the cooperative banks acquired investments with residual maturities of more than five years as part of their own-account investing activities. They stepped up their investments in corporate bonds and simply structured credit products in the form of credit-linked notes. Demand for structured bullet maturity bonds and share bonds was also brisk. The cooperative banks also aimed for broad diversification in their securities portfolios, particularly with regard to investments in equities and real estate. To this end, the main focus of demand was on fund products from the Union Investment Group, whose inflows again increased year on year.

The ECB's monetary policy of negative interest rates and the accompanying distortion of market prices and risk premiums also influenced DZ BANK's capital markets business with institutional customers. Income sources ranged across the entire fixed-income product segment but were primarily focused on bond trading in the secondary market. In the case of interest-rate structures and credit-linked notes, DZ BANK has been supporting its institutional customers for many years by offering a broad range of products, and in 2018 even managed to slightly exceed the high trading volumes seen in previous years.

A growing prevalence of trading business conducted on electronic platforms was observable in the year under review, resulting in a sharp rise in trading volumes with asset managers and banks both in Germany and abroad. Insurance companies and pension funds were increasingly directing their investing activities toward alternative asset classes, such as real estate and infrastructure. In the case of banks and asset managers, interest focused on flow products as well as spread products such as corporate bonds and bonds from emerging markets. Another key area of product activity in 2018 comprised the deals between DZ BANK and institutional customers relating to multi-tranche bonds from international and supranational issuers.

DZ BANK's capital markets business with large and medium-sized companies as well as major corporations is underpinned by a broad spectrum of products, with a particular focus on currency and interest-rate hedging in order to manage currency and interest-rate risk. The year under review saw encouraging growth in the currency business. This range is complemented by basic products in the core deposit-taking business and securities business for liquidity management.

The ongoing, ECB-driven policy of low interest rates, combined with limited demand for credit given that the majority of large and medium-sized companies have ample liquidity, meant that these companies' interest-rate hedging activities were concentrated on maturities of more than ten years.

An increase in active money market business was also evident.

New bond issuance business was significantly influenced in the reporting year by the ECB's measures in connection with its bond-buying program, as previously described. As a result of the ECB's plans to scale back its asset-buying program, there was a notable increase in risk premiums for bond issuers and, as a consequence, a reduced level of bond issuing activity compared with 2017. Banks obtained part of their traditional funding through unsecured bonds in the secured Pfandbrief market and/or in the international covered bond market. DZ BANK was able to benefit from this trend and expand its market share in the primary market for covered bonds. Overall, against the backdrop of a contracting new issues market, DZ BANK was able to significantly lift both its relative market share and also the absolute volume of its supported bond issues in some market segments.

The net gain under **gains and losses on investments** rose by €93 million to €142 million (2017: €49 million), largely as a result of gains from the disposal of securities in the liquidity pool in an amount of €172 million, some of which were offset by losses of €39 million arising from the termination of hedges measured at fair value through OCI as part of portfolio fair value hedge accounting.

Loss allowances, which were determined in 2018 for the first time in accordance with IFRS 9, amounted to a net reversal of €140 million (2017: net reversal of €22 million). This was mainly due to borrowers' rating improvements and successful restructuring and recovery measures.

Administrative expenses at DZ BANK amounted to €1,466 million, a decrease of €97 million, or 6.2 percent, on the comparable figure in 2017 of €1,563 million.

Other administrative expenses fell by €74 million in 2018 to €818 million (2017: €892 million). It should be noted, however, that the prior-year figure was adversely affected by merger-related expenses of €91 million related to the migration of data. On the other hand, there was a notable increase in the year under review of €12 million in the expenses incurred for the bank levy (2018: €36 million; 2017: €24 million).

The €23 million drop in staff expenses to €648 million (2017: €671 million) was due, among other things, to lower variable remuneration in the reporting year.

In 2018, **other net operating income** amounting to a net expense of €31 million (2017: net income of €112 million) included expenses of €80 million from the addition to the provisions for restructuring as part of the 'Verbund First 4.0' strategic program. A net income amount of €57 million (2017: net income of €51 million) arose from the reversal of provisions and accruals.

Other net operating income in 2017 had included, in particular, gains of €126 million on the disposal of DZ BANK's long-term equity investment in Concardis GmbH, Eschborn.

Profit before taxes for the year under review amounted to €522 million. The decrease of €230 million compared with the figure of €752 million reported for 2017 was mainly a consequence of the changes described above.

The **cost/income ratio** for DZ BANK in 2018 was 79.3 percent (2017: 68.2 percent).

Regulatory RORAC was 8.0 percent (2017: 9.7 percent).

3.2.2 BSH

In the BSH subgroup, **net interest income** declined by 8.0 percent to €766 million (2017: €833 million).

In the year under review, net interest income again suffered a detrimental impact from the low level of interest rates in capital markets. In addition, gains and losses on investments in joint ventures accounted for using the equity method went down by €22 million in the year under review to a net gain of €3 million (2017: net gain of €25 million). The main reason for this change was an impairment loss of €18 million recognized in 2018 on the carrying amount, calculated in accordance with the IFRS equity method, of Bausparkasse Schwäbisch Hall's Chinese long-term equity investment.

Interest income from investments in the reporting year remained below the 2017 level as a result of a lower average return coupled with a contraction in the volume of investments.

The simultaneous growth in the portfolios of loans issued under advance or interim financing arrangements reflected buoyant customer demand. This portfolio expansion enabled Schwäbisch Hall to reinforce its non-collective income base, more than compensating for the fall in income from home savings loans.

The volume of home savings deposits grew by a further €3.3 billion year on year to reach €61.6 billion as at December 31, 2018. The rise in interest expense associated with this portfolio growth was offset almost entirely by the higher proportion of low-interest-rate tariffs. The considerable volume of home savings deposits bears testimony to the particular merits of home savings, which enable the customer to enjoy steady capital growth independently of any capital market volatility, especially against the backdrop of inflation, which has recently begun to rise again.

Net fee and commission income amounted to a net expense of €40 million in 2018 (2017: net expense of €48 million).

This improvement was due to the fall in fees and commissions not directly attributable to the conclusion of a home savings contract.

In the home savings business, Bausparkasse Schwäbisch Hall signed approximately 554 thousand new home savings contracts (2017: 558 thousand), generating another impressive level of new home savings business with a volume of €29.7 billion and exceeding the corresponding prior-year figure of €28.0 billion by 6.3 percent.

In the home finance business, the realized volume of new business amounted to €15.2 billion, an increase of 3.8 percent on the corresponding prior-year figure of €14.6 billion. This figure includes home savings loan contracts and bridging loans from Bausparkasse Schwäbisch Hall and other referrals totaling €1.92 billion (2017: €1.86 billion).

The substantial growth in home savings and home finance reflects a marked preference among German citizens for personal pension arrangements based on home ownership. At a time of persistently low interest rates, more than half of the populace (and therefore twice as many as before the financial crisis in 2008) believes that home ownership is the best type of asset investment.

Not least because of the stable economic conditions currently prevailing in Germany, the heightened demand for additional homes was sustained in the year under review, although residential construction activity is failing to keep up with the substantial need for living space generated by a rising trend toward urbanization despite the very high level of capacity utilization in the construction industry, especially in urban centers.

Building society operations are receiving a further boost from the considerable modernization requirements in the existing housing stock, especially in relation to climate targets, which have recently once again become a hot topic of political debate. In this context, it is significant that just 22 percent of the entire housing stock consists of updated properties. This modernization deficit is not only affecting the quality of living accommodation but also damaging the environment because residential buildings account for two-thirds of energy consumption in Germany. An increase in the modernization rate alone from the current level of 1 percent to 2 percent would mean an energy-efficient upgrade for 70 percent of the housing stock.

Age-appropriate housing is another key area for future growth, and there is likely to be a substantial increase in the renovation of current housing stock, with demand for properties with barrier-free or improved access estimated to be approximately 3 million units by 2020.

By cross-selling supplementary products, Bausparkasse Schwäbisch Hall field sales staff also sold cooperative bank pension products, Union Investment Group investment funds, and R+V insurance policies.

Administrative expenses went up by €10 million to €480 million (2017: €470 million). At €221 million, staff expenses remained unchanged on the equivalent 2017 figure. Other administrative expenses rose by €10 million to €259 million (2017: €249 million), primarily as a consequence of higher IT costs in strategic projects and measures to enhance the home savings and home finance core businesses.

The main reason behind the rise in **other net operating income** of €19 million to €39 million (2017: €20 million) was the lower addition to provisions in 2018.

Profit before taxes declined by €39 million in the reporting year to €295 million (2017: €334 million), mainly as a consequence of the changes described above.

The **cost/income ratio** in 2018 was 61.1 percent (2017: 57.0 percent).

Regulatory RORAC was 26.8 percent (2017: 32.5 percent).

3.2.3 DVB

Net interest income in the DVB subgroup went up by 5.4 percent to €177 million (2017: €168 million).

Net interest income excluding net income from long-term equity investments declined by €12 million to €168 million (2017: €180 million). The prior year had been affected by special accelerated depreciation allowances on assets subject to operating leases. One of the notable features in 2018 was a further contraction in the portfolio volume compared with the previous year as a result of a continuation in the trend toward early redemption of loans. This reduced net interest income in the year under review because the resulting available funds were invested with Deutsche Bundesbank, which pays negative interest rates.

Net income from long-term equity investments improved by €21 million to net income of €9 million (2017: net expense of €12 million). In 2017, net income from long-term equity investments in respect of three equity-accounted entities had come to a total net expense of €15 million.

The international transport industry experienced overcapacity in existing fleets within some segments of the international maritime shipping market and offshore business, leading to falling freight rates and considerable pressure on shipping prices. Even though shipyards continued to offer attractive prices in these tough market conditions, ordering activity in the first half of 2018 was sluggish. This indicated the need for a realignment of supply and demand. Further orders for new vessels could jeopardize the recovery.

In 2018, the DVB subgroup generated new business of €3.7 billion (2017: €3.2 billion) in its core transport finance business and in investment management, based on a total of 144 deals (2017: 122 deals). DVB Bank maintains international branches in Amsterdam, London, Oslo, and Singapore.

At €84 million, **net fee and commission income** was down by €9 million year on year (2017: €93 million).

The fee and commission income generated by ongoing lending and by new business in transport finance declined by €5 million to €15 million and by €4 million to €32 million respectively. In contrast, fee and commission income from asset management increased by €1 million to €16 million, whereas the equivalent figure from consulting went down by €1 million to €21 million.

The improvement in **gains and losses on trading activities** of €23 million to a net loss of €3 million (2017: net loss of €26 million) was largely due to the change in the US dollar/euro exchange rate.

Gains and losses on investments amounting to a net loss of €18 million (2017: net loss of €64 million) included a gain of €7 million from the sale of a long-term equity investment and a gain of €5 million from the disposal of an aircraft by an equity-accounted long-term equity investment. Significant items offsetting these gains included impairment losses of €30 million on the carrying amounts of entities accounted for using the equity method. The figure for the prior year notably included impairment losses recognized in respect of five equity-accounted entities.

Other gains and losses on valuation of financial instruments deteriorated by €82 million to a net loss of €105 million (2017: net loss of €23 million) as a result of market conditions. In this regard, IFRS-related measurement effects, particularly from hedge accounting, and interest-rate-related measurements of cross-currency swaps led to a negative impact on earnings.

Loss allowances were calculated in accordance with IFRS 9 in the reporting year and decreased by €648 million to €80 million (2017: €728 million) due to the lower loss allowance requirement in 2018.

Administrative expenses amounted to €200 million (2017: €175 million). Within this figure, staff expenses rose by €20 million to €111 million (2017: €91 million). In contrast to the year under review, the 2017 figure had not been adversely impacted by the recognition of a provision for variable remuneration. Other administrative expenses rose by €5 million to €89 million (2017: €84 million), largely owing to higher consultancy expenses.

Other net operating income amounted to €15 million (2017: net expense of €19 million); the prior-year figure notably included expenses of €21 million incurred in connection with the refinement of the DVB business model.

In 2018, the **loss before taxes** improved by €644 million to a loss of €130 million (2017: loss of €774 million), primarily because of the above-mentioned reduction in loss allowances.

The **cost/income ratio** in 2018 was greater than 100.0 percent (2017: greater than 100.0 percent).

Regulatory RORAC was minus 33.8 percent (2017: greater than 100.0 percent).

3.2.4 DZ HYP

The merger of DG HYP and WL BANK to form DZ HYP was completed on July 27, 2018 when the necessary entries were made in the commercial register. DZ HYP is included in the consolidated financial statements for the year ended December 31, 2018 as a separate operating segment entity. Instead of the income statement line items of the two operating segment entities DG HYP and WL BANK, which were previously reported separately, the corresponding DZ HYP line items are presented for the prior year.

Net interest income at DZ HYP decreased by 4.2 percent to €522 million (2017: €545 million).

This decrease in net interest income is largely explained by the fact that the prior-year figure was boosted by significantly higher early redemption payments (2018: €63.7 million; 2017: €79.4 million). Effects from subsequent measurement in connection with the purchase price allocation (PPA) for the merger of the two former central institutions also had a negative impact of €19 million on net interest income in the reporting year (2017: positive impact of €11 million).

In 2018, the German commercial real estate market was bolstered by the stable economic conditions in the country. Against the backdrop of a sustained economic recovery in Germany (albeit weaker over the course of the year), the low interest rates continued to facilitate real estate financing and at the same time make this asset class relatively attractive to investors compared with other types of investment.

The transaction volume (excluding commercial investments in housing) amounted to €60.3 billion, which once again equated to a year-on-year increase of 6.2 percent (2017: €56.8 billion), although some of this increase was due to one-off items. The volume of transactions in the market for commercial investments in housing rose to €18.7 billion (up by 19.1 percent compared with the prior-year figure of €15.7 billion). Including the commercial investments in housing, the volume of transactions in 2018 totaled €79 billion (2017: €72.5 billion).

The high prices of real estate assets in prime locations encouraged German investors to invest in properties at sites outside the major cities. The transaction volume for commercial real estate (including housing investment) outside the prime locations amounted to €33 billion in the year under review. This means that around 42 percent of the total investment in 2018 was made outside the prime locations.

A sustained high level of demand from investors both in Germany and abroad, combined with an ongoing shortage of attractive properties, especially in prime locations, led to a further rise in prices in commercial real estate markets and, in particular, in the market for commercial investments in housing.

In the public-sector market, higher tax receipts in the first half of 2018 put local authorities in clear positive territory and led to a budget surplus of almost €800 million for these authorities.

The existing regional network of cooperative banks and the very close cooperation between the bank's two predecessor institutions and the local cooperative banks over many years provide DZ HYP with a huge advantage that will enable it to successfully implement its enhanced corporate strategy.

The local presence ensures not only that DZ HYP has access to the regional market and the necessary proximity to customers, but also that it can benefit from valuable detailed local market knowledge. At the same time, the real estate finance know-how of DZ HYP is also the ideal complement to the local cooperative banks' extensive knowledge. Supported by its six regional centers in major German cities and a further seven regional offices, DZ HYP is a reliable partner for the cooperative banks throughout the country. Its decentralized market presence also creates an advantage in terms of the allocation of risk because greater differentiation between credit portfolios based on region, sector, and customer group is possible.

In the year under review, DZ HYP expanded its real estate finance business year on year while maintaining a prudent risk policy. It generated a new business volume of €10,970 million (2017: €10,129 million) across its Commercial Real Estate Investors, Housing Sector, and Retail Customers/Private Investors divisions. Including financing in the Public Sector division, the bank generated new business of €11,864 million (2017: €10,894 million) from its four divisions in 2018.

In the commercial real estate finance business, DZ HYP lifted the volume of new business in 2018 to €7,725 million (2017: €7,105 million). Based on effective mutual support and greater information-sharing with the local cooperative banks in connection with commercial real estate finance, jointly generated new lending business was further expanded, the volume in 2018 amounting to €3,451 million (2017: €3,559 million).

In the business with the German housing sector, the commitment volume in 2018 amounted to €1,013 million, slightly exceeding the excellent prior-year level despite fierce competition (2017: €975 million). A significant area of focus in this business was the provision of long-term finance for new construction and renovation investment projects.

In the retail customers/private investor business, DZ HYP continued to expand the number of its partner banks within the cooperative financial network. This created the foundation for the successful new business figures generated by DZ HYP in 2018 from its consumer home finance activities. Based on these developments, the bank achieved encouraging year-on-year growth in the volume of new commitments in this division to €2,232 million (2017: €2,049 million).

Within the DZ BANK Group, DZ HYP also operates as the center of excellence for business involving public-sector customers. This primarily consists of business with local authorities in Germany, and with their legally dependent enterprises. These relationships are managed nationwide with the close involvement of the local cooperative banks. In the year under review, DZ HYP generated new local authority loan business of €894 million (2017: €765 million). Of this amount, €639 million (2017: €561 million) was attributable to business brokered through the local cooperative banks and €255 million to direct business (2017: €204 million). Some 84 percent of all deals were generated through the brokering activities of the local cooperative banks. This included €108 million (2017:

€53 million) relating to short-term local authority loans during the year.

Other gains and losses on valuation of financial instruments in 2018 amounted to a net loss of €20 million (2017: net gain of €291 million). This change was largely attributable to a widening of credit spreads during the year under review.

Administrative expenses went up by €66 million to €299 million (2017: €233 million). Within this figure, staff expenses rose by €8 million to €98 million (2017: €90 million). Other administrative expenses rose by €58 million to €201 million (2017: €143 million). Notable reasons for these increases were higher consultancy and IT expenses. The consultancy expenses of €98 million (2017: €56 million) included an amount of €61.4 million (2017: €20.3 million) relating to the following two projects: the 'Real estate business reorganization' project, which included the necessary consulting and other services in connection with the merger between the former DG HYP and the former WL BANK; and the 'Commercial real estate finance portfolio integration' project, which involved expenses in connection with the transfer of the commercial real estate portfolio from the former WGZ BANK to the former DG HYP.

Other net operating income increased by €22 million to €24 million (2017: €2 million), mainly as a result of the reversal of provisions.

Profit before taxes declined in the year under review by €405 million to €232 million (2017: €637 million). The primary reason behind this decrease was the negative change in other gains and losses on valuation of financial instruments as a consequence of the factors described above.

The **cost/income ratio** in 2018 was 57.6 percent (2017: 27.3 percent).

Regulatory RORAC was 16.0 percent (2017: 43.4 percent).

3.2.5 DZ PRIVATBANK

Net interest income at DZ PRIVATBANK contracted by 45.3 percent year on year to €64 million (2017: €117 million).

The decrease in net interest income was due to the fact that the figure for the reporting year contained the sales commission on interest-bearing transactions for the first time (2018: expense of €55.1 million; 2017: expense of €57.1 million). This commission had been included in net fee and commission income in the prior year. Net interest income in 2018 was also squeezed by the persistently low level of interest rates, the ongoing implementation of a risk-conscious investment strategy, and the expiry of securities exposures bearing higher rates of return.

DZ PRIVATBANK acts as the competence center for foreign-currency lending and investing in the interest-earning business. In 2018, the average volume of guaranteed LuxCredit loans was €4.4 billion (2017: €4.7 billion).

Net fee and commission income rose by 44.4 percent to €182 million (2017: €126 million). The increase in net fee and commission income was largely due to the fact that, as referred to above, sales commission on interest-bearing transactions was recognized for the first time under net interest income in 2018 (2018: expense of €55.1 million; 2017: expense of €57.1 million). Fee and commission income from the fund services business also went up, although the equivalent income from private banking went down.

As at December 31, 2018, the value of funds under management amounted to €101.6 billion (December 31, 2017: €108.8 billion). The number of fund-related mandates as at December 31, 2018 was 565 (December 31, 2017: 579).

At the end of the year under review, the volume of assets under management relating to high-net-worth clients amounted to €16.7 billion (December 31, 2017: €17.3 billion). The assets under management comprise the volume of securities, derivatives, and deposits of customers in the private banking business. The decentralized collaboration with the cooperative banks in Germany is coordinated through the branches of DZ PRIVATBANK in Berlin, Düsseldorf, Frankfurt, Hamburg, Hannover, Leipzig, Munich, Nuremberg, Oldenburg, and Stuttgart.

Other gains and losses on valuation of financial instruments declined by €7 million to a net gain of €0 million (2017: net gain of €7 million) as a result of market conditions.

Administrative expenses for the reporting year amounted to €219 million (2017: €217 million). Within this figure, staff expenses rose by €2 million to €128 million (2017: €126 million). General and administrative expenses fell slightly year on year to €80 million (2017: €82 million) despite an increase of €1.8 million in bank levy expenses. By contrast, the depreciation and amortization expense went up by €2 million to €11 million (2017: €9 million).

Other net operating income amounted to a net expense of €188 million (2017: net expense of €23 million) and in 2018 mainly consisted of impairment losses of €128 million on the goodwill recognized in connection with the merger of DZ PRIVATBANK S.A. and WGZ BANK Luxembourg S.A. completed in 2011 and impairment losses of €41 million in respect of customer relationships. These impairment losses were based on the enterprise valuation of DZ PRIVATBANK in November 2018, which took into account a range of factors, including information from the latest multi-year planning. Other net operating income also included expenses of €7 million relating to measures in connection with the restructuring of the private banking business.

In 2018, DZ PRIVATBANK generated a **loss before taxes** of €151 million. The decline of €171 million compared with the profit before taxes of €20 million in 2017 was attributable to the factors described above.

The **cost/income ratio** for DZ PRIVATBANK in 2018 was greater than 100.0 percent (2017: 91.6 percent).

Regulatory RORAC was minus 44.8 percent (2017: 6.8 percent).

3.2.6 R+V

Premiums earned (net) climbed by €816 million to €15,997 million (2017: €15,181 million), reflecting the tight integration of the R+V subgroup into the cooperative financial network. This exceeded the level of premiums earned in 2017 by 5.4 percent. Gross premiums written increased by 5.2 percent to €16,133 million in the year under review (2017: €15,338 million), also surpassing the excellent level of premiums written in 2017.

Premium income in the life insurance and health insurance business grew year on year by a total of 3.2 percent to €7,868 million.

In the life insurance business, premiums rose markedly, by 2.9 percent, to €7,273 million. This growth was predominantly attributable to higher one-off premiums, particularly in the Neue Garantien and bAV (occupational pensions) product lines, whereas premiums from products in the classic and unit-linked businesses declined.

In the health insurance business, net premiums earned rose by 6.3 percent to €595 million. The year-on-year growth in the full health insurance and other supplementary insurance lines was particularly encouraging. On the other hand, the occupational health insurance and private long-term care insurance lines contracted.

In the non-life insurance business, premium income grew by 4.8 percent to €5,788 million, with most of this growth being generated from vehicle insurance and corporate liability insurance business.

Premium income from the inward reinsurance business rose by 15.1 percent to €2,341 million. The business in Europe performed well on the whole, with particularly strong growth in the United Kingdom. Business was also encouraging in Asia, whereas other regions registered a decrease in premiums.

Gains and losses on investments held by insurance companies and other insurance company gains and losses declined by 62.0 percent to a net gain of €1,342 million (2017: net gain of €3,531 million).

At the end of the year under review, the level of long-term interest rates was slightly below the corresponding level at the end of the previous year. At the same time, the significant widening of spreads on interest-bearing securities had an adverse impact on this item during the year under review. Equities markets relevant to R+V did worse during the course of 2018 than they had in the prior year. In 2018, movements in exchange rates between the euro and various currencies were noticeably more favorable overall than in the previous year.

Overall, these trends in the reporting year essentially resulted in a €1,695 million deterioration in unrealized gains and losses to a net loss of €1,297 million (2017: net gain of €398 million), a €1,195 million deterioration in the contribution to earnings from the derecognition of investments to a loss of €21 million (2017: gain of €1,174 million), and a fall of €121 million in current income and expense to income of €2,346 million (2017: income of 2,467 million). On the other hand, foreign exchange gains and losses improved significantly, by €838 million, to a net gain of €181 million (2017: net loss of €657 million) and the balance of depreciation, amortization, impairment losses, and reversals of impairment losses improved by €91 million to a net expense of €50 million (2017: net expense of €141 million).

Owing to the inclusion of provisions for premium refunds (particularly in the life insurance and health insurance business) and claims by policyholders in the fund-linked life insurance business, the change in the level of gains and losses on investments held by insurance companies also affected the 'insurance benefit payments' line item presented below.

Net insurance benefit payments decreased by 7.2 percent from €15,312 million in 2017 to €14,208 million in 2018.

At the companies offering personal insurance, the changes in insurance benefit payments were in line with the change in premium income and in gains and losses on investments held by insurance companies and other insurance company gains and losses. An amount of €305 million (2017: €827 million) was added to the supplementary change-in-discount-rate reserve. The 'corridor method' for calculating the supplementary change-in-discount-rate reserve was introduced in accordance with the German Regulation for Amending the Regulation on the Principles Underlying the Calculation of the Premium Reserve (DeckRV), which came into force on October 23, 2018. This method changed the procedure for determining the reference discount rate in order to restrict excessive changes under the previous rules. The corridor method was applied retrospectively for the whole of 2018 for those R+V Group companies offering personal insurance that were affected.

The non-life insurance business had to absorb expenses arising from storms Friederike and Burglind of around €90 million and from storms Wilma and Yvonne of around €50 million during the reporting year. Overall, the level of natural peril losses was within the anticipated claims budget.

In the inward reinsurance business, the net claims ratio was considerably lower than in the previous year. Notable natural disaster events included the Camp Fire in California, Typhoons Jebi and Trami in Japan, and Hurricane Michael in Florida, which together gave rise to a total expense of €149 million.

Insurance business operating expenses went up by 4.9 percent to €2,721 million (2017: €2,595 million) in the course of ordinary business activities in all divisions, with a particularly sharp rise in the non-life and inward reinsurance segments.

As a result of the factors described above, **profit before taxes** for the reporting year fell by €382 million to €413 million (2017: €795 million).

Regulatory RORAC was 5.5 percent (2017: 11.4 percent).

3.2.7 TeamBank

Net interest income at TeamBank amounted to €449 million, a rise of 5.4 percent compared with the figure of €426 million in 2017. This increase was the consequence of growth in the portfolio of existing contracts in the easyCredit business with a portfolio interest margin that remained virtually unchanged year on year.

In the year under review, TeamBank benefited from significant consumer propensity to buy goods and services and take on finance, fueled by the stability of the German economy along with low interest rates and rising real wages.

During the year under review, TeamBank continued to face the challenges posed by advancing digitalization and the associated far-reaching structural transformation in the consumer finance market, changes that are accompanied by fierce competition. A large number of new providers, primarily fintechs, tech giants, and web portals, have identified consumer finance as an attractive area of business and are stepping up their efforts to position themselves in this market.

TeamBank, as the liquidity management expert in the Volksbanken Raiffeisenbanken cooperative financial network, focused at an early stage on aligning its business activities with market requirements in respect of the new technological challenges and on systematically ensuring that all changes are conceived from the customer perspective.

The integration of all customer touchpoints – mobile, online, and offline – in a digital ecosystem for liquidity management gives customers easy and innovative access to liquidity and services wherever and whenever they want. In these activities, a business policy committed to the cooperative values of fairness and transparency, which has been put into practice now for many years, remains an inalienable guiding principle for TeamBank.

Having introduced the seamless cross-media payment process 'ratenkauf by easyCredit', which is an important element of this ecosystem, TeamBank is so far the only provider, both in e-commerce and at the point of sale, to offer a simple and uniformly designed installment purchase function.

Moreover, an app called 'fymio', an innovative, proactive personal finance management facility, gives customers a projection of their future liquidity based on intelligent analysis of the transactions across all of their accounts.

Another milestone in creating a fully digitalized customer process was TeamBank's launch in February 2018 of a pilot program that enables loans of up to €15,000 to be sold based on account transaction data. Customers benefit from having to record much less information themselves, which also saves them time.

In 2018, TeamBank continued to strengthen the market presence of its product variants, which have been successfully established as part of its customer business.

In addition to Finanzreserve with a credit card, customers have also been able to benefit from easyCredit-Finanzreserve without a card since October 2016, providing them free of charge with a cash reserve incorporating a simple drawdown function. As at December 31, 2018, around 181,000 customers had either signed up for the easyCredit-Finanzreserve or were already using this fair and flexible means of borrowing. As a result, some 12.2 percent of new business was already being generated through easyCredit-Finanzreserve.

The proven advisory concept known as easyCredit-Liquiditätsberater – a financial compass created individually for each customer that provides both the customer and the advisor with the transparency necessary for the credit decision – is helping the cooperative idea to gain more prominence. Approximately 110,000 members of cooperative banks benefited from advice in 2018, of whom around 16,000 were new to the cooperative financial network.

The business model of a fair, innovative consumer finance provider constructed on this basis enabled TeamBank to increase loans and advances to customers by a substantial 5.3 percent to €8,390 million as at December 31, 2018 (December 31, 2017: €7,966 million). The number of customers rose again, by 44,000, to reach 877,000.

TeamBank now works in collaboration with 782 of Germany's 876 cooperative banks and with 117 partner banks in Austria. This underscores the success of the systematic focus on customer needs and the associated continuous refinement of the bank, to which TeamBank attaches huge importance as one of its unique selling propositions, especially at a time of increasingly fierce competition.

Net fee and commission income declined by €14 million to a net expense of €13 million (2017: income of €1 million). This change was primarily due to the lower level of fee and commission income from loan protection insurance agreements and higher commission payments to partner banks.

Loss allowances, which were determined in accordance with IFRS 9 in 2018, amounted to €70 million, the same level as in 2017.

As forecast, **administrative expenses** rose by €8 million to €222 million (2017: €214 million), including an increase in staff expenses of €5 million to €89 million (2017: €84 million) owing to a rise in employee numbers and an increase in other administrative expenses of €3 million to €133 million (2017: €130 million). The rise in other administrative expenses was predominantly due to higher IT and marketing expenses.

Other net operating income went down by €4 million to €1 million (2017: €5 million).

Profit before taxes for the year under review amounted to €145 million. The small decrease of €3 million compared with the figure of €148 million reported for 2017 was a consequence of the factors described above.

At TeamBank, the **cost/income ratio** in 2018 was 50.8 percent (2017: 49.5 percent).

Regulatory RORAC was 31.8 percent (2017: 34.6 percent).

3.2.8 UMH

Net fee and commission income at UMH rose marginally, by 0.1 percent, to €1,416 million (2017: €1,415 million).

The change in net fee and commission income was predominantly due to the factors described below. Because of the rise in the average assets under management of the Union Investment Group, which climbed by €20.2 billion to €330.7 billion (2017: €310.5 billion), the volume-related contribution to net fee and commission income rose significantly compared with the prior year. It accounted for 89.0 percent of the net fee and commission income.

The assets under management of the Union Investment Group comprise the assets and securities portfolios measured at their current market value, also referred to as free assets or asset management, for which Union Investment offers investment recommendations (advisory) or bears responsibility for portfolio management (insourcing). The assets are managed both for third parties and in the name of the group. Changes in the managed assets occur as a result of factors such as net inflows, changes in securities prices, and exchange-rate effects.

In 2018, income from performance-related management fees was significantly lower than in the prior year. Income from real estate fund transaction fees saw a year-on-year decrease.

In the year under review, global capital markets were significantly more volatile than in the previous year as forecasts regarding global economic growth were scaled back as the year progressed and efforts around the world to introduce protectionist measures gained momentum. The latter included escalating international trade disputes, notably between the US and China, involving the growing imposition of customs tariff barriers and the UK's contractual agreement with the EU in November 2018 to leave the EU, although this agreement failed to attract parliamentary consent in the UK in a vote held on January 15, 2019. Furthermore, the formation of a populist government in Italy and its plans for significant expenditure programs led to considerable uncertainty in capital markets. To add to this, the ECB's decision to end its net bond-buying in full by the end of 2018 reduced the economic stimulus provided by its monetary policy.

In these challenging conditions, Union Investment once again managed to generate a significant level of net inflows from its retail business amounting to a total of €7.5 billion (2017: €9.9 billion).

The long-standing sales partnership with the local cooperative banks has played an exceptionally important role in this regard, the success of which is due to the close working relationship between the local cooperative banks and their customers on the basis of trust.

In a challenging environment with persistently low interest rates, Union Investment's investment solutions have proven to be products of choice for customers looking to supplement interest-related investments with material and intangible assets and exploit associated opportunities with the aim of generating adequate returns on the basis of broadly diversified, long-term investments.

In the year under review, there was a further rise in the popularity among customers of the Union Investment Group's six product variants offered in the innovative PrivatFonds series of products. The six different multi-asset solutions combine an asset structure in line with customer preference with a graduated risk profile tailored to the needs of each individual customer. Following net inflows of €3.0 billion in the year under review, the PrivatFonds portfolio had grown by 4.8 percent as at December 31, 2018 to €21.9 billion (December 31, 2017: €20.9 billion).

Traditional fund-based saving offers an attractive investment aimed at long-term capital accumulation. The number of fund-linked savings plan contracts had risen to 2.3 million by the end of the year under review, with an increase in the 12-month savings volume to €4.3 billion (December 31, 2017: €3.5 billion).

In addition, customers invested a total of €1.2 billion in 2018 in the fund-based Riester pension products (UniProfiRente and UniProfiRente Select) offered by the Union Investment Group. The total assets in the portfolio of Riester pension products swelled to €16.7 billion as at December 31, 2018 (December 31, 2017: €16.5 billion).

Business involving fund-based saving in regular installments continued to enjoy dynamic growth overall. This is demonstrated by the number of fund-linked savings plans managed by Union Investment in its retail business at the end of 2018, which totaled 4.9 million (December 31, 2017: 4.4 million). These plans included contracts under employee-funded capital formation schemes as well as the traditional savings plans and Riester pension contracts referred to above.

The open-ended real estate funds offered by the Union Investment Group are tried and tested as an intrinsic-value-based component of the investment mix. The three open-ended real estate mutual funds and the UniImmo:Wohnen ZBI fund launched in July 2017 generated net new business totaling €1.7 billion in 2018.

In its institutional business, the Union Investment Group generated net inflows amounting to €7.8 billion (2017: €15.2 billion). A total of 64 new institutional clients were gained in the reporting year.

The persistently low level of interest rates also demanded a special effort to manage the risk and returns in the institutional business. As in other areas, the diversification of the institutional client portfolio is therefore now well advanced. This is reflected in the structure of the investment accounts, which feature a greater number of asset classes and a broader allocation by country.

In 2018, demand was focused primarily on concentrated equity strategies, structured credit, and, in general, sustainable investment. As the pressure from institutional investors to generate returns is increasing, short-term investments were switched to products with higher returns.

Sustainability is becoming an indispensable investment strategy component for an ever greater number of institutional customers, although such investors are also increasingly focusing on economic criteria and not just, as in the past, solely on ethical, social, and environmental aspects. As a result of the constantly growing interest in sustainably managed funds, Union Investment's portfolio of such funds grew from €33.5 billion as at December 31, 2017 to €41.4 billion as at December 31, 2018.

The Union Investment Group's outstanding reputation as a professional risk and portfolio manager was particularly reflected in the popularity of capital preservation strategies, the invested volume of which amounted to €25.7 billion at the end of 2018.

The negative change of €31 million in **gains and losses on investments** to a net loss of €23 million (2017: net gain of €8 million) was largely attributable to lower realized gains than in 2017 on the sale of funds in Union Investment's own-account investing activities. The prior-year figure also included the reversal of an impairment loss in respect of the equity carrying amount for BEA Union Investment Management Limited, Hong Kong.

The €64 million decline in **other gains and losses on valuation of financial instruments** to a net loss of €51 million (2017: net gain of €13 million) can be explained by a negative contribution from the valuation of own-account investments and, above all, by higher losses related to the valuation of guarantee commitments compared to the previous year.

The rise in **administrative expenses** by €37 million to €895 million in 2018 (2017: €858 million) was for the most part attributable to an increase in other administrative expenses of €26 million to €489 million (2017: €463 million). The latter was caused primarily by higher expenses for external research services that Union Investment has been recognizing in its own books since the year under review. Staff expenses went up by €11 million to €406 million (2017: €395 million), mainly caused by average pay rises and appointments to new positions.

Other net operating income improved by €27 million to €30 million (2017: €3 million). The remeasurement of provisions gave rise to higher income in the reporting year.

Profit before taxes went down by €108 million to €502 million overall (2017: €610 million), primarily because of the changes described above.

The **cost/income ratio** in 2018 was 64.1 percent (2017: 58.4 percent).

Regulatory RORAC was greater than 100.0 percent (2017: greater than 100.0 percent).

3.2.9 VR LEASING

Net interest income at VR LEASING amounted to €153 million, which was an increase of 7.0 percent on the equivalent figure in 2017 of €143 million.

The growth in net interest income (excluding net income from long-term equity investments) largely resulted from an increase in the core business of

€11 million, which in turn was mainly attributable to a sharp rise in the volumes of the digital products 'VR Smart flexibel' (until July 2018: 'VR Leasing flexibel') and 'VR Smart express' (until July 2018: 'VR Leasing express'). This offset a slight drop of €3 million in net interest income from non-core business, which is being scaled back in accordance with the strategy. This non-core business includes real estate leasing, centralized settlement, IT leasing, hire purchase and leasing business with a value of more than €750,000, together with VR LEASING's factoring and international business. Contracts of sale had already been signed by the end of 2018 for the following businesses: real estate leasing (VR-IMMOBILIEN-LEASING GmbH), centralized settlement, and IT leasing (BFL Leasing GmbH). Siemens Finance & Leasing GmbH, Munich, is available to act as a partner for the cooperative banks in the case of individual transactions with an asset value of more than €750,000.

Net income from long-term equity investments rose slightly, by €2 million, compared with the equivalent prior-year figure. The contributory factors were an increase of €1 million in the net income from long-term equity investments relating to the unconsolidated property companies and also an increase of €1 million relating to the joint venture VB-Leasing International Holding GmbH, Vienna, (VBLI). The international activities of VR LEASING came to an end with the sale of VBLI (including the associated local companies) in September 2018.

In the year under review, the priority at VR LEASING was to continue the work to transform itself into a digital provider of finance for the self-employed and small businesses. In this regard, VR LEASING has been using the brand name VR Smart Finanz since July 2018 to present its core business of leasing, hire purchase, and lending up to an asset value of €750,000 in the marketplace. VR Smart Finanz serves as a decentralized partner for very simple solutions for small and medium-sized enterprises (SMEs), supporting the cooperative banks with automated financing solutions for leasing, hire purchase, and lending up to €750,000, digital services, and forward-looking intelligent data analysis in connection with day-to-day finance activities in omnichannel sales. This brand focuses on the self-employed and small businesses as well as on the lower end of the SME segment. Its strengths lie in reliable, digitally supported financing decisions made within just a few minutes. This is made possible by the online tool VR LeasyOnline. The tool facilitates integrated, automated decision-making, enabling cooperative banks to come to a decision in real time on applications for finance up to an amount of €250,000 (up to €60,000 in the case of the 'VR Smart flexibel' business lending product and up to a total lending volume of €250,000 in the case of 'VR Smart express' asset finance). These solutions support the digital and digital/face-to-face sales channels. They help the cooperative banks provide their customers with a digital ecosystem of solutions and make use of the income potential offered by small-business and self-employed customers.

The growing importance of digitally supported financing solutions was underlined by the year-on-year rise of 17.6 percent (2017: 41.5 percent) in the volume of online business (leasing, hire purchase, and lending) transacted with the cooperative banks in the year under review. The proportion of total new business (leasing, hire purchase, and lending) accounted for by contracts concluded online declined slightly from 83.1 percent in 2017 to 81.8 percent in the reporting year.

Nevertheless, rapid market changes in the era of digitalization require solutions and processes to be refined and updated on an ongoing basis in order to keep up with the ever-shorter innovation cycles. That is why VR Smart Finanz's innovative online order channel is gaining significance: Small-business customers of the participating cooperative banks can now use an entirely online process via the website of their local cooperative bank at any time not only to apply for a business loan up to €60,000 but also to enter into the related agreement. The online order channel, which has been piloted since September 2017, continued to be rolled out in the year under review.

The digital services under the VR Smart Finanz brand have been enhanced to provide further components of a cooperative ecosystem. For example, December 2018 saw the market launch of the accounting software VR Smart Guide. This amalgamated the previous solutions SmartBuchhalter from VR Smart Finanz and VR FinanzGuide from DZ BANK into an even more powerful joint solution. VR Smart Guide provides digital support for small businesses and the self-employed, focusing on bookkeeping and financial planning. Further development work was also carried out on the Bonitätsmanager (credit status manager) application, which had been launched as a pilot project in 2017. The online application enables business people to check their own credit status and obtain information on how to optimize this status. The application was made available to businesses throughout Germany in 2018.

Net fee and commission income declined by €8 million to €7 million (2017: €15 million). The main reason for this change was the level of trailer fees to be paid to the cooperative banks, which climbed by €10 million to €25 million in line with the volume of business.

Gains and losses on investments amounted to a net gain of €22 million (2017: net gain of €10 million). The main item under gains and losses on investments in 2018 was the impact of the deconsolidation of VR-LEASING AG's equity-accounted 50 percent long-term equity investment in VBLI.

Administrative expenses rose by €6 million to €142 million (2017: €136 million). Within this total, staff expenses fell by €10 million to €77 million (2017: €87 million), mainly due to the reduction in the number of full-time equivalents. However, other administrative expenses increased by €16 million to €65 million (2017: €49 million), in particular because of higher consulting expenses in connection with VR LEASING's transformation into a digital provider of finance for the self-employed and small businesses.

In 2018, **other net operating income** amounting to a net expense of €26 million (2017: net expense of €39 million) included restructuring expenses of €17 million (2017: €52 million) in connection with the transformation into a digital provider of finance for the self-employed and small businesses.

VR LEASING generated a **profit before taxes** of €1 million in the year under review (2017: loss before taxes of €17 million), largely as a consequence of the factors described above.

The **cost/income ratio** in 2018 was 91.0 percent (2017: greater than 100.0 percent).

Regulatory RORAC was 0.2 percent (2017: minus 7.6 percent).

3.2.10 Other/Consolidation

The consolidation-related adjustments shown under Other/Consolidation to reconcile operating segment profit/loss before taxes to consolidated profit/loss before taxes are attributable to the elimination of intragroup transactions and to the fact that investments in joint ventures and associates were accounted for using the equity method.

The adjustments to net interest income were primarily the result of the elimination of intragroup dividend payments and profit distributions in connection with intragroup liabilities to dormant partners and were also attributable to the early redemption of issued bonds and commercial paper that had been acquired by entities in the DZ BANK Group other than the issuer.

The figure under Other/Consolidation for net fee and commission income largely relates to the fee and commission business of TeamBank and BSH with R+V.

The remaining adjustments are mostly also attributable to the consolidation of income and expenses.

4 Net assets

As at December 31, 2018, the DZ BANK Group's **total assets** had increased by €13.1 billion, or 2.6 percent, to €518.7 billion (December 31, 2017: €505.6 billion). This increase was largely attributable to a higher level of total assets at DZ BANK (up by €5.3 billion), R+V (up by €3.9 billion), and BSH (up by €3.3 billion).

The **return on assets**, which was calculated by dividing the net profit by the total assets at December 31, 2018, was 0.2 percent.

The **volume of business** amounted to €904,918 million (December 31, 2017: €871,114 million). This figure comprised the total assets, the assets under management at UMH as at December 31, 2018 amounting to €323,370 million (December 31, 2017: €323,919 million), the financial guarantee contracts and loan commitments amounting to €61,871 million (December 31, 2017: €40,505 million), and the volume of trust activities amounting to €944 million (December 31, 2017: €1,096 million).

The DZ BANK Group's **loans and advances to banks** rose to €91.6 billion, an increase of €2.2 billion or 2.5 percent. The corresponding prior-year figure has been restated (see note 02 in the notes to the consolidated financial statements). Loans and advances to banks in Germany went up by €1.2 billion to

€85.0 billion and loans and advances to foreign banks by €1.0 billion to €6.6 billion.

The DZ BANK Group's **loans and advances to customers** amounted to €174.4 billion, which was unchanged on the prior-year level.

Within this figure, loans and advances to customers in Germany rose by €5.9 billion to €145.9 billion, whereas loans and advances to customers outside Germany went down by €5.9 million to €28.5 billion.

As at December 31, 2018, **financial assets held for trading** amounted to €37.9 billion, a decline of €0.8 billion, or 2.0 percent, on the figure as at December 31, 2017. This change was mainly due to a fall in derivatives (positive fair values) (down by €1.5 billion), receivables (down by €0.7 billion), and shares and other variable-yield securities (down by €0.4 billion), although some of these decreases were offset by an increase in bonds and other fixed-income securities (up by €1.8 billion).

FIG. 4 – TOTAL ASSETS

Investments were down by €9.2 billion, or 16.0 percent, to €48.3 billion. The principal reasons were a decline of €8.9 billion in the portfolio of bonds and other fixed-income securities and a decline of €0.2 billion in the portfolio of shares and other variable-yield securities.

Investments held by insurance companies rose by €4.4 billion (4.6 percent) to €100.8 billion (December 31, 2017: €96.4 billion), above all due to a €4.0 billion increase in fixed-income securities to €48.9 billion and a €0.5 billion increase in registered bonds to €9.6 billion.

In the DZ BANK Group, **non-current assets and disposal groups classified as held for sale** amounted to €7.1 billion as at December 31, 2018, a rise of €7.0 billion compared with the figure as at December 31, 2017. This year-on-year change was largely attributable to two items. First, it consisted of an amount of €6.4 billion relating to credit portfolios at DVB in the aviation finance and land transport finance businesses and the wholly owned fully consolidated subsidiary LogPay Financial Services GmbH, Eschborn; these assets are to be sold by the end of 2019. Secondly, it consisted of an amount of €0.7 billion relating to two subsidiaries of VR LEASING classified as held for sale (BFL Leasing GmbH and VR-IMMOBILIEN-LEASING GmbH).

The DZ BANK Group's **deposits from banks** as at December 31, 2018 amounted to €142.5 billion, which was €6.4 billion, or 4.7 percent, higher than the figure reported as at December 31, 2017. Deposits from domestic banks were up by €4.1 billion to €128.8 billion, while deposits from foreign banks increased by €2.3 billion to €13.7 billion.

Deposits from customers grew by €6.2 billion, or 4.9 percent, to €132.5 billion (December 31, 2017: €126.3 billion). Deposits from domestic customers increased by €5.0 billion to €117.0 billion (December 31, 2017: €112.0 billion). Deposits from foreign customers rose by €1.2 billion to €15.5 billion (December 31, 2017: €14.3 billion).

At the end of the reporting year, the carrying amount of **debt certificates issued including bonds** in the DZ BANK Group was €63.9 billion (December 31, 2017: €67.3 billion). The contraction of €3.4 billion was largely due to a decline of €3.8 billion in the portfolio of other debt certificates issued to €12.9 billion, although, at the same time, the portfolio of bonds issued grew by €0.4 billion to €51.0 billion.

Financial liabilities held for trading went up by €0.7 billion, or 1.6 percent, to €45.0 billion (December 31, 2017: €44.3 billion). Increases in bonds issued (up by €1.5 billion) and in short positions (up by €0.5 billion) more than offset the fall in derivatives (negative fair values) (down by €0.7 billion) and in liabilities (down by €0.6 billion).

Insurance liabilities increased by €3.9 billion, or 4.4 percent, to €93.2 billion (December 31, 2017: €89.3 billion). This was largely attributable to rises of €3.0 billion in the benefit reserve and €1.0 billion in the provision for claims outstanding.

As at December 31, 2018, the **equity** reported by the DZ BANK Group was unchanged at €23.5 billion

(December 31, 2017: €23.5 billion). While retained earnings increased (up by €0.9 billion), there was a decline in both the reserve from other comprehensive income (down by €0.8 billion) and non-controlling interests (down by €0.1 billion).

The **capital and solvency situation** of the DZ BANK financial conglomerate, the DZ BANK Group, and the R+V Versicherung AG insurance group is described in this group management report in chapter VI (Combined opportunity and risk report), section 7.3 (Regulatory capital adequacy).

5 Financial position

Liquidity management for the entities in the DZ BANK Group is carried out by the Group Treasury division at DZ BANK and on a decentralized basis by the individual subsidiaries. The individual entities are provided with funding by DZ BANK (group funding) or the entities exchange cash among themselves via DZ BANK (group clearing). Liquidity is managed within DZ BANK centrally by head office treasury in Frankfurt and by the associated treasury units in its international branches, although Frankfurt has primary responsibility.

In the context of liquidity management, the DZ BANK Group distinguishes between operational liquidity (liquidity in the maturity band of up to one year) and structural liquidity (liquidity in the maturity band of more than one year). Dedicated steering committees have been established for both types of liquidity.
The DZ BANK Group has a highly diversified funding base for **operational liquidity**. A considerable portion is accounted for by money market activities resulting from the cash-pooling function with the local cooperative banks. This enables local cooperative banks with available liquidity to invest it with DZ BANK, while local cooperative banks requiring liquidity can obtain it from DZ BANK. Traditionally, this results in a liquidity surplus, which provides the main basis for short-term funding in the unsecured money markets. Corporate customers and institutional clients are another important source of funding for operational liquidity requirements. The DZ BANK Group therefore has a comfortable level of liquidity at its disposal. Funding on the interbank market is not strategically important to the DZ BANK Group.

The DZ BANK Group issues money market products based on debt certificates through its main branches in Frankfurt, New York, Hong Kong, London, and Luxembourg. DZ BANK has initiated a standardized groupwide multi-issuer euro commercial paper program, which DZ BANK and DZ PRIVATBANK S.A. can draw on.

Money market funding also includes collateralized money market activities, which form the basis for broadly diversified funding on money markets. To this end, key repo and securities lending activities, together with the collateral management process, are managed centrally in DZ BANK's Group Treasury division. Group Treasury also has at its disposal a portfolio of investment-grade liquid securities. These securities can be used as collateral in monetary policy funding transactions with central banks, in bilateral repos, or in the tri-party repo market.

Structural liquidity activities are used to manage and satisfy the long-term funding requirements (more than one year) of DZ BANK and, in coordination with the group entities, those of the DZ BANK Group.

Both for the DZ BANK Group and each individual group entity, structural liquidity is measured daily on the basis of total cash flows.

DZ BANK secures its long-term funding for structural liquidity by using structured and non-structured capital market products that are mainly utilized for the local cooperative banks' own-account and customer-account securities business and marketed to institutional clients. Long-term funding that is not covered is secured through systematic integration between the entities in the DZ BANK Group. Options for obtaining covered liquidity through Pfandbriefe or DZ BANK BRIEFE are used on a decentralized basis, in other words based on the different cover assets at DZ BANK, DZ HYP, and DVB.

Long-term funding requirements in foreign currencies are covered through the basis swap market, ensuring matching maturities.

The Group Treasury division at DZ BANK carries out groupwide **liquidity planning** annually. This involves determining the funding requirements of the DZ BANK Group for the next financial year on the basis of the coordinated business plans of the individual companies. Liquidity planning is updated throughout the year.

Monthly **structural analyses** of the various resources available on the liabilities side of DZ BANK's balance sheet are also conducted. The purpose of these analyses is to provide senior management with information that can then be used as the basis for actively managing the liability profile.

To complement the description of the funding structure, further information on **liquidity risk** can be found in this group management report in chapter VI (Combined opportunity and risk report), section 6.2 (Economic liquidity adequacy). The year-on-year changes in cash flows from operating activities, investing activities, and financing activities are shown in the **statement of cash flows** in the consolidated financial statements. Contractual cash inflows and cash outflows are set out in the **maturity analysis** in note 84 of the notes to the consolidated financial statements.

III Events after the balance sheet date

Events of particular importance that occurred after the end of the financial year are described in note 98 of the notes to the consolidated financial statements.

IV Human resources report and sustainability

1 Human resources report

In the group entities, attention focused on digitalization and other core issues, such as the regular process of updating the remuneration strategy, and managing changing demographics and succession planning. Tasks arising from regulatory and supervisory reporting requirements also formed an integral component of HR activities across the group.

1.1 HR activities across the group

During the reporting year, a total of 35 meetings were held by the existing HR committees or their members in the form of committee meetings of the Group HR Committee (GHRC, for information on its function see chapter I. DZ BANK Group fundamentals) as well as HR manager meetings and working group meetings. In addition, all members remained in close contact with each other during the course of the year with the aim of progressing joint HR activities.

The HR managers workshop 'HR and digitalization' resulted in the introduction of an HR digitalization radar. This will be used to monitor the progress of the digitalization journey in each entity, encourage regular sharing of information on the current HR digitalization initiatives of the DZ BANK Group, and continue driving forward the growing use of digital technologies in HR.

The members of the Remuneration working group worked closely together on the regular update of the joint remuneration strategy and also on implementing the requirements arising from the German Remuneration Transparency Act (EntgTranspG).

The HR Planning and Control working group has made a major contribution to the transparency of key HR indicators within the DZ BANK Group by jointly developing the HR Key Performance Indicator Cockpit (HR KPI Cockpit). A review of the current position regarding innovation and digitalization was carried out to extend HR planning and control in the individual entities and to drive forward the process of digitalization.

The Professional Development working group focused on future work, executive management development, and dialog concerning the opportunities and conditions for remote working in the various entities. The fourth group in the cross-mentoring program for heads of department started in the second quarter of 2018, with 15 mentor/mentee pairings from eight entities in the DZ BANK Group. The aim of the program is to develop the professional expertise of the participants through individual mentoring. Networking within the DZ BANK Group also plays a major role. This helps to strengthen the participants' identification with the entities, which in turn improves employee retention. Appropriate measures in the future will put the focus more firmly on the networking of all mentors and mentees beyond the groups and pairing arrangements.

Each year, a workshop is held for all the trainees in the group entities. This also has the aim of encouraging networking within the DZ BANK Group. The workshop in 2018 was attended by 77 trainees. Job shadowing in another entity within the DZ BANK Group is a standard component of each trainee program. The Trainee working group coordinates the range of networking options available. Key issues addressed by HR experts in 2018 included the future direction of the trainee programs, especially with respect to the issue of digitalization, and interaction with the target universities.

In addition to groupwide professional development activities, such as training for managers, the successful project run by the Careers working group, entitled 'Information week: Experiencing the sense of belonging in the DZ BANK Group', was continued in the reporting year. Successfully piloted in 2016 at TeamBank in Nuremberg and the Union Investment Group in Frankfurt, the project saw three information events staged in 2017 and two in 2018, each in a different entity. These information events actively help to nurture group identity. Such events offer new perspectives, promote an understanding of particular requirements in other entities, encourage a greater depth of professional dialog, and thereby produce employees capable of spreading the message among others. The events also present new vocational areas, support overarching succession and career planning, and help the DZ BANK Group to position itself as an employer of choice. Participation was open to any employee who had registered beforehand. The events were attended by a total of 41 employees, who came from different entities in the DZ BANK Group, and the feedback was very positive.

The 'Employees attract employees' initiative, which was launched in the third quarter of 2017 and forms part of overarching HR policy and succession planning, was successfully continued in 2018. The DZ BANK Group's own employees serve as active representatives of the business and, alongside HR officers, help to communicate the message that the entities in the group are excellent employers.

1.2 DZ BANK Group's employer branding campaign

The objective of the campaign is to establish the DZ BANK Group as an attractive employer in the marketplace and thereby attract suitable candidates and retain existing employees over the long term with the aim of safeguarding the future viability of the DZ BANK Group.

The campaign was initiated back in 2014 with the launch of an intragroup communications and information-sharing platform. In 2016, the activities were expanded to include a joint external careers website. Further public relations activities followed, supporting the launch of the employer brand in the external job market across Germany. In 2017, these activities included a nationwide bike-sharing campaign that was promoted on relevant social media. Considerable use was made of internal communications channels, for example with articles about individual employees in a feature entitled 'A day in the life of...'. In the year under review, employer branding responsibilities were transferred from the entities to the relevant line functions. Employer branding is now a firmly established element of the entities' HR policy and has a dedicated new website at karriere.dzbankgruppe.de.

1.3 DZ BANK Group Career Prize

In 2018, the DZ BANK Group Career Prize was awarded jointly by the entities in the DZ BANK Group for the tenth time. The Career Prize, which is worth €24,000, is awarded in recognition of outstanding academic dissertations in the area of banking and finance. A total of 220 dissertations were submitted, comprising 102 in the category of university master's degree dissertations and 118 in the category of bachelor's degree dissertations. The dissertations covered a wide variety of topics ranging from frequently recurring issues such as regulation and bank management to low interest-rate policies and their possible implications for the business models of the banks. Increasing numbers of dissertations were on matters relating to digitalization, such as blockchain and cryptocurrency, and corporate social responsibility.

1.4 Advancement of women

In 2011, the entities in the DZ BANK Group had issued a letter of intent declaring their intention to provide active support for the advancement of women in their careers, a measure necessary to safeguard the competitiveness of the group over the long term. The initiative is supported by joint events such as the 'Success strategies for women in business' training. The potential offered by women is also one of the specific factors the group aims to take into account in its recruitment and development of management trainees. In 2018, the proportion of managerial positions held by women was 21.2 percent. Other measures taken in support of this objective include, for example, action to ensure all entities in the DZ BANK Group regularly obtain auditberufundfamilie® certification or sign the diversity charter. The target ratios specified in the statutory requirements were implemented in the individual entities.

1.5 Corporate Campus for Management & Strategy

The Corporate Campus for Management & Strategy was set up in 2010 as a think tank and as an information-sharing and strategy platform for senior managers in the DZ BANK Group. It has become successfully established and is now in its eighth year. In 2018, 355 participants attended a total of nine different events. All the feedback from the participants was very positive without exception. Participants included members of boards of managing directors, heads of division, and, in some cases if relevant to the topic under discussion, employees below head-of-division level. The Corporate Campus Creative Lab extends the established offering with new creative formats focused on digitalization. This will be further expanded to bolster the innovative strength of the DZ BANK Group. The 'Digital driver's license – my role as digital leader' sessions are now well established and will be continued.

1.6 Taking responsibility for employees

The individual DZ BANK Group entities continued to provide services aimed at promoting the health of employees, such as attractive sporting opportunities within the company and special courses on preventing illness. Flexible working hours and part-time working models, together with other services aimed at improving work-life balance, are also included in the range of options and form a permanent part of HR policy in each entity.

FIG. 5 – EMPLOYEE DATA

Employees (average for the year, excluding trainees)	2018	2017
Total	30,732	30,279
Employees (as at December 31, including trainees)		
Total	31,896	31,272
Employees	30,767	30,223
Trainees	1,129	1,049
Proportion of trainees (%)	3.5	3.4
Germany	28,766	28,164
ROW	3,130	3,108
Male	17,389	17,139
Female	14,507	14,133
Total proportion of women (%)	45.5	45.2
Total number of managers	3,337	3,179
Proportion of female managers (%)	21.2	20.8
Full-time	25,468	25,130
Part-time	6,428	6,142
Proportion of part-time (%)	20.2	19.6
Period of service (years)	12.7	13.0
Staff turnover (%)	8.5	6.3
Resignations (%)	4.0	3.1
Professional development days per employee	2.6	3.1

2 Sustainability

The non-financial group statement of DZ BANK AG in accordance with section 340i in conjunction with section 315b of the German Commercial Code (HGB) is combined with the non-financial statement of the parent entity in accordance with section 340a in conjunction with section 289b HGB.

The separate combined non-financial statement is contained in the 'Non-financial statement' section of this Annual Report and is available in German at www.berichte2018.dzbank.de and in English at www.reports2018.dzbank.com

V Outlook

1 Economic conditions

1.1 Global economic trends

Despite numerous political risks and escalating trade disputes, the global economy remains robust. However, signs are emerging of a diminishing pace of growth as the economic cycle matures. At present, global economic growth is primarily being driven by the US economy, where tax relief had provided noticeable stimulus for companies and consumers alike in 2017. By contrast, the eurozone and China have seen an economic slowdown.

Germany and many other countries in the eurozone are likely to see a further tailing off of economic growth. The simmering trade dispute with the United States and the ongoing deadlock in the Brexit negotiations between the EU and United Kingdom have dampened appetite for investing activity in the countries that are affected. The Chinese government may potentially fend off a further slowdown by introducing tax relief and a state spending program. Another uncertainty factor for China is the continued threat that punitive tariffs may be imposed by the US government. Although the provisional agreement reached between Washington and Beijing in the trade dispute can be viewed positively, there remains substantial uncertainty about whether the talks will lead to a lasting détente in trade relations between the two countries.

Going forward, global economic output is expected to weaken in 2019, because the effect of government stimulus will gradually diminish and China will switch to a slower growth trajectory. The expansion of the global economy in 2018 is therefore likely to be confirmed at approximately 3.6 percent and will probably slow to around 3.5 percent in 2019.

Monetary policy remains expansionary worldwide. While the ECB has announced the end of its net purchases of bonds, it is continuing with its policy of negative interest rates. The Federal Reserve System, the US central bank, is responding to the late stage of the economic recovery and higher inflation rates in the United States with a steady but gradual departure from expansionary measures. With benchmark rates rising in the United States, there is a widening gap between interest rates in the eurozone and those on the other side of the Atlantic.

In early October 2018, the price of crude oil climbed to a high of US$ 86 per barrel. Since then, various positive news items on the supply side have combined to help oil prices fall again. The recent drop in oil prices indicates that energy prices will make a smaller contribution to inflation in the long term. However, diminishing capacity reserves could have a countervailing effect.

Looking ahead, inflationary pressure is likely to be limited worldwide on the whole. The global inflation rate will probably decrease slightly from around 3.9 percent in 2018 to approximately 3.6 percent in 2019.

1.2 Trends in the USA

Following the buoyant growth of the US economy in 2018, the current employment situation and the positive economic climate provide an encouraging outlook for 2019. Sentiment indicators are at a high level, suggesting that employment will continue to increase in the year ahead. However, jobs are likely to be added at a slightly slower rate due to the growing shortage of skilled workers. Consumer spending will therefore lose a little of its momentum but will nevertheless remain a key economic driver in 2019.

Losing the majority in the House of Representatives has made it harder for the US President to govern. The associated domestic political risks are illustrated by the drastic government shutdown. It can be assumed that the hardened political fronts will unsettle consumers and business.

In these conditions, the US economic growth rate is forecast to fall from approximately 2.9 percent in 2018 to around 2.5 percent in 2019. At the same time, the unemployment rate will continue to go down, from roughly 3.9 percent in 2018 to around 3.7 percent in 2019.

Following the sharp drop in energy prices in November 2018, the United States is expected to see a generally flatter inflation trajectory. Currently, an average inflation rate in the region of 2.2 percent is projected for 2019.

1.3 Trends in the eurozone

The economic climate in the eurozone deteriorated further at the end of 2018. The survey of European purchasing managers in December again pointed to a decline in economic activity in the eurozone. The index covering the industrial and service sectors fell to its lowest level in more than four years. In France, the 'yellow vest' protests caused sentiment indicators to plummet. The escalating protests across France have put a big question mark over the French President's plans for further reform. But Germany too faces a gloomier economic climate, although this should not come as too much of a surprise. The UK parliament has failed to approve the agreement on the United Kingdom's departure from the EU, so the risk of a disorderly Brexit has risen sharply.

Nonetheless, the European job markets are still relatively robust. The number of people in work went up by 0.2 percent in the third quarter, although this was a slightly smaller increase than in previous periods. The eurozone's total economic output in the period July to September was generated by a working population of 158.3 million people in the eurozone. This is the highest number ever recorded for the eurozone.

Overall, the risks to future growth in the eurozone are still regarded as largely in balance. However, a shift toward downside risks is observable due to the continued uncertainty stemming from geopolitical factors, the threat of protectionism, vulnerabilities in emerging markets, and volatility in financial markets.

Against this backdrop, economic growth is forecast to fall to around 1.2 percent in 2019, compared with 1.8 percent in 2018. A slower improvement in the prospects for the labor market now looks likely due to the softening of the economy. The unemployment rate is predicted to decrease to 7.7 percent this year. There are still marked differences between the members of the eurozone. Unemployment rates will remain the highest in large countries such as Spain and Italy. Only smaller reductions are likely to be seen in Germany and the Netherlands, where the job markets are very tight.

Domestic inflationary pressure will remain moderate in the eurozone. Current forecasts for 2019 are predicting an inflation rate in the vicinity of 1.7 percent.

1.4 Trends in Germany

The German economy has passed its peak, with growth weakening markedly over the course of 2018 to reach 1.5 percent. In fact, macroeconomic activity contracted in the third quarter of 2018. Trade restrictions and punitive tariffs continue to be a major risk factor. The uncertainty surrounding Brexit and the problems besetting the Macron government in France are putting a particular strain on the economic climate. Consequently, industrial companies' expectations regarding business prospects have slipped back into negative territory for the first time since spring 2016. However, the situation in other sectors still looks a lot rosier. The construction industry is especially benefiting from the boom in the real-estate market.

Economic growth is likely to diminish further over 2019 as a whole. Germany's economic output is expected to rise by around 1.1 percent in 2019.

In 2018, the number of unemployed people fell by 190,000, which was the sharpest drop since 2011. However, the rate of decrease tailed off over the course of the year. Given the continuing rise in employment and economic output, albeit at a slower rate, the positive trend seen in the labor market in recent years is set to continue in 2019. However, the supply-side shortages in the labor market and the diminishing rate of growth in economic output mean that it will be less pronounced. Germany's unemployment rate for 2019 is predicted to fall further, reaching around 4.9 percent.

The rate of inflation has recently been relatively high at 2.3 percent, due in no small part to the rise in prices for heating oil and petroleum. Since its high at the beginning of October 2018, the oil price has already fallen by around 20 percent. Consequently, the average inflation rate for 2019 is expected to be in the region of 1.9 percent.

1.5 Trends in the financial sector

For some years, the financial sector has faced considerable pressure in terms of both adjustment and costs caused by the need to comply with regulatory reforms and implement structural change to adapt to competitive conditions.

The regulatory measures introduced since the financial crisis have had a range of objectives, including restructuring of the supervisory architecture and improved capital and liquidity adequacy in order to make the financial sector more resilient in the event of a crisis. A further objective is to ensure that the risks arising from the business activities in the financial industry are not borne by the public sector and thus the taxpayer.

However, there is always a possibility that European banks could be more heavily impacted by supervisory measures as a result of differences in the way that the rules are applied at international level.

Further information on the regulatory environment can be found in section 5.1.2 of the opportunity and risk report.

In response to these regulatory requirements, banks have reduced their leverage over the last few years and substantially bolstered their risk-bearing capacity by improving capital and liquidity adequacy.

However, in addition to the regulatory environment described above, new competitors with approaches based on the use of data and technology are presenting the financial sector with the challenge of scrutinizing its existing business models, adapting them as required, and substantially improving its efficiency by digitalizing business and IT processes. The corresponding capital investment is initially likely to push up costs in the industry before the anticipated profitability gains can be realized.

Efforts to address the challenges described above will be made more difficult in 2019 by what is expected to still be a comparatively low level of nominal interest rates. This will be accompanied by a relatively flat yield curve and will prevent any significant increase in margins in interest-related business.

This statement is based on the current assessment of the monetary policy pursued by the ECB, which did stop its bond buying program in January 2019 but may continue to reinvest maturing paper. The emergence of a slow tightening and thus normalization of monetary policy would potentially be supported by a cautious raising of the ECB's deposit rate. However, if banks – particularly those in countries on the eurozone's periphery – were to continue to have access to long-term refinancing operations, there would be a countervailing expansionary effect.

In 2018, by contrast, the US Federal Reserve ended the policy of quantitative easing that it had introduced in the wake of the financial crisis and has gradually been raising interest rates with the objective of keeping the US economy on a growth trajectory while ensuring price stability. Implementation of further interest-rate hikes is currently predicted for 2019.

The growth that continues to be expected in large swathes of the global economy should also provide a boost for the financial position and financial performance of the European financial sector.

However, the potential impact of uncertain political and economic trends for the economic position of banks and insurance companies should not be ignored. Further information on macroeconomic risk factors can be found in section 5.1.3 of the opportunity and risk report.

2 Financial performance

Key features of the 2019 financial year alongside a continuation of the tough market and competitive conditions will include the further evolution of the DZ BANK Group's strategy in virtually all entities.

According to the planning for 2019, total assets will end the year somewhat higher compared with the figure as at the end of 2018. This planning is based on the forecast of growth, especially in the BSH, DZ BANK, TeamBank, and R+V operating segments, which will have a corresponding impact on the balance sheet. However, the level of total assets will also reflect the countervailing effect from the planned contraction of the portfolios of loans and advances in the DVB operating segment (sale and transfer of the land transport and aviation finance businesses) and the VR LEASING operating segment.

In these circumstances, **profit before taxes** is likely to increase slightly compared with 2018 and be at the lower end of the long-term target range of €1.5 billion to €2.0 billion.

Financial performance will be impacted by the persistently low level of interest rates. The future financial performance of the DZ BANK Group could be subject to risks arising from the political and economic climate outlined above. This is monitored continuously and factored into planning and management.

In 2019, it is anticipated that **net interest income** including **income from long-term equity investments** will remain steady overall, although there could be some pressure on income in the interest-rate-sensitive business models within the DZ BANK Group, due in part to the continuation of low interest rates.

Once again, **net fee and commission income** is projected to make a very hefty positive contribution to the earnings of the DZ BANK Group in 2019.

Based on the predicted growth in the volume of assets under management and the associated volume-related income, the UMH and DZ PRIVATBANK operating segments will again be responsible for a substantial portion of the net fee and commission income.

Any lasting uncertainty in capital and financial markets could have a negative impact on confidence and sentiment among retail and institutional investors, thereby depressing net fee and commission income.

Gains and losses on trading activities in 2019 are predicted to be at a far higher level than those in 2018.

Customer-driven capital markets business in the DZ BANK operating segment will probably provide particular impetus in 2019.

The primary prerequisite for a steady level of net gains under gains and losses on trading activities is considered to be a stable financial and capital markets environment.

Net gains under **gains and losses on investments** are predicted to make a modest contribution to profit before taxes in 2019 because the non-recurring items recognized in 2018 will not be repeated.

Other gains and losses on valuation of financial instruments in 2019 are projected to improve substantially compared with 2018.

Volatility in capital markets and especially the widening of credit spreads on securities from government issuers could have a negative impact on the forecast gains and losses.

Net income from insurance business is expected to rise in 2019. Based on the prediction of steady gains and losses on investments held by insurance companies, it is currently assumed that a further increase in gross premiums in the different divisions will lead to a higher level of net income from insurance business overall.

Exceptional events in financial and capital markets, changes in underwriting practices, or potential changes in the regulatory requirements faced by insurers may adversely affect the level of net income expected to be earned from insurance business.

Starting from a gratifyingly low level in 2018, expenses for **loss allowances** are likely to return to normal levels in 2019 and change in line with the lending portfolio, the targeted volume of new business, and the long-term standard risk costs.

The effects of possible political and macroeconomic developments on credit markets could have a detrimental impact on loss allowances.

Administrative expenses are predicted to be slightly higher in 2019 than they were in 2018. While administrative expenses in most operating segments will remain comparatively steady or decrease, it is likely that this item will rise in the UMH operating segment in view of the planned growth and capital spending requirements.

The **cost/income ratio** for the DZ BANK Group is likely to fall in 2019 as a result of the expected year-on-year increase in income and an almost unchanged level of expenses. As before, the DZ BANK Group will be focusing its energies on managing costs and generating growth in the operating business.

Regulatory RORAC, the risk-adjusted performance measure based on regulatory risk capital, will hold steady compared with 2018 on current assessments.

3 Liquidity and capital adequacy

Based on the position in the year under review and the funding measures planned for 2019, the DZ BANK Group predicts that it will again be able to ensure an appropriate level of economic and regulatory **liquidity adequacy** in 2019.

Further information on liquidity adequacy can be found in sections 6.2 and 6.3 of the opportunity and risk report.

As matters currently stand, the DZ BANK Group's **capital adequacy** will continue to be assured for 2019 from both economic and regulatory perspectives; that is to say, it will continue to have at its disposal the available internal capital necessary to cover the risks associated with the finance business and other risks arising from the group's business operations.

Further information on capital adequacy can be found in sections 7.2 and 7.3 of the opportunity and risk report.

Over the last few years, the DZ BANK Group has strengthened its capital base from its own resources – by retaining profits and reducing risk – and by implementing a capital increase in 2015. In 2019, a high priority will once again be given to strengthening the capital base.

4 Operating segments in detail

4.1 DZ BANK

Economic conditions at international level are expected to deteriorate in 2019. DZ BANK's earnings growth may thus be held back, particularly in connection with unresolved trade disputes and a renewed flare-up of uncertainty in the eurozone.

Moreover, the protracted period of low interest rates combined with pressure to innovate by further digitalizing products and processes may hinder a more positive financial performance.

In view of this worsening of market conditions and the challenges presented by the growing use of digital technologies, DZ BANK AG launched the 'Verbund First 4.0' strategic program in 2018 with the aim of improving profitability.

In 2019, **profit before taxes** will be roughly on a par with 2018, although the figure for the year under review was influenced by various one-off items.

The main one-off items with a positive impact on profit before taxes in 2018 were the disposal of securities and the high level of net reversals of loss allowances.

Net interest income (excluding income from long-term equity investments) in 2019 is predicted to be above the 2018 level, due to positive factors such as the growth and intensification of corporate banking.

Income from long-term equity investments will probably go up in 2019 because of the favorable assessment of profitable growth opportunities for the main management units.

Net fee and commission income is expected to be slightly lower in 2019 than it was in 2018. The steady volume-related growth of transaction banking is having a positive impact on net fee and commission income, although a countervailing effect is expected in the shape of a fall in fees and commissions from brokerage with retail customers.

The net gain under **gains and losses on trading activities** is projected to rise, reflecting the strategic growth targets defined for the customer business. Both the institutional customer business and the retail customer business are believed to still offer opportunities for growth in spite of the tough market conditions.

The stepping up of the cross-selling approach, focusing on risk management products and capital market products, should enable market potential to be harnessed, particularly in corporate customer business. As a result, the further consolidation of marketing activities in line with the corporate strategy should lead to additional operating income in the capital markets business.

Gains and losses on investments will probably deteriorate significantly in 2019 compared with 2018 because of the one-off item arising on the disposal of securities in the liquidity pool.

Expenses for **loss allowances** will probably rise to a normal level in 2019. Reversals of allowances in the year under review were not included in the planning. No net reversals are anticipated in 2019. The planning for 2019 is based on the expected loss from the lending business, particularly in corporate banking.

In all probability, **administrative expenses** will hold steady in 2019, having fallen sharply in 2018. The increase in costs was reduced by implementing the synergies decided upon in connection with the merger and by lowering project costs. Strategic cost targets are being defined as part of 'Verbund First 4.0' in order to achieve a sustained reduction in administrative expenses.

From the current perspective, it is anticipated that the **cost/income ratio** will improve in 2019 owing to the positive earnings expectations and an only small increase in administrative expenses.

Regulatory RORAC will probably rise in 2019 based on slightly higher capital requirements and income.

4.2 BSH

Although economic growth is expected to slacken in 2019, the same cannot be said of house-building. Construction activity is predicted to continue to grow at a fast pace this year. The umbrella trade organizations for the construction industry anticipate nominal revenue growth of 5.5 percent in 2019, compared with 6.5 percent in 2018. They also estimate that 315,000 homes will be completed (2018: 300,000). But that still does not match the level of demand, which various studies put at 350,000 to 400,000 homes per year. The predicted increase is restricted to the construction of apartments, which continues to boom. Construction of classic owner-occupied housing, however, will stagnate at the 2018 level. The biggest barrier to residential construction remains the lack of available building plots, but the shortage of construction capacity is also increasingly becoming an issue. In terms of financing, at least, the barriers remain low thanks to the persistently favorable interest-rate environment. BSH, a specialist in home finance, will also benefit from these conditions.
In its core home finance business, BSH expects earnings to be maintained at the high level seen in 2018. As regards home savings, the second core business at BSH, new business is predicted to be slightly below the 2018 level because of the continuing challenges presented by low interest rates and significant regulatory requirements.

BSH is anticipating a significant fall in **profit before taxes** in 2019, largely because of a decrease in net interest income.

The low interest rates are likely to have a substantial detrimental impact on income in 2019. Based on these expectations, **net interest income** is forecast to decline this year.

Net fee and commission income is predicted to remain at the prior-year level in 2019, assuming a more or less steady level of new business in the core home savings business.

With regard to **loss allowances**, BSH will continue to benefit from Germany's good economic performance and low unemployment rate. As a consequence, loss allowances will – adjusted for one-off items in 2018 – hold steady in 2019 despite the marked expansion in non-collective lending business in previous years.

Administrative expenses will be marginally higher in 2019, a consequence of strategic projects and action plans in connection with the further development of the home savings and home finance core businesses. Strict cost discipline and savings will help to limit the increase.

From the current perspective, the **cost/income ratio** is likely to rise as a result of the lower net interest income.

Regulatory RORAC will probably be well down because of the slightly higher capital requirements and the aforementioned fall in profit before taxes.

4.3 DVB

The year under review was another challenging one for the DVB operating segment.

In 2018, DVB continued to focus on the international transport business, which can be broken down into the shipping, aviation, and land transport segments.

As well as macroeconomic and sector-specific factors, the evolution of the business model was influenced by the decisions described below.

- DZ BANK and DVB have been examining all the strategic options for DVB since the start of 2018. Based on this analysis and in consultation with DZ BANK, DVB entered into contracts for the sale and transfer of the land transport business (contract signed on December 21, 2018) and the aviation finance business, including aviation asset management and aviation investment management (contract expected to be signed in the first half of 2019).

- The non-core asset (NCA) strategy for scaling back non-strategic businesses in a way that preserves value was initiated at the start of the reporting year. As at December 31, 2018, the volume of the NCA portfolio stood at €3.0 billion (December 31, 2017: €4.7 million).

In view of the adopted strategy, the objectives for 2019 are as follows:

- Systematically, purposefully, and successfully implement the sale and transfer contracts by the applicable transaction completion dates

- Examine the strategic options for the future positioning of DVB's continuing shipping finance business and of the NCA portfolio

- Ensure adequate profitability, with ongoing review and adjustment of the cost and workforce structures in the business model on the basis of restructuring activities

- Further reduce portfolio risk, in particular by rigorously implementing the NCA strategy and thereby continuing with the successful scaling back of the NCA portfolio that got under way in 2018.

Overall, DVB's projected financial performance will be influenced by conditions in the maritime market, the sale of the land transport finance and aviation finance businesses, and the examination of further strategic options. The bank therefore expects that its **profit before taxes** will at best be at break-even in 2019, with a sharp fall in both income and administrative expenses.

4.4 DZ HYP

In 2018, the political and economic risks at global level were reflected in the German economy, which was therefore unable to sustain the relatively high growth rates of previous years. The real increase in economic output in 2018 was 1.5 percent, the slowest rate registered since 2013. According to forecasts prepared by DZ HYP, the German commercial real estate market is nonetheless likely to remain stable in 2019. From today's vantage point, the high volume of capital chasing real estate investment opportunities coupled with the continuation of Germany's great economic strength and the ECB's expansionary monetary policy will once again result in high turnover in the real estate market. However, the end of the bond buying program and a potential interest-rate hike might have a detrimental effect. The robust labor market will ensure that demand for office space is maintained at a sound level. Higher wages will give a boost to retailers and help consumers pay housing rents, which continue to increase. The downward pressure on yields is therefore likely to remain significant and risk premiums could continue to go down.

Reflecting the portfolio, **net interest income** will probably be slightly higher than the 2018 level. Real estate lending is expected to increase slightly.

The spreads in government financing are expected to deviate only minimally from their level in 2018. **Other gains and losses on valuation of financial instruments** are therefore expected to be in neutral territory in 2019, having amounted to a net loss in 2018.

Expenses for **loss allowances** are predicted to return to normal levels in 2019. Net reversals of loss allowances, as seen in previous years, are not expected in the year ahead.

Administrative expenses will be considerably lower than in 2018. This is primarily due to a reduction in costs in connection with the merger of WL BANK and DG HYP to become DZ HYP, which has now been completed in legal terms.

As a result of the net effect of various opposing factors, **profit before taxes** for 2019 is expected to be slightly higher than in 2018 thanks to the sustained success of DZ HYP's business.

The **cost/income ratio** is projected to improve year on year for the reasons specified above.

Regulatory RORAC is also likely to improve due to the increase in profit before taxes forecast for 2019.

Details of the merger of WL BANK and DG HYP to create DZ HYP, which was completed in legal terms in 2018, can be found in section 2.4 of the group management report.

4.5 DZ PRIVATBANK

Although the economy of the eurozone will lose momentum in the medium term, economic sentiment remains in positive territory despite the adverse factors.

The inflation rate in the eurozone will probably not exceed the ECB's target of 2 percent in the next few years.

Net interest income will hold steady in 2019, even though interest rates remain low.

In 2019, **net fee and commission income** is predicted to rise thanks to the good performance of the private banking and fund services businesses. The main value driver is fund volume, which is likely to grow substantially – particularly in the case of third-party funds. The assets under management in private banking will also rise because of falling outflow rates.

Gains and losses on trading activities are forecast to hold steady in 2019.

Administrative expenses are expected to rise by only a modest amount thanks to the ongoing efforts to manage efficiency and effectiveness. The increase will be due not only to the sustained growth of costs relating to regulatory requirements but also to high levels of capital expenditure.

From today's perspective, the positive trend in income combined with the absence of one-off items (impairment of goodwill and customer relationships in 2018) is likely to mean that **profit before taxes** goes up significantly in 2019.

The **cost/income ratio** and **regulatory RORAC** are both forecast to improve substantially.

4.6 R+V

In the opinion of R+V, the 2019 financial year will continue to be shaped by the challenging conditions. The market environment will remain very tough from any number of perspectives, including political issues, regulation, low interest rates, economic conditions, and consumer behavior.

Customers hold DZ BANK, the Volksbanken Raiffeisenbanken cooperative financial network, and the latter's insurance specialist, R+V, in very high standing due to their financial strength, resilience, fair advice, good service, and tailored solutions.

In 2017, R+V launched its 'Wachstum durch Wandel' (growth through change) program with the overall objective of consolidating its strong position in the market and equipping itself for the future. The main aims within the strategic program are to safeguard profitable growth over the long term, bring about further growth in sales, refine the strong R+V corporate culture, and sharpen the focus on customer needs. This future-oriented strategy is being driven forward with support from the implementation of a digitalization strategy, encompassing a broad range of activities from the provision of products and services for customers and sales partners to the processing of customer inquiries. R+V is enhancing its sales function, thereby underpinning the process of change in the local cooperative banks.

It is paving the way for profitable growth by stepping up business and attracting new customers both in the corporate customer segment (occupational pension provision business and non-life business) and in the retail customer segment (introduction of innovative cooperative solutions). Various customer-facing and back-end processes are becoming increasingly digitalized. This creates advantages in terms of process efficiency and quality, reduces costs, results in quicker processing of customer inquiries, and puts R+V on a secure footing for the future. In 2018, for example, R+V ran successful pilot projects in the field of robotic process automation (RPA).

The aim is to transfer R+V's tried-and-proven business model for direct insurance to the hybrid world by ensuring permanently high quality of advice across all channels and thereby accelerating the growth of the insurance business. The company will make use of its regional focus and steadily increase the value added for customers, the Volksbanken Raiffeisenbanken cooperative financial network, and employees over the long term. As part of this, it will also update the range of products for retail and corporate customers. To this end, it constantly tailors its advisory and business processes to meet the requirements regarding collaboration with the cooperative banks. The successful transformation of the traditional approach for the digital world is illustrated by the provision of video-based advice. In 2018, R+V implemented new technologies and processes that are both digital and personal, enabling customers to obtain tailored advice directly via digital channels.

The quality of advice is becoming increasingly important for customers, sales partners, and the sales force. R+V continues to focus firmly on advising customers in the round and ensuring consistently high-quality advice whatever the channel. Based on the cooperative 'R+V-BeratungsQualität' advisory process, R+V has introduced an optimized process for advising retail customers. All partners are better integrated into this process, which lays the foundations for even more successful marketing.

In line with this strategy, R+V is planning to continue on its trajectory of profitable growth in 2019. R+V, the composite insurer in the Volksbanken Raiffeisenbanken cooperative financial network, is aiming to use its highly effective product portfolio to steadily increase its market penetration. Further consolidation of R+V's market leading positions in a number of areas, including personal pension products, occupational pension provision, vehicle fleets, and credit insurance, will be based on developing the potential available from both corporate and retail customers. R+V intends to achieve a lasting increase in market share by focusing on organic growth to be achieved by leveraging the potential available in the cooperative financial network, increasing cross-selling activity, offering innovative products, and expanding online and multichannel activities. This will also help to steadily increase the value added for the Volksbanken Raiffeisenbanken cooperative financial network.

In non-life insurance, R+V forecasts that **gross premiums written** will grow significantly in 2019. The **claims rate** will probably be lower than in 2018. Based on a slight rise in the expense ratio, the **combined ratio** (total of insurance business operating expenses and claims expenses divided by premiums earned) is projected to be on a par with 2018.

In the life insurance and health insurance business, R+V aims to back up the successes achieved in previous years with a long-term diversification strategy. **Gross premiums written** are predicted to remain at a high level in 2019.

The public at large has recognized that the statutory pension needs to be topped up by private and/or occupational pension provision. These circumstances alone already offer potential for growth. Particular momentum in the occupational pensions business could be provided by small and medium-sized enterprises in Germany. In businesses with fewer than 100 employees, many of these employees do not yet make use of the benefits available under occupational pension schemes. The German Act to Strengthen Occupational Pensions (BRSG), which came into force in 2018, addresses this situation in particular. This will give rise to new sales opportunities that will be actively exploited by R+V. Industry-specific pension schemes such as the dedicated schemes available in Germany for the chemicals industry (Chemie-Versorgungswerk), engineering industry (MetallRente), pharmacy industry (ApothekenRente), healthcare industry (KlinikRente), and media industry (Versorgungswerk der Presse) are helping to popularize occupational pension provision.

R+V expects the fierce competition in the reinsurance sector to continue. Following the major loss events that occurred in 2017 and 2018, it is anticipated that there will be a moderate increase in the price of reinsurance cover in 2019. In both commercial and retail business, the adversely impacted natural catastrophe segments are particularly expected to benefit from this trend. R+V will continue to pursue its strategy of profitable growth in its inward reinsurance business. Further growth of gross premiums written is expected. The retention of the stringent underwriting guidelines will ensure rigorous compliance with the income-oriented business policy. On the costs side, R+V anticipates a slightly higher **administrative expenses ratio** (net insurance business operating expenses divided by net premiums earned) and an improvement in the **combined ratio** in 2019.

Investing activity is based on a long-term investment strategy combined with a state-of-the-art approach to risk management. Focusing on asset protection, the strategy is designed to ensure that insurance obligations can be met at all times.

In the expectation that the environment of low interest rates will remain largely unchanged, the net gains under **gains and losses on investments held by insurance companies** are forecast to hold steady in

2019. This item will thus continue to make a significant contribution to overall profit before taxes at R+V in the future.

Overall, these developments are projected to cause a rise in **profit before taxes** year on year.

Regulatory RORAC is expected to go up in 2019 in line with the forecast growth of profit before taxes combined with a slight rise in capital requirements.

4.7 TeamBank

Although there are early signs that the economy is clouding over, consumer spending is likely to remain a key driver of economic growth in 2019. The consumer finance market is therefore predicted to deliver a stable performance. This solid growth trajectory, combined with consumers' increasing preference for digital delivery channels, makes the market very attractive to competitors. Further digital competitors with disruptive business models are expected to enter the market. Fintechs are becoming more and more important, and even tech giants such as Amazon and PayPal are increasingly making their presence felt in the German lending sector (e.g. installment payments for purchases of Amazon's own products).

In collaboration with the cooperative banks, TeamBank is aiming in 2019 to generate profitable, sustainable growth at a rate that is consistently higher than that of the market. TeamBank remains focused on establishing connectivity between the various methods of customer access, directing customers who prefer online/mobile channels to the cooperative banks, and attracting new customers and members as well as retaining existing ones.

TeamBank is forecasting a substantial gain in **net interest income** for 2019 based on portfolio growth.

In 2019, customer creditworthiness is expected to deteriorate compared with 2018. Given that the portfolio is likely to grow, **loss allowances** will therefore probably rise sharply.

Rigorous management of costs by focusing on the core business and targeted capital investment to ensure TeamBank's future competitiveness will help ensure that **administrative expenses** in 2019 are only slightly higher than the 2018 level.

Taking into account the hefty rise in net interest income, the slight increase in administrative expenses, and the greater level of loss allowances, **profit before taxes** in 2019 is forecast to be at the same high level reported for 2018.

Nonetheless, the **cost/income ratio** will remain at the pleasingly low level achieved in 2018.

The rise in minimum capital requirements will lead to a decline in **regulatory RORAC** in 2019.

4.8 UMH

UMH has continued to set itself ambitious targets for 2019, even though it has just completed a financial year in which it generated the third-highest net profit in its history, attained significant net inflows, and achieved a high level of assets under management.

Against the backdrop of persistently challenging conditions – the United Kingdom's imminent departure from the EU, the behavior of the United States under the Trump administration, and the drifting apart of the major currency areas and the associated fallout for the global economy – UMH intends to continue systematically exploiting opportunities to deliver a positive business performance in both the national and international environments.

In 2019, UMH is aiming to maintain new business at a very high level and forecasts that the positive trend in assets under management will continue, despite lower expectations regarding overall performance.

Net fee and commission income, which includes volume-related income, is projected to remain at a very high level in 2019, mainly as a consequence of the expected higher level of average assets under management. The countervailing effect of the planned sale of Union Investment Towarzystwo Funduszy Inwestycyjnych S.A. (TFI) on January 31, 2019 has already been factored in. A reduction in expected returns from performance-related management fees is also anticipated.

Net finance costs – comprising net interest income, gains and losses on investments, and other gains and losses on valuation of financial instruments – are likely to improve significantly in 2019, primarily due to a reduced expense in relation to the valuation of guarantee commitments and the expectation of a more positive valuation of own-account investments.

Administrative expenses are projected to rise significantly in 2019. Staff expenses will rise because of the growth-driven increase in the number of employees, the effect over a whole year from prior-year appointments, and planned salary increases. Building costs and IT costs will cause general and administrative expenses to go up. Depreciation, amortization, and impairment will increase as a result of the first-time capitalization of capital expenditure relating to completed projects. The planned sale of TFI will partly offset the rises across all items of administrative expenses.

A sharp increase in **other net operating income** is expected due to the anticipated gain on the sale of TFI.

Based on the factors described above, **profit before taxes** in 2019 is likely to remain close to the level reported for 2018.

The situation will be similar for the **cost/income ratio** and **regulatory RORAC**.

4.9 VR LEASING

VR LEASING's priority for 2019 is to carve out a clear position in an increasingly fierce competitive environment and thus provide the best possible support to the cooperative banks. It therefore needs to continue to offer solutions to meet customers' expectations, which have risen with the advance of digitalization. This is all the more important given that expectations regarding business prospects in 2019 – particularly among small and medium-sized enterprises (SMEs) – might dampen the propensity to invest and could thus push down demand for financing solutions. Regulatory requirements and the prediction of a continued policy of low interest rates remain challenging factors for the business environment.

Business model firmly focused on supporting the cooperative banks

Accompanying its new VR Smart Finanz brand, VR LEASING will continue to forge ahead with focusing its business model on being a digital provider of finance for the self-employed and small businesses in 2019. It will concentrate on generating sustainable growth and, as a strategic partner, giving the best possible support for the cooperative banks' business with corporate customers. Joint marketing should unlock potential among the self-employed and small businesses as well as (at the lower end of) the SME segment (BVR clusters 2–4). To this end, VR LEASING will optimize its digitally based solutions on an ongoing basis and make them available across all channels. It will also continue to develop smart data analysis. The aim is for the solution portfolio to be the ideal complement to the cooperative digital ecosystem.

Reorganization

To help sharpen the focus of its business model, VR LEASING intends to successfully complete the sale of VR-IMMOBILIEN-LEASING GmbH, BFL Leasing GmbH, and the centralized settlement business by June 30, 2019. This process began in 2018 when the contracts of sale were signed. The factoring business is to be taken over by DZ BANK, and in so doing be strengthened – particularly in terms of the range of products.

The transformation of the business model in 2018 heralded the start of VR LEASING's organizational restructuring. The first step, involving a reduction of the workforce to 500 full-time equivalents, is to be implemented by June 30, 2019.

Increasing the market penetration of digitally based solutions at the cooperative banks is expected to provide fresh growth impetus and lead to a rise in the commission it pays to the cooperative banks. Consequently, a small **profit before taxes** is projected for 2019.

Further development of simple, automated financing solutions

In 2019, VR LEASING will further optimize its automated liquidity solutions and decision-making for financing of up to €750,000 so that it can provide the best possible support for the cooperative banks' omnichannel sales. This will include enhancements to the 'VR Smart flexibel' business lending product and the 'VR Smart express' asset finance solution as well as joint marketing activities. Looking ahead, the limit for automated decisions on financing is to be increased in stages to €750,000.

To further strengthen the digital sales channel, the internet-based ordering process that enables corporate customers to enter into a borrowing agreement of up to €60,000 in an entirely online process on the websites of affiliated local cooperative banks will be continually enhanced and adapted to meet customer needs.

Expansion of digital value-added services
VR LEASING refines its digital value-added services systematically on the basis of customer feedback. One example is VR Smart Guide, which has been available since December 2018 as a joint, even more effective solution from VR LEASING and DZ BANK and brings together the previous stand-alone solutions SmartBuchhalter and VR-FinanzGuide. This application simplifies accounting and financial planning for self-employed and small-business customers on an ongoing basis. Bonitätsmanager (credit status manager), which has been available online since 2018, is an application that enables businesses across Germany to check their credit rating and get tips on how to optimize it. The application is to be expanded in 2019.

Enhancement of the digitally supported solutions and the even greater focus on the self-employed and small-business customer segment and on SME customers are likely to lead to significant expansion of the volume of business and a substantial increase in the benefits for local cooperative banks in 2019. As a result, a further year-on-year rise in **net interest income** is predicted for 2019.

The greater level of market penetration achieved by the 'VR Smart flexibel' business lending product will be accompanied by an increase in **loss allowances** in line with the planned growth in new business.

The progress achieved on the transformation into a digital provider of finance for the self-employed and small businesses will lead to a substantial fall in **administrative expenses** in 2019 compared with 2018. As expected, income is likely to decrease as a result of finally disposing of parts of the business in 2019. Overall, the **cost/income ratio** will improve in 2019. The reduction in headcount at the end of 2018 as part of a voluntary severance program is, as planned, projected to lead to a further decrease in staff expenses.

Taking into account the predicted improvement in earnings and the stability in risk-weighted assets compared with 2018, an improvement in **regulatory RORAC** is forecast for 2019.

VI Combined opportunity and risk report

1 Disclosure principles

In its capacity as the parent company in the DZ BANK Group, DZ BANK is publishing this opportunity and risk report in order to meet the transparency requirements for opportunities and risks applicable to the DZ BANK Group as specified in **sections 114 and 117 of the German Securities Trading Act (WpHG)** and **section 315 of the German Commercial Code (HGB)** in conjunction with **German accounting standard GAS 20**. Furthermore, the opportunity and risk report meets the transparency requirements regarding opportunities and risks applicable to DZ BANK as a separate entity that are specified in **section 289 HGB** in accordance with GAS 20.

This report also implements the applicable international risk reporting requirements, specifically those set out in the following legal standards:

– International Accounting Standard **(IAS) 1.134–136** (capital)
– International Financial Reporting Standard **(IFRS) 7.31–42** (nature and extent of risks arising from financial instruments) – with the exception of those in **IFRS 7.35–36**, the disclosures for which are included in the notes to the consolidated financial statements (note 83)
– **IFRS 4.38–39A** (nature and extent of risks arising from insurance contracts).

The maturity analysis in respect of financial assets and financial liabilities under **IFRS 7.39(a) and (b)** is disclosed in the notes to the consolidated financial statements (note 84).

The requirements set out in IFRS 7 are generally limited to financial instruments, shifting the focus of reporting to credit risk, equity investment risk, market risk, and liquidity risk. In contrast, the DZ BANK Group takes a holistic view of all these risks when using risk management tools and when assessing the risk position. As a consequence, the groupwide risk management system not only covers risks that arise specifically in connection with financial instruments, but also all other relevant types of risk. This integrated approach is reflected in this opportunity and risk report.

The opportunity and risk report also satisfies those **regulatory transparency requirements** in Part 8 of the Capital Requirements Regulation (CRR) that specify disclosures based directly on the risk management system. The disclosures concerned are as follows:

– Declaration by the Board of Managing Directors on the appropriateness of the risk management system in relation to the risk profile and business strategy (section 2.1.1)
– Risk statement by the Board of Managing Directors (section 2.1.2)
– Basic principles of risk management (section 3.1)
– Risk management objectives and strategies (sections 3.3 and 3.4)
– Structure and organization of risk management (section 3.5), including the nature and scope of the risk reporting systems (section 3.5.5) and the provision of risk information to the Supervisory Board (section 3.5.5)
– Risk management procedures, including the nature and scope of risk measurement systems (section 3.6.2)
– Guidelines for mitigating and hedging risk as well as strategies and procedures for monitoring the ongoing effectiveness of the measures taken to mitigate and hedge risk (sections 3.6.5, 6.2.4, 8.4.8, 10.4.4, 14.4.4, 16.4, 17.2.2, 18.2.2, and 19.2).

This opportunity and risk report also includes information in compliance with those recommended risk-related disclosures that have been issued by the **Financial Stability Board** (FSB), the **European Banking Authority** (EBA), and the **European Securities and Markets Authority** (ESMA) that extend beyond the statutory requirements and that are intended to improve the usefulness of the disclosures in the decision-making process.

In accordance with the statutory requirements, the quantitative disclosures in this opportunity and risk report are based on information that is presented to the Board of Managing Directors and used for internal management purposes (known as the **management approach**). This is designed to ensure the usefulness of disclosures in the decision-making process, as required by law.

The opportunity and risk report of the DZ BANK Group includes disclosures relating to DZ BANK. It is therefore a **combined opportunity and risk report** in accordance with section 315 (5) HGB in conjunction with GAS 20.22. A separate opportunity and risk report is not prepared for DZ BANK. Unless stated otherwise, the disclosures relating to the DZ BANK Group and the Bank sector also apply to DZ BANK.

DZ BANK Group

2 Summary

2.1 Statements from the Board of Managing Directors

The Board of Managing Directors has confirmed the accuracy of the following declarations by signing the 'Responsibility statement', which is included in this annual financial report.

2.1.1 Adequacy declaration

The Board of Managing Directors of DZ BANK considers that the **risk management system** in place is **adequate** with regard to the risk profile and risk strategy of the DZ BANK Group. DZ BANK continuously develops the risk management system and ensures that any identified need for improvement is addressed systematically without delay.

2.1.2 Risk declaration

The DZ BANK Group's **business model** and the associated business models used by the management units (see section I.1 of the (group) management report) shape the risk profile of the group. The main risks associated with the business models in the management units are presented in Fig. 7 and Fig. 8 in section 2.3.2 of the opportunity and risk report. The businesses operated by the DZ BANK Group and the management units that have a significant impact on the risk profile are described under 'Definition and business background' and 'Risk strategy' within the sections of the opportunity and risk report covering the different risk types.

In the other direction, the main risks and the risk profile, together with a number of other factors, influence the business models used in the DZ BANK Group. This occurs firstly in strategic planning, where the risk profile is taken into account by restricting – in conjunction with the imposition of risk limits – the risk assumed in connection with new business. Secondly, in all activities, the DZ BANK Group only takes on risk if it has an adequate understanding of the risk involved and the expertise necessary to measure and manage it.

The extent to which the liquidity risks and the risks backed by capital (**risk profile**) assumed by the DZ BANK Group are in accordance with its risk limits is expressed in the values for the group's **risk-related key performance indicators (KPIs)** shown in Fig. 6. The values for these KPIs are compared against the (internal) minimum targets specified by the Board of Managing Directors of DZ BANK with due regard to the business and risk strategies– also referred to below as **risk appetite** – and against the (external) minimum targets laid down by the supervisory authorities. The DZ BANK Group met the internal and external minimum targets at all times in the year under review. Further details on risk appetite can be found in section 3.4.

The interaction between the risk profile and risk appetite is explained in section 6 in connection with liquidity adequacy, and in section 7 in connection with capital adequacy.

2.2 Opportunity and risk management system

2.2.1 Fundamental features

DZ BANK and the DZ BANK Group define **opportunities** as unexpected positive variances from the forecast financial performance.

Risks result from adverse developments affecting financial position or financial performance, and essentially comprise the risk of an unexpected future liquidity shortfall or unexpected future losses. A distinction is made between liquidity and capital. Risks that materialize can affect both of these resources.

The **management of opportunities** at DZ BANK and in the DZ BANK Group is integrated into the annual strategic planning process. Strategic planning enables the group to identify and analyze market discontinuities based on different macroeconomic scenarios, trends, and changes in the markets, and forms the basis for evaluating opportunities. Attractive opportunities are taken into account in the business strategies.

FIG. 6 – RISK-RELATED KPIS

	Measured figure		Internal minimum target[1]		External minimum target	
	Dec. 31, 2018	Dec. 31, 2017	2018	2017	2018	2017
LIQUIDITY ADEQUACY						
DZ BANK Group						
Economic liquidity adequacy (€ billion)[2]	12.0	16.1	4.0	4.0	0.0	0.0
DZ BANK banking group						
Liquidity coverage ratio (%)[6]	141.4	161.7	110.0	90.0	100.0	80.0
CAPITAL ADEQUACY						
DZ BANK Group						
Economic capital adequacy (%)[3]	167.8	169.8	120.0	120.0	100.0	100.0
DZ BANK financial conglomerate						
Coverage ratio for the financial conglomerate (%)[4,5]	175.7	182.9	120.0		100.0	100.0
DZ BANK banking group						
Common equity Tier 1 capital ratio (%)[5,6,7]	13.7	13.7	11.0	11.0	8.8	7.9
Tier 1 capital ratio (%)[5,6,7]	14.3	14.3	12.5	12.5	10.3	9.4
Total capital ratio (%)[5,6,7]	16.8	17.2	14.5	14.5	12.3	11.4
Leverage ratio (%)[5]	4.3	4.4	3.5	3.5		

1 As specified by the Board of Managing Directors.
2 Economic liquidity adequacy is expressed through the minimum liquidity surplus KPI. The measured value relates to the stress scenario with the lowest minimum liquidity surplus. The internal minimum target relates to the observation threshold.
3 The internal minimum target is the amber threshold in the traffic light system for managing and monitoring economic capital adequacy. The value originally measured as at December 31, 2017 was 170.5 percent and has been adjusted due to the scheduled recalculation of the overall solvency requirement for the Insurance sector.
4 Figure measured as at December 31, 2018: Preliminary coverage ratio. Figure measured as at December 31, 2017: Final coverage ratio.
5 Measured values based on full application of the CRR.
6 The external minimum targets are the binding regulatory minimum capital requirements. Details on the minimum capital requirements can be found in section 7.3.3.
7 The figures as at December 31, 2017 differ from the corresponding figures disclosed in the opportunity and risk report for the first half of 2018 and in the opportunity and risk report for 2017 due to the transition to disclosure based on full application of the CRR and due to regulatory requirements.

Not available

Reports on future business development opportunities are based on the business strategies. As part of the general communication of the business strategies, employees are kept up to date about potential opportunities that have been identified.

DZ BANK and the DZ BANK Group have a comprehensive **risk management system** that meets their own business management needs and the statutory requirements. Furthermore, the management of opportunities and risks forms an integral part of the groupwide strategic planning process. The risk management system is based on the risk appetite statement – the fundamental document for determining risk appetite in the DZ BANK Group – and the specific details of this appetite embodied in **risk strategies** that are consistent with the business strategies and have been approved by the Board of Managing Directors. The **risk appetite statement** contains risk policy guidelines and risk strategy requirements applicable throughout the group. It also sets out quantitative guidelines in the form of minimum targets reflecting the risk appetite specified by the Board of Managing Directors.

Efficient management and control tools are used in all areas of risk. These tools are subject to continual further development and refinement. The methods used for measuring risk are integrated into the risk management system. Risk model calculations are used to manage the DZ BANK Group, DZ BANK, and the other management units.

DZ BANK and its subsidiaries have organizational arrangements, methods, and IT systems in place that enable them to identify material opportunities and risks at an early stage and initiate appropriate control measures, both at group level and at the level of the individual management units. This applies in particular to the **early detection and management of risks that could affect the group's survival as a going concern**.

The tools used for the purposes of risk management also enable the DZ BANK Group to respond appropriately to **significant market movements**. Possible changes in risk factors, such as a deterioration in credit ratings or the widening of credit spreads on securities, are reflected in adjusted risk parameters in the mark-to-model measurement of credit risk and market risk. Conservative crisis scenarios for short-term and medium-term liquidity are intended to ensure that liquidity risk management also takes adequate account of market crises. A risk limit system based on risk-bearing capacity, stress testing encompassing all material risk types, and a flexible internal reporting system ensure that management is in a position to initiate targeted corrective action if required.

The risk management system is more detailed than the system for the **management of opportunities** because risk management is subject to comprehensive statutory requirements and is also of critical importance to the continued existence of DZ BANK and the DZ BANK Group as going concerns. The management of opportunities and risks is an integral part of the strategic planning process.

2.2.2 KPIs

Risks affecting liquidity and capital resources are managed on the basis of groupwide liquidity risk management and groupwide risk capital management. The purpose of **liquidity risk management** is to ensure adequate levels of liquidity reserves are in place in respect of risks arising from future payment obligations (liquidity adequacy). The aim of **risk capital management** is to ensure the availability of capital resources that are commensurate with the risks assumed (capital adequacy).

The **minimum liquidity surplus**, which reflects economic liquidity adequacy, and **economic capital adequacy** are the key risk management figures used in the DZ BANK Group. Disclosures on the method used to calculate these key figures can be found in sections 6.2.4 and 7.2.1. Disclosures on the relationship between these figures and the balance sheet can be found in sections 6.2.6 and 7.2.1.

The minimum liquidity surplus and economic capital adequacy cannot be reconciled directly to individual line items in the consolidated financial statements because they are forward-looking considerations. Although these key figures are based on the consolidated financial statements, a number of other factors are used in their calculation. The use of these figures in the opportunity and risk report complies with the financial reporting standards to be applied in external risk reporting.

2.2.3 Management units

All DZ BANK Group entities are integrated into the groupwide opportunity and risk management system. DZ BANK and its main subsidiaries – also referred to as management units – form the core of the financial services group.

The insurance business operated at R+V differs in key respects from the other businesses operated in the DZ BANK Group. For example, actuarial risk is subject to factors that are different from those affecting risks typically assumed in banking business. Furthermore, policyholders have a share in any gains or losses from investments in connection with life insurance, as specified in statutory requirements, and this must be appropriately taken into account in the measurement of risk. Not least, the supervisory authorities also treat banking business and insurance business differently and this is reflected in differing regulatory regimes for banks and insurance companies.

Because of these circumstances, two sectors – Bank sector and Insurance sector – have been created within the DZ BANK Group for the purposes of risk management. The management units are assigned to these sectors as follows:

Bank sector:
- DZ BANK
- BSH
- DZ HYP
- DVB
- DZ PRIVATBANK
- TeamBank
- UMH
- VR LEASING

Insurance sector:
- R+V

DZ HYP has applied the **waiver** pursuant to section 2a (1), (2), and (5) of the German Banking Act (KWG) in conjunction with article 7 (1) CRR, under which – provided certain conditions are met – the regulatory supervision at individual bank level may be replaced by supervision of the entire banking group.

The management units represent the operating segments of the DZ BANK Group. They are deemed to be material in terms of their contribution to the DZ BANK Group's aggregate risk and are therefore directly incorporated into the group's risk management system. The other subsidiaries and investee entities are included in the system indirectly as part of equity investment risk.

The management units ensure that their respective subsidiaries and investees are also included in the DZ BANK Group's risk management system – indirectly via the majority-owned entities – and meet the minimum standards applicable throughout the group.

2.2.4 Material changes

Merger of DG HYP and WL BANK to become DZ HYP

The merger of the former DG HYP and the former WL BANK to become **DZ HYP** did not result in material changes to the opportunity and risk management system or to the DZ BANK Group's key risk indicators in the year under review.

EU General Data Protection Regulation

The entities in the DZ BANK Group initiated appropriate steps to implement the EU General Data Protection Regulation (GDPR), which came into force on May 25, 2018. These steps were completed in the reporting year. The updating of IT systems to meet further requirements is ongoing and depends on a number of factors, notably the upgrades planned by software companies.

IFRS 9

As a result of the changes to the external financial reporting of financial instruments that have been in force since January 1, 2018 under IFRS 9, internal economic credit risk management is indirectly connected to the procedures to be used for the recognition of loss allowances. In particular, the parameters used to calculate the expected loss have been adjusted in order to fully comply with the impairment rules of IFRS 9. The process is as follows:

– The multiple-year default probabilities calculated for economic management are based on long-term average migration behavior. They are modified for the purposes of external financial reporting, in particular so as to take account of the latest available macroeconomic forecasts.

– The recovery rates calculated in the context of internal management in order to estimate the expected loss on lending transactions in the event of default (loss given default) and the ratios for proceeds from the recovery of collateral are adjusted in order to meet the IFRS 9 requirements regarding the parameter-based calculation of loss allowances.

The consequence of this is that, from 2018, loss allowances will no longer be disclosed in the opportunity and risk report within the group management report of the DZ BANK Group, the management report of DZ BANK, or the interim group management report of the DZ BANK Group. The same applies to the lending volume that has to be disclosed in connection with loss allowances according to IFRS 9 and must be based on carrying amounts reported on the balance sheet. This information will now be reported in the annual and interim consolidated financial statements. However, the management-relevant lending volume will still be disclosed in the opportunity and risk report.

Reputational risk in the Insurance sector

Following the risk inventory carried out in 2018, reputational risk in the Insurance sector was identified as a material type of risk for the DZ BANK Group. Disclosures relating to reputational risk at R+V can be found in section 20.

2.3 Risk factors, risks, and opportunities

2.3.1 Risk factors

The DZ BANK Group and DZ BANK are exposed to **risk factors related to both the market and sector**. These risk factors may be reflected in liquidity adequacy and capital adequacy. For example, the **regulatory framework** for the banking industry remains characterized by ever tighter regulatory capital and liquidity standards and increasingly stringent process and reporting requirements. These developments particularly have an impact on business risk. There are also significant **macroeconomic risk factors** in the shape of economic divergences in the eurozone, the UK's exit from the EU planned for March 29, 2019, the ongoing phase of low interest rates, the persistently tough market conditions faced by the offshore finance business and by some of the shipping finance business, and the threat of a global trade war. Potentially, the macroeconomic risk factors could particularly have a negative impact on credit risk, equity investment risk, market risk, business risk, and reputational risk in the Bank sector and on market risk, counterparty default risk, and reputational risk in the Insurance sector.

The protracted period of low interest rates will reduce profits. These risk factors are described and analyzed in detail in section 5.1.

Moreover, the DZ BANK Group and DZ BANK are exposed to **business-specific risk factors of an overarching nature** that affect a number of risk types. These factors may include potential shortcomings in the risk management system, the possible downgrading of the credit rating for DZ BANK or its subsidiaries, or ineffective hedges. These risks are generally taken into account in risk management. Section 5.2 contains a detailed description and analysis of these risk factors.

Risk factors specific to each type of risk also determine the extent of risk exposure in the DZ BANK Group and at DZ BANK. Detailed disclosures in this regard are provided in sections 6.2.5 and 8 to 19, in each case under the header 'Specific risk factors'.

2.3.2 Risks and opportunities

The main **features of the directly managed risks** and their significance for the operating segments in the Bank and Insurance sectors are shown in Fig. 7 and Fig. 8.

To ensure that the presentation of the disclosures remains clear, the risk management system disclosures included in the opportunity and risk report are limited to the main material entities in the group (indicated in Fig. 7 by a dot on a dark gray background). This selection is based on a materiality assessment, which takes into account the contribution of each management unit to the DZ BANK Group's overall risk for each type of risk. However, the figures presented in the opportunity and risk report cover all the management units included in the internal reporting system (indicated additionally in Fig. 7 by a dot on a light gray background).

The subcategories shown under credit risk and market risk in Fig. 7 are those with material significance for the Bank sector. The risk management system also includes other subcategories of credit risk and market risk but these additional subcategories are not described in this opportunity and risk report because they are of minor significance in the overall risk management picture, although they are included in the figures disclosed in the report.

The **solvency** of the DZ BANK Group was never in jeopardy at any point during the reporting period. By holding ample liquidity reserves, the group ensures that it is able to protect its liquidity against any potential crisis-related threats. It also complied with regulatory requirements for liquidity adequacy at all times.

The DZ BANK Group remained within its economic **risk-bearing capacity** in 2018 and also complied with regulatory requirements for capital adequacy at all times. There are no indications that the **continued existence** of the DZ BANK Group or individual management units, including DZ BANK, as going concerns might be at risk.

The **opportunities** presented by the forecast developments are reasonable in relation to the risks that will be incurred.

3 Fundamental principles of managing opportunities and risks

3.1 Regulatory framework for risk management

The **conglomerate-wide risk management system** complies with the statutory requirements specified in section 25 (1) of the German Supervision of Financial Conglomerates Act (FKAG) in conjunction with section 25a KWG and the German Minimum Requirements for Risk Management for Banks and Financial Services Institutions (MaRisk BA). In respect of risk management for the relevant management units, the DZ BANK Group also observes the requirements specified in sections 26 and 27 of the German Act on the Supervision of Insurance Undertakings (VAG) and section 28 of the German Capital Investment Code (KAGB) in conjunction with the German Minimum Requirements for Risk Management for Investment Management Companies (KAMaRisk).

When DZ BANK designed the risk management system of the DZ BANK Group and DZ BANK, it followed the guidance provided by the EBA and the European Insurance and Occupational Pensions Authority (EIOPA) as well as the pronouncements of the Basel Committee on Banking Supervision (BCBS) and the FSB on risk management issues.

In the year under review, DZ BANK updated its **recovery plan** in accordance with the requirements specified by banking supervisors. The recovery plan is based on the requirements specified in the German Bank Recovery and Resolution Act (SAG) and in other legal sources, especially Commission Delegated Regulation (EU) No. 2016/1075 and the Minimum Requirements for the Design of Recovery Plans (MaSan). A fully updated recovery plan was prepared during the reporting year and submitted to the ECB.

FIG. 7 – RISKS AND OPERATING SEGMENTS IN THE BANK SECTOR[1]

Group	Risk type	Definition	Specific risk factors
	RISK NOT COVERED BY CAPITAL		
	Liquidity risk	Risk that cash and cash equivalents will not be available in sufficient amounts to ensure that payment obligations can be met (insolvency risk)	Mismatch in the timing and amount of cash inflows and outflows, caused by – Withdrawal of funding – Greater collateral requirements – Changes in the fair value of financial instruments – Exercise of drawing rights – Exercise of termination rights – Conclusion of new business – Repurchase of products – Intraday payments – Currency swap restrictions
	RISK COVERED BY CAPITAL		
Financial-sector risks	**Credit risk** – Traditional credit risk – Issuer risk – Replacement risk	Risk of losses arising from the default of counterparties (borrowers, issuers, other counterparties) and from the migration of the credit ratings of these counterparties	– Increase in the lending volume as a result of new business and increase in the fair value of existing business – Increase in the concentration of volume by counterparty, industry, country, or maturity – Deterioration in the lending portfolio's credit rating structure
Financial-sector risks	**Equity investment risk**	Risk of losses arising from negative changes in the fair value of that portion of the long-term equity investments portfolio for which the risks are not included in other types of risk	Increased requirement for the recognition of impairment losses on the carrying amounts of investments – as a result of impaired carrying amounts – as a result of a lack of information in the case of non-controlling interests
Financial-sector risks	**Market risk** – Interest-rate risk – Spread risk and migration risk – Equity risk – Fund price risk – Currency risk – Asset-management risk – Market liquidity risk	– Risk of losses on financial instruments or other assets arising from changes in market prices or in the parameters that influence prices (market risk in the narrow sense of the term) – Risk of losses arising from adverse changes in market liquidity (market liquidity risk)	– Widening of credit spreads on European government bonds – Shortages of market liquidity
Business-performance risk	**Technical risk of a home savings and loan company[2]** – New business risk – Collective risk	– Risk of a negative impact from possible variances compared with the planned new business volume (new business risk) – Risk of a negative impact that could arise from variances between the actual and forecast performance of the collective building society operations caused by significant long-term changes in customer behavior unrelated to changes in interest rates (collective risk)	– Decline in new business – Changed customer behavior (unrelated to changes in interest rates)
Business-performance risk	**Business risk**	Risk of losses arising from earnings volatility which, for a given business strategy, is caused by changes in external conditions or parameters	– Costs of regulation – Competition based on pricing and terms – Greater competition in capital markets business – Digitalization and new competitors in transaction banking
Business-performance risk	**Reputational risk[3]**	Risk of losses from events that damage confidence, mainly among customers (including the local cooperative banks), shareholders, employees, the labor market, the general public, and the supervisory authorities, in the entities in the Bank sector or in the products and services that they offer	– Decrease in new and existing business – Backing of stakeholders is no longer guaranteed
Business-performance risk	**Operational risk**	Risk of losses from human behavior, technological failure, weaknesses in process or project management, or external events	HR risk: – Strikes and other business interruption – Insufficient availability of employees IT risk: – Malfunctions or breakdowns in data processing systems Outsourcing risk: – Disruptions to outsourced processes and services Risks in connection with the (consolidated) financial reporting process: – Inaccurate external financial reporting Legal risk: – Changes in the legal framework – Changes in the official interpretation of relevant regulations – Government intervention – Court or arbitration proceedings – Changes in the business environment Tax risk: – Changes in the tax framework – Changes in the interpretation by tax authorities of the existing tax framework – Changes in the business environment Compliance risk: – Violations of legal provisions

1 Apart from migration risk on traditional loans, which are covered by the capital buffer.
2 Including business risk and reputational risk of BSH.
3 The Bank sector's reputational risk is contained in the risk capital requirement for business risk. BSH's reputational risk, which is covered mainly by the technical risk of a home savings and loan company, is not included here.

Risks		Operating segments (management units)							
Risk management KPIs disclosed		DZ BANK	BSH	DVB	DZ HYP	DZ PRIVATBAN K	TeamBank	UMH	VR LEASING
– Liquid securities – Unsecured short-term and medium-term funding – Minimum liquidity surplus – LCR	Section 6.2.6 Section 6.2.6 Section 6.2.7 Section 6.3.3	•	•	•	•	•	•		•
– Lending volume – Risk capital requirement	Sections 8.6, 8.7, and 8.8 Section 8.10	•	•	•	•	•	•		•
– Investment volume – Risk capital requirement	Section 9.5	•	•	•			•	•	•
– Risk capital requirement – Value-at-risk	Section 10.7.1 Section 10.7.2	•	•	•	•	•	•	•	•
Risk capital requirement	Section 11.5		•						
Risk capital requirement	Section 12.4	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•
– Loss events and losses – Risk capital requirement	Section 14.6 Section 14.7	•	•	•	•	•	•	•	•

Management unit disclosures in the opportunity and risk report:

•	Quantitative and qualitative disclosures	•	Quantitative disclosures		Not relevant

FIG. 8 – RISKS IN THE INSURANCE OPERATING SEGMENT AND SECTOR

	Risk type	Definition	Specific risk factors	Risk management KPIs disclosed	
	RISK COVERED BY CAPITAL PURSUANT TO SOLVENCY II				
Core financial sector risks	**Actuarial risk** – Life actuarial risk[1] – Health actuarial risk – Non-life actuarial risk	– Life actuarial risk: Risk arising from the assumption of life insurance obligations in relation to the risks covered and the processes used in the conduct of this business – Health actuarial risk: Risk arising from the assumption of health and casualty insurance obligations in relation to the risks covered and the processes used in the conduct of this business – Non-life actuarial risk: Risk arising from the assumption of non-life insurance obligations in relation to the risks covered and the processes used in the conduct of this business	– Life actuarial risk: In the case of products with long-term guarantees, the long duration of the contracts means that what happens over the term of the contracts may vary from the calculation assumptions made at the time the contracts were signed – Health actuarial risk: The level of claims resulting from policyholders' and service providers' behavior may cause a larger rise in claims expenses than the one in the calculation assumptions – Non-life actuarial risk: The actual impact of losses, particularly from catastrophe risk, may exceed the forecast impact	– Claims rate trend in non-life insurance – Overall solvency requirement	Section 16.6 Section 16.7
Core financial sector risks	**Market risk** – Interest-rate risk – Spread risk – Equity risk – Currency risk – Real-estate risk	Risk arising from fluctuation in the level or volatility of market prices of financial instruments that have an impact on the value of the assets and liabilities of the entity	– An increase in interest rates or widening of credit spreads on government bonds or other bonds could lead to a fall in fair values, resulting in a temporary or permanent adverse impact on operating profit – A possible worsening of the financial circumstances of issuers and/or debtors could result in partial or complete default on receivables or credit-risk-related impairment losses	– Lending volume – Overall solvency requirement	Sections 17.4 and 17.5 Section 17.5
Core financial sector risks	**Counterparty default risk**	Risk of possible losses due to unexpected default or deterioration in the credit standing of counterparties or debtors of insurance or reinsurance companies over the subsequent 12 months	Unexpected default or deterioration in the credit standing of mortgage loan borrowers, counterparties of derivatives, reinsurance counterparties or policyholders, or insurance brokers	– Lending volume – Overall solvency requirement	Sections 17.4 and 17.5 Section 18.4
Business-performance risk	**Operational risk**	Risk of loss arising from inadequate or failed internal processes, personnel, or systems, or from external events (including legal risk)	HR risk: – Insufficient availability of employees IT risk: – Malfunctions or breakdowns in data processing systems – Business interruptions Legal risk: – Changes in the legal framework – Changes in the official interpretation of relevant regulations – Government intervention – Court or arbitration proceedings – Changes in the business environment Tax risk: – Changes in the tax framework – Changes in the interpretation by tax authorities of the existing tax framework – Changes in the business environment	Overall solvency requirement	Section 19.4
Business-performance risk	**Reputational risk[2]**	Risk of losses that could arise from possible damage to the reputation of R+V or of the entire industry as a result of a negative perception among the general public	– Decrease in new and existing business – Backing of stakeholders is no longer guaranteed		
	RISK COVERED BY CAPITAL PURSUANT TO SOLVENCY I				
	Risks from entities in other financial sectors	The entities in other financial sectors mainly consist of pension funds and occupational pension schemes	Generally corresponding to the risk factors for risks backed by capital pursuant to Solvency II	Overall solvency requirement	Section 21

1 Including reputational risk.
2 The Insurance sector's reputational risk is included in the overall solvency requirement for life actuarial risk (lapse risk).

In accordance with article 7 (2) of Regulation (EU) No. 806/2014, the Single Resolution Board (SRB) is the European regulator responsible under the Single Resolution Mechanism (SRM) for the preparation of resolution plans and for all decisions in connection with the resolution of all institutions under the direct supervision of the ECB. A group resolution plan is drawn up for institutions that are subject to supervision at consolidated level. The SRB works closely with the national resolution authorities (in 2018 in Germany, this was the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) [German Federal Financial Supervisory Authority]). The **resolution plan** is aimed at ensuring the resolvability of the banking group. In accordance with section 42 (1) SAG, the resolution authority (BaFin) can demand that the institution provide it with comprehensive assistance in connection with drawing up and updating the resolution plan. For this reason, as in prior years, DZ BANK again dedicated a great deal of time and effort in 2018 to helping with the ongoing preparation of the resolution plan for the DZ BANK Group. It supplied the resolution authority with numerous analyses related to DZ BANK and completed standardized questionnaires.

3.2 Risk culture

The risk culture at DZ BANK is shaped by the high degree of responsibility assumed by the cooperative financial network for its members and for society. At DZ BANK, activities involving risk are based on the values of drive, integrity, and trust. The priority is on compliance with strategic and associated operating requirements when dealing with risk. The risk culture is reflected in the existing risk management processes and methods and in the conduct of employees.

The following principles apply in respect of employee conduct:

- Leadership culture: The management must set out clear expectations regarding the handling of risk and lead by example.
- Risk appetite: Employees must understand their roles and their part in the risk management system; they must assume responsibility for their decisions.
- Communications: Internal communications must be open and consensus-based. Alternative opinions must be respected and employees encouraged to analyze risk transparently.
- Employees and expertise: Employees must bear responsibility for conscious handling of risk. They must use the available expertise and undertake continuing professional development in a changing environment.
- Change management: Employees must learn from past experience and ensure the business model is sustainable by managing change proactively.

The key features of the risk culture are documented in a framework, which is available to all employees of DZ BANK.

3.3 Risk strategies

The exploitation of business opportunities and the systematic, controlled assumption of risk in relation to target returns form an integral part of corporate control in the DZ BANK Group and at DZ BANK. The activities resulting from the business model require the ability to identify, measure, assess, manage, monitor, and communicate opportunities and risks. The need to hold appropriate reserves of cash and to cover risks with adequate capital is also recognized as an essential prerequisite for the operation of the business and is of fundamental importance.

In all their activities, the DZ BANK Group and DZ BANK therefore observe a risk culture in which they only take on risk to the extent necessary to achieve their business objectives – taking account of the guiding principle of a 'network-oriented central institution and financial services group' – and to the extent that the management units have an adequate understanding of, and expertise in, measuring and managing the risk. At the same time, the entities in the DZ BANK Group consider all material risks from the perspectives of capital/income and liquidity and avoid assuming risk in an aggressive manner.

In order to implement this principle, the Board of Managing Directors of DZ BANK has drawn up risk strategies for each of the material risks using the business strategies as a basis. The risk strategies each encompass the main risk-bearing business activities, the objectives of risk management (including the requirements for accepting or preventing risk), and the action to be taken to attain the objectives. The planning horizon is one year.

The annual updating of the risk strategies is integrated with the strategic planning process and is carried out by the Group Risk Controlling, Credit, Credit Special, Group Finance, and Strategy & Group Development divisions in close consultation with other relevant divisions at DZ BANK and the subsidiaries concerned.

The risk strategies are described in the following sections covering the individual risk types.

3.4 Risk appetite

The entities in the DZ BANK Group define risk appetite as the nature and extent of the risks that will be accepted at group level or by the management units when implementing their business models. Risk appetite equates to the term 'risk tolerance' used by banking supervisors in a disclosure context.

The risk appetite statement formulates risk policy principles on risk tolerance in the DZ BANK Group. The principles are overarching statements that are consistent with the business model and the risk strategies. The qualitative principles are supplemented by quantitative key figures, for which minimum targets are set internally. These key figures constitute the DZ BANK Group's risk-oriented key performance indicators. The values for the KPIs and the internal minimum targets are shown in Fig. 6.

Disclosures relating to the business model and business strategies can be found in the (group) management report in section I.1 (Business model) and section I.2 (Strategic focus of the DZ BANK Group as a network-oriented central institution and financial services group).

3.5 Opportunity and risk-oriented corporate governance

3.5.1 Governance structure

The DZ BANK Group's **risk management system** builds on the risk strategies adopted by the Board of Managing Directors of DZ BANK. It is based on three lines of defense that are interlinked and well established in the monitoring and control environment. The DZ BANK Group and DZ BANK thereby have a governance structure that complies overall with MaRisk requirements and that sets out the operational framework for risk management. Fig. 9 shows the governance structure for risk management.

The **three-lines-of-defense model** clarifies the understanding of risk management within the DZ BANK Group and defines clearly formulated and distinct roles and responsibilities.

The interaction between the three functional areas, or lines of defense, provides the basis for effective groupwide risk management. The tasks of the individual lines of defense are as follows:

- **First line of defense**: Day-to-day assumption and management of risk; related reporting to the Board of Managing Directors
- **Second line of defense**: Establishment and enhancement of a framework for risk management; monitoring of compliance with the framework in the first pillar; related reporting to the Supervisory Board and Board of Managing Directors
- **Third line of defense**: Process-independent examination and assessment of risk management and control processes in the first and second pillars; reporting to the Board of Managing Directors, Supervisory Board, and Audit Committee; communication with external control functions.

The Supervisory Board monitors corporate management and evaluates the adequacy of the risk management system and internal control system on an ongoing basis.

Independent auditors and the banking and insurance supervisory authorities form the **external control environment**, whereby the supervisory authorities may specify the focus of the audit to the auditors and the auditors report to the supervisory authorities on the findings of their audits of financial statements and special audits.

The role of the opportunity and risk management **committees** in the corporate governance structure is explained in section I.3.2.3 (Corporate management committees), which can be found in the 'DZ BANK Group fundamentals' chapter of the (group) management report.

The **business opportunities** are discussed during the course of the strategic planning process at the level of the individual management units and within special closed sessions held by the Board of Managing Directors.

3.5.2 Risk management

Risk management refers to the operational implementation of the risk strategies in the risk-bearing business units based on standards applicable throughout the group.

The management units make conscious decisions on whether to assume or avoid risks. They must observe guidelines and risk limits specified by the head office.

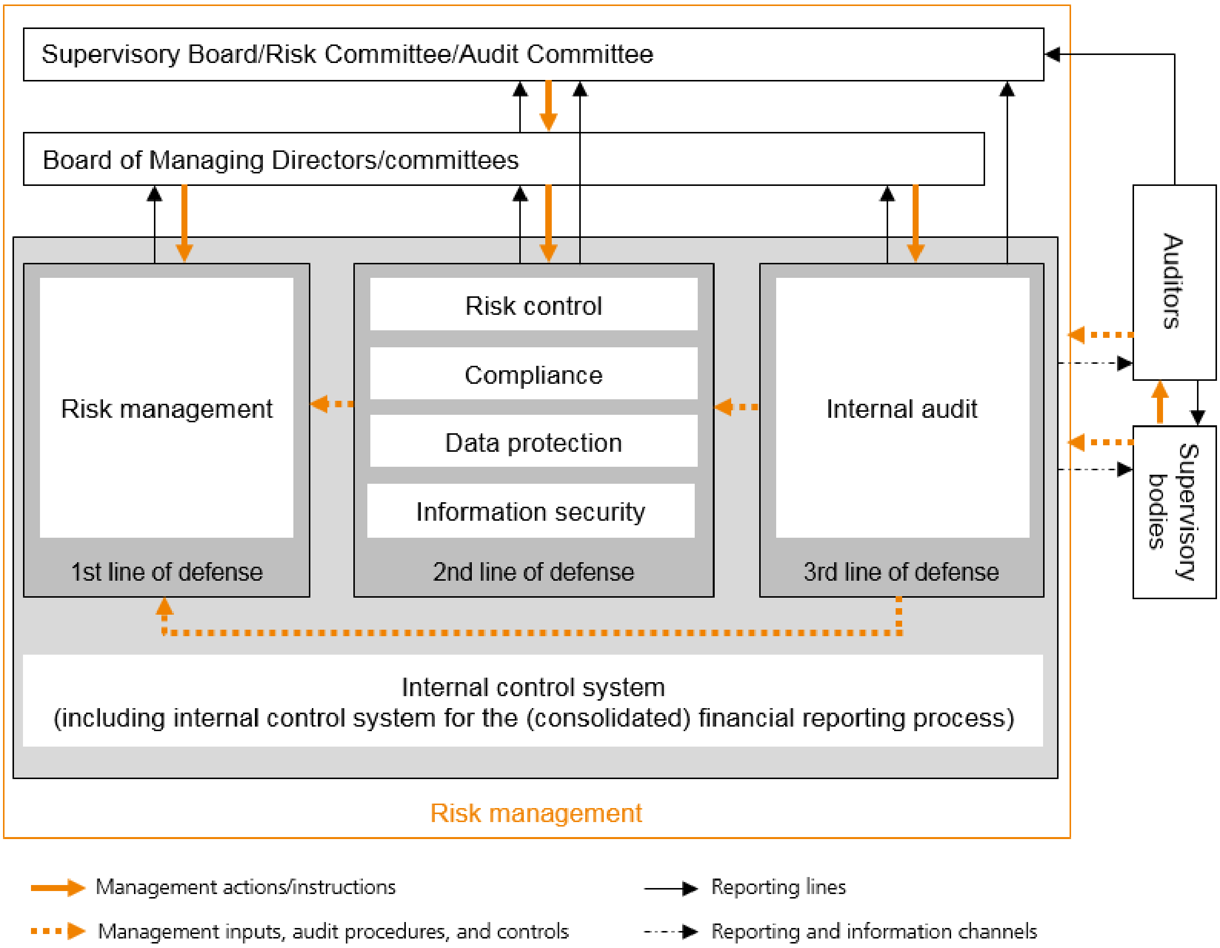
The divisions responsible for risk management are separated in terms of both organization and function from downstream divisions.

3.5.3 Risk control

Central Risk Controlling at DZ BANK is responsible for identifying, measuring, and assessing risk in the DZ BANK Group. This is accompanied by the planning of upper loss limits. It includes early detection, full recording of data (to the extent that this is possible), and internal monitoring for all material risks. Risk Controlling also reports risks to the Supervisory Board, the Board of Managing Directors, and the management units.

Risk Controlling at DZ BANK lays down the fundamental requirements for the risk measurement methods to be used throughout the group and coordinates implementation with the risk control units in the other management units. The aim of this structure is to ensure that the management of risk capital is consistent throughout the group.

FIG. 9 – GOVERNANCE STRUCTURE OF RISK MANAGEMENT IN THE DZ BANK GROUP (SCHEMATIC DIAGRAM)



In cooperation with the other management units, Risk Controlling at DZ BANK establishes a groupwide risk reporting system covering all material types of risk based on specified minimum standards using methods agreed between the management units.

Both at DZ BANK and in the other management units, Risk Controlling is responsible for the transparency of risks assumed and aims to ensure that all risk measurement methods used are up to date. The risk control units in the management units also monitor compliance with the entity-related limits that have been set based on the risk capital allocated by DZ BANK. Risk Controlling at DZ BANK is also responsible for risk reporting at group level. In addition to this, the management units are responsible for their own risk reporting.

3.5.4 Compliance, data protection, and information security

Compliance

The Board of Managing Directors of DZ BANK and the Boards of Managing Directors of the other management units are responsible for compliance with legal provisions and requirements and for the principles and measures implemented for this purpose. To fulfill these duties, the Boards of Managing Directors generally appoint an independent compliance function.

The main tasks of the compliance function are to identify, manage, and mitigate compliance risk in order to protect customers, DZ BANK, the other entities in the DZ BANK Group, and their employees against breaches of legal provisions and requirements. The compliance function is also responsible for monitoring compliance with the legal provisions and requirements. Other tasks of the compliance function are to keep senior management up to date with new regulatory requirements and to advise the departments on implementing new provisions and requirements.

In accordance with the requirements of the Supervisory Review and Evaluation Process for Basel Pillar 2 (SREP), there is a single compliance framework for the main entities in the DZ BANK Group that lays down rules on cooperation between the individual compliance functions and sets out their authority and responsibilities.

The DZ BANK Group's compliance framework comprises the compliance policy. The policy includes requirements for establishing and organizing the compliance functions and details of their duties. It is supplemented by compliance standards, which specify how to implement these requirements at an operational level.

If individual requirements in the compliance standards cannot be fulfilled by a management unit, for example because they conflict with local rules or special legal requirements, the affected management unit must provide an explanation.

The DZ BANK Group's compliance framework is reviewed annually to check that it is up to date.

Data protection

The entities in the DZ BANK Group have introduced suitable precautions to ensure that they comply with data protection provisions relating to customers, business partners, and employees. This has involved, in particular, creating the function of data protection officer and issuing standard data protection principles. In addition, employees regularly receive updates on the currently applicable data protection provisions.

In the management units, independent data protection officers report to the relevant Board of Managing Directors. At the invitation of DZ BANK's data protection officer, the data protection officers in the management units meet at least once a year to share information on current data protection issues and discuss potential joint data protection activities.

Information security

The DZ BANK Group understands information security to be the operational security of processes, IT applications, and IT infrastructures.

DZ BANK has implemented an information security management system (ISMS). The rules that it contains, along with the methodological framework that it provides, are based on the ISO/IEC 27001:2013 standard. The ISMS is designed to ensure the confidentiality, integrity, availability, and authenticity of data and the media on which data is stored (IT applications, IT systems, and infrastructure components). The governance model implemented defines the methods, processes, roles, responsibilities, authority, and reporting channels that are necessary to achieve the strategic objectives and carry out the tasks of information security at operational level. It also provides an operational framework for the consistent quantitative and qualitative evaluation and management of information security risk, which forms part of operational risk.

3.5.5 Control functions

Internal audit

The **internal audit** departments of DZ BANK and all the main subsidiaries are responsible for non-process-specific control and monitoring tasks. They carry out systematic, regular risk-based audits focusing on compliance with statutory and regulatory requirements. The internal audit departments also review and assess risk management and the internal control system to ensure that they are fully operational and effective, and that processing is properly carried out. In addition, they monitor the action taken in response to audit findings to ensure that identified problems have been rectified.

The internal audit departments at DZ BANK and the other management units report to the chief executive officer or other senior managers of the unit concerned. DZ BANK and all subsidiaries involved follow the special requirements for the structure of the internal audit function specified in MaRisk.

DZ BANK's internal audit department is responsible for internal audit tasks at group level. These tasks include, in particular, the coordination of audits involving multiple entities, the implementation of which lies within the remit of the individual internal audit departments in the management units concerned, and the evaluation of individual management unit audit reports of relevance to the group as a whole. Cooperation between internal audit departments in the DZ BANK Group is governed by a separate set of rules and arrangements.

Supervisory Board

The Board of Managing Directors provides the Supervisory Board of DZ BANK with regular and timely reports about the risk situation, the risk strategies, and the status and further development of the risk management system of the DZ BANK Group and DZ BANK. Furthermore, the Board of Managing Directors provides the Supervisory Board with regular reports about significant loan and investment exposures and the associated risks. The Supervisory Board discusses these issues with the Board of Managing Directors, advises it, and monitors its management activities. The Supervisory Board is always involved in decisions of fundamental importance.

The Supervisory Board has set up a Risk Committee that pays close attention to risk-related corporate management. The chairman of the Risk Committee provides the full Supervisory Board with regular and timely reports on the material findings of the committee's work. The Risk Committee held 5 meetings in the year under review.

The Board of Managing Directors provides the members of the Risk Committee and the other members of the Supervisory Board with a regular (quarterly) overall risk report for the DZ BANK Group. Each quarter, the Risk Committee also receives a report on recovery indicators ('risk dashboard') for the DZ BANK Group, a credit risk report for the DZ BANK Group, and a report on adverse stress tests in the DZ BANK Group. These reports are supplemented by an annual report on reverse stress tests in the DZ BANK Group. The chairman of the Risk Committee informs the full Supervisory Board about the main content of these reports no later than at its next meeting.

External control functions

During the audit of the annual financial statements, independent **auditors** carry out an assessment pursuant to section 29 (1) sentence 2 no. 2a KWG in conjunction with section 25a (1) sentence 3 KWG to establish whether the risk management processes, including the internal control functions, of the entities in the Bank sector are appropriate and effective. For the Insurance sector, verification of the Solvency II balance sheet is carried out pursuant to section 35 (2) VAG and an assessment of the suitability of the early-warning system for risk, including the internal monitoring system of R+V, is carried out during the audit of the annual financial statements pursuant to section 35 (3) VAG in conjunction with section 317 (4) HGB and section 91 (2) of the German Stock Corporation Act (AktG).

The **banking and insurance supervisory authorities** also conduct audits focusing on risk.

3.5.6 General internal control system

DZ BANK uses the internal control system to implement the relevant regulatory requirements specified in MaRisk. The objective of DZ BANK's internal control system and the corresponding control systems in other management units is to ensure the effectiveness and efficiency of the risk management activities within the DZ BANK Group and at DZ BANK by means of suitable basic principles, action plans, and procedures.

Organizational structures and controls built into work processes serve to ensure that the monitoring of risk management activity is integrated into processes. IT systems are systematically protected by authority-dependent management of authorizations and by technical security measures, the aim of which is to prevent unauthorized access both within and outside management units.

3.5.7 Internal control system for the (consolidated) financial reporting process

Objective and responsibilities

DZ BANK is subject to a requirement to prepare consolidated financial statements and a group management report as well as separate financial statements and a management report. The primary objective of external (consolidated) financial reporting in the DZ BANK Group and at DZ BANK is to provide decision-useful information for the users of the reports. This includes all activities to ensure that (consolidated) financial reporting is properly prepared and that material violations of accounting standards – which could result in the provision of inaccurate information to users or in mismanagement of the group – are avoided with a sufficient degree of certainty.

In order to limit operational risk in this area of activity, DZ BANK and its subsidiaries have set up internal control systems for the (consolidated) financial reporting process as an integral component of the control systems put in place for the general risk management process. In this context, the activities of employees, the implemented controls, the technologies used, and the design of work processes are structured to ensure that the objectives associated with (consolidated) financial reporting are achieved.

Overall responsibility for (consolidated) financial reporting lies in the first instance with Group Finance and Group Risk Controlling at DZ BANK, with all the consolidated entities in the DZ BANK Group responsible for preparing and monitoring the quantitative and qualitative information required for the consolidated financial statements.

Instructions and rules

The methods to be applied within the DZ BANK Group in the preparation of the consolidated financial statements are set out in writing in a group manual. The methods to be applied within DZ BANK in the preparation of the separate financial statements are documented in a written set of procedural rules. Both of these internal documents are updated on an ongoing basis. The basis for external risk reporting is the disclosure policy approved by the Board of Managing Directors. This policy sets out the principles and fundamental decisions for the methods, organizational structure, and IT systems to be used in risk disclosure in the DZ BANK Group and at DZ BANK. The instructions and rules are audited regularly to assess whether they remain appropriate and are amended in line with changes to internal and external requirements.

Resources and methods

The processes set up at DZ BANK and its subsidiaries (using suitable IT systems) permit efficient risk management in respect of financial reporting, based on the guidelines set by the Finance working group and taking into account the rules in the risk manual and the policy on risk disclosure.

The group's financial reporting process is decentralized, with the organizational units of the DZ BANK Group taking responsibility for preparing and checking the quantitative and qualitative information required for the consolidated financial statements. The Group Finance and Group Risk Controlling divisions at DZ BANK implement the relevant controls and checks in respect of data quality and compliance with the DZ BANK Group rules. Guidelines for the management units' risk control departments on data quality management and the internal control system set out the standards for ensuring the quality of data in the process for managing economic capital adequacy.

The organizational units post the accounting entries for individual transactions. The consolidation processes are carried out by DZ BANK's Group Finance division and by the accounting departments of each entity in the DZ BANK Group. The purpose of this structure is to ensure that all accounting entries and consolidation processes are properly documented and checked.

Financial reporting, including consolidated financial reporting, is chiefly the responsibility of employees of DZ BANK and the other organizational units in the DZ BANK Group. If required, external experts are brought in for certain accounting-related calculations as part of the financial reporting process, such as determining the defined benefit obligation and valuing collateral.

Consolidated financial reporting is based on mandatory workflow plans agreed between DZ BANK's Group Finance division and the individual accounting departments of the organizational units within the DZ BANK Group. These plans set out the procedures for collating and generating the quantitative and qualitative information required for the preparation of statutory company reports and which are necessary for the internal management of the operating units within the DZ BANK Group.

Generally accepted valuation methods are used in the preparation of the consolidated financial statements and group management report, and the separate financial statements and the management report. These methods are regularly reviewed to ensure they remain appropriate.

In order to ensure the efficiency of the (consolidated) financial reporting system, the processing of the underlying data is extensively automated using suitable IT systems. Comprehensive control mechanisms are in place with the aim of ensuring the quality of processing and are one of the elements used to limit operational risk. (Consolidated) accounting input and output data undergoes a number of automated and manual checks.

Suitable business continuity plans have also been put in place. These plans are intended to ensure the availability of HR and technical resources required for the (consolidated) accounting and financial reporting processes. The business continuity plans are continually fine-tuned and regularly checked using appropriate tests.

Information technology (IT)

The IT systems used for (consolidated) financial reporting have to satisfy the applicable security requirements in terms of confidentiality, integrity, availability, and authenticity. Automated controls are used to ensure that the processed (consolidated) accounting data is handled properly and securely in accordance with the relevant requirements. The controls in IT-supported (consolidated) accounting processes include, in particular, validation procedures to ensure consistent issue of authorizations, verification of master data modifications, logical access controls, and change management validation procedures in connection with developing, implementing, or modifying IT applications.

The IT infrastructure required for the use of electronic (consolidated) accounting systems is subject to the security controls implemented on the basis of the general security principles for data processing at DZ BANK and in the other entities of the DZ BANK Group.

The information technology used for consolidated accounting purposes is equipped with the functionality to enable it to handle the journal entries in individual organizational units as well as the consolidation transactions carried out by DZ BANK's group accounting department and by the accounting departments in the subgroups.

IT-supported (consolidated) accounting processes are audited as an integral part of the internal audit work carried out at DZ BANK and the other entities in the DZ BANK Group.

Ensuring and improving effectiveness

The processes used are regularly reviewed to ensure they remain appropriate and fit for purpose; they are adapted in line with new products, situations, or changes in statutory requirements. To guarantee and increase the quality of (consolidated) accounting at DZ BANK and the other entities in the DZ BANK Group, the employees charged with responsibility for financial reporting receive needs-based training in the legal requirements and the IT systems used. When statutory changes are implemented, external advisors and auditors are brought in at an early stage to provide quality assurance for financial reporting. At regular intervals, the internal audit department audits the internal control system related to the process for (consolidated) financial reporting.

3.6 Risk management tools

3.6.1 Accounting basis

Accounting basis for risk measurement

The transaction data that is used to prepare the DZ BANK consolidated financial statements forms the basis for the measurement of risk throughout the group. The same applies to the separate financial statements of DZ BANK. A wide range of other factors are also taken into account in the calculation of risk. These factors are explained in more detail during the course of this opportunity and risk report.

The line items in the consolidated financial statements significant to risk measurement are shown in Fig. 10. The information presented is also applicable to the measurement of risk for the separate financial statements of DZ BANK and the measurement of its risk, which does not include the technical risk of a home savings and loan company or the risks incurred by the Insurance sector.

The sections below provide a further explanation of the link between individual types of risk and the consolidated financial statements.

A further breakdown of the line items in the consolidated financial statements used to determine **credit risk** is given in section 8.6.1.

The investments used for the purposes of measuring **equity investment risk** are the following items reported in note 54 of the notes to the consolidated financial statements: shares and other shareholdings, investments in subsidiaries, investments in associates, and investments in joint ventures.

In the **Bank sector**, the measurement of financial instruments both for the purposes of determining market risk and for financial reporting purposes is based on financial market data provided centrally. Discrepancies in carrying amounts arise from the differing treatment of impairment amounts in the market risk calculation and in the accounting figures. Differences also arise because the market risk calculation measures bonds on the basis of credit spreads using available market data whereas the accounting treatment uses liquid bond prices. If no liquid prices are available for bonds, credit spreads are also used to measure bonds for accounting purposes.

FIG. 10 – RISK-BEARING EXPOSURES IN THE CONSOLIDATED FINANCIAL STATEMENTS[1]

		BANK SECTOR													INSURANCE SECTOR								
		Credit risk				Market risk						Portfolio assignment[2]			Actuarial risk			Market risk					
	Consolidated financial statements	Traditional credit risk	Issuer risk	Replacement risk	Equity investment risk	Interest-rate risk	Spread risk and migration risk	Equity risk	Currency risk	Fund price risk	Asset management risk	Trading portfolios	Non-trading portfolios	Technical risk of a home savings and loan company	Life	Health	Non-life	Interest-rate risk	Spread risk	Equity risk	Currency risk	Real-estate risk	Counterparty default risk
Risk-bearing assets	Loans and advances to banks	•		•		•	•		•			•	•	•									
	Loans and advances to customers	•				•	•		•			•	•	•									
	Derivatives used for hedging (positive fair values)			•		•	•	•	•	•		•	•										
	Financial assets held for trading		•	•		•	•	•	•	•		•											
	Investments		•	•	•	•	•	•	•	•			•										
	Investments held by insurance companies																	•	•	•	•	•	•
	Other assets														•	•	•						•
	Financial guarantee contracts and loan commitments	•				•			•				•										
Risk-bearing liabilities	Deposits from banks					•	•		•			•	•	•									
	Deposits from customers					•	•		•			•	•	•									
	Debt certificates issued including bonds					•	•	•	•	•		•	•										
	Derivatives used for hedging (negative fair values)			•		•	•	•	•	•	•	•	•										
	Financial liabilities held for trading			•		•	•	•	•	•		•											
	Insurance liabilities														•	•	•	•					

1 As liquidity risk is determined on the basis of all exposures in the consolidated financial statements, the details for liquidity risk are not provided here for reasons of clarity.
2 Disclosures for the banking business.

With the exception of these differences, the disclosures relating to **market risk** reflect the fair values of the assets and liabilities concerned.

The measurement for the **technical risk of a home savings and loan company** is based on the loans and advances to banks and customers (home savings loans) and also the home savings deposits (deposits from banks and customers) described in notes 62 and 63 of the notes to the consolidated financial statements.

Insurance liabilities, as reported in the financial statements, are a key value for determining all types of **actuarial risk**. The line item Investments held by insurance companies is also used to determine all types of **market risk** and **counterparty default risk**. The line item Other assets is included in the computation of actuarial risk and counterparty default risk.

Operational risk, **business risk**, and **reputational risk** are measured independently of the balance sheet items reported in the consolidated financial statements.

The calculation of **liquidity risk** is derived from future cash flows, which in general terms are determined from all of the balance sheet items in the consolidated financial statements.

Accounting basis for risk coverage

The link between available liquidity reserves, which are used to determine economic liquidity adequacy, and the consolidated balance sheet is described in section 6.2.6.

The link between available internal capital, which is used to determine economic capital adequacy, and the consolidated balance sheet is covered in section 7.2.1.

3.6.2 Measurement of risk and risk concentrations

Framework

Risk management in the DZ BANK Group is based on a **resource-oriented perspective of liquidity and capital**. It thus reflects the regulatory requirements defined by the SREP regarding the Internal Liquidity Adequacy Assessment Process (ILAAP) and the Internal Capital Adequacy Assessment Process (ICAAP). A distinction is also made between **economic and regulatory liquidity adequacy and between economic and regulatory capital adequacy**. The impact of each risk type on both economic capital and economic liquidity is taken into consideration. The effect and materiality of the various types of risk may vary, depending on the resource in question.

Economic liquidity adequacy

To ascertain the DZ BANK Group's economic liquidity adequacy, the minimum surplus cash that would be available if various scenarios were to materialize within the following year is determined as part of the **measurement of liquidity risk**.

Concentrations of liquidity risk can occur primarily due to the accumulation of outgoing payments at particular times of the day or on particular days (concentrations of maturities), the distribution of funding across particular currencies, markets, products, and liquidity providers (concentrations of funding sources), and the distribution of liquidity reserves across particular currencies, ratings, and issuers (concentrations of reserves). There is no capital requirement in connection with liquidity risk.

Liquidity risk in the **Insurance sector** is not material at DZ BANK Group level. Firstly, this is because liquidity is typically tied up in liabilities and assets over the long term in insurance business. Secondly, R+V is only exposed to a low level of liquidity risk because of its wide range of products and customers and the high quality and liquidity of its investments. Consequently, R+V is not taken into account in the liquidity risk management of the DZ BANK Group.

Economic capital adequacy

In the **Bank sector**, **economic capital** (risk capital requirement) is calculated for credit risk, equity investment risk, market risk, the technical risk of a home savings and loan company, operational risk, and business risk in order to ascertain economic capital adequacy. This risk capital requirement is generally calculated as value-at-risk with a holding period of 1 year and a unilateral confidence level of 99.90 percent.

The capital requirement for the individual risk types is aggregated into the total risk capital requirement for the Bank sector taking into account various diversification effects. The diversified risk capital requirement reflects the interdependency of individual types of risk. The risks relating to the Bank and Insurance sectors are aggregated, disregarding diversification effects between the sectors.

In the **Insurance sector**, risk measurement is based on the method specified in Solvency II with the aim of determining value-at-risk, which is the measure of **economic capital**. The value-at-risk for the change in economic own funds is determined with a confidence level of 99.50 percent over a period of one year.

The DZ BANK Group holds a **capital buffer** as a component of aggregate risk to allow for a possible lack of precision in the measurement of the risks backed by capital.

Based on an analysis of portfolios, the management of **risk concentrations** aims to identify potential downside risks that may arise from the accumulation of individual risks and, if necessary, to take corrective action. A distinction is made between risk concentrations that occur within a risk type (intra-risk concentrations) and concentrations that arise as a result of the interaction between different types of risk (inter-risk concentrations). Inter-risk concentrations are implicitly taken into account when determining correlation matrices for the purposes of inter-risk aggregation. They are mainly managed by using quantitative stress test approaches and qualitative analyses to provide a holistic view across all types of risk. The analysis of intra-risk concentrations is described for each type of risk in the sections below.

Risk covered by capital in the Bank sector

Expected and unexpected losses are calculated during credit-portfolio analysis for transactions containing credit risk that are conducted by entities in the Bank sector. The capital requirement for **credit risk** is determined as the unexpected loss equivalent to the difference between the value-at-risk and the expected loss. This calculation is based on one-year default probabilities derived from historical default data, taking into account additional transaction-specific features and reflecting the current rating of the borrower. The rating reflects an assessment of the borrower's future economic strength. Other factors taken into account in the calculation of exposures subject to default risk include measurable collateral, netting agreements, and expected recovery rates based on past experience.

In order to highlight concentrations of credit risk, the exposure at portfolio level is categorized by, among other things, industry sector, country group, term to maturity, size category, and rating. In addition, risks resulting from large exposures to individual single borrower units are closely monitored and managed. The key factor to be considered when determining concentrations of credit risk is the possibility of a simultaneous default by a number of borrowers who share the same characteristics. This is why determining the correlated exposure to loss as a part of the calculation of the risk capital required for credit risk is essential for managing risk concentrations.

Equity investment risk is determined using Monte Carlo simulation, in which portfolio concentrations in industries and individual exposures are examined by simulating industry-wide and investment-specific risk factors.

The capital requirement for **market risk** is calculated as the value-at-risk over a 1-year time horizon based on simulations. The results of stress tests are included in this calculation. In addition to calculating economic capital, and for purposes of operational management, a value-at-risk for a holding period of one trading day and a unilateral confidence level of 99.00 percent is calculated for market risk with the internal model.

Concentrations in the portfolio affected by market risk are identified by classifying the exposure in accordance with the risk factors associated with interest rates, spreads, migration, equities, currencies, and commodities. This incorporates the effects of correlation between these different risk factors, particularly in stress phases. Stress tests are carried out for market liquidity risk.

A special collective simulation, which includes the effects of a (negative) change in customer behavior and a drop in new business, is used to measure the **technical risk of a home savings and loan company**. Concentrations of this risk are most likely to arise from new business risks.

Business risk is determined using a risk model based on an earnings-at-risk approach. Risk concentrations may arise if business activities are focused on a small number of areas. Concentrations of business risk are limited by using qualitative criteria in strategic management. For the Bank sector, **strategic risk** is classified as non-material and examined in the context of business risk.

Reputational risk in the Bank sector is generally taken into account within business risk and is therefore implicitly included in the measurement of risk and assessment of capital adequacy. BSH's reputational risk, which is covered mainly by the technical risk of a home savings and loan company, is not included here.
The economic capital requirement for **operational risk** is determined using a portfolio model. In addition, risk concentrations and risk drivers are identified by using separate model-based analyses, taking into account event categories and areas of business specified by regulatory requirements. Such concentrations can occur, for example, if IT systems are supplied by just a few companies or if business processes are outsourced to a limited number of service providers.
From the perspective of economic capital adequacy, **funding risk** is not material.

Risks in the Insurance sector

To determine **actuarial risk**, negative scenarios are examined that have been taken from Solvency II and, in some cases, supplemented by the group's own parameterization or internal risk assessment.

For parts of the premium and reserve risk and non-life catastrophe risk, modeling and risk quantification is also carried out on the basis of historical claims data. This data is taken from the group's own portfolio and, in the case of natural catastrophes, from third-party providers.

The analysis, monitoring, and management of concentrations of actuarial risk are carried out as an integral part of the risk management process. Potential risk concentrations arise when different types of risk are combined with the concentration dimension in question (e.g. individual exposure, sector, country group). The same risk concentrations are analyzed at DZ BANK level.

When measuring **market risk**, shock scenarios are examined that have been taken from Solvency II and, in some cases, supplemented by the group's own parameterization.

The capital requirements for **counterparty default risk** are determined on the basis of the relevant exposure and the expected losses per counterparty.

The risk capital requirement for **operational risk** in the Insurance sector is calculated as a factor of the volume measures of premiums and provisions and, in the case of unit-linked business, as a factor of costs. In addition, operational risk is identified and quantified using a scenario-based risk self-assessment. The outcome of the factor approach is validated against the risk self-assessment using DZ BANK's portfolio model. R+V uses suitable quality standards and communications strategies to limit its reputational risk.

The risk capital requirement for **non-controlling interests in insurance companies** is included on a pro-rata basis in accordance with Solvency II. There were no non-controlling interests in insurance companies included in the risk measurement as at the reporting date because the previously included long-term equity investment in a Spanish insurance company was sold during 2018.

Risk for **entities in other financial sectors** is quantified in accordance with the requirements currently specified by the insurance regulator. This means applying the capital requirements in Solvency I, which are essentially calculated as a factor of the volume measures of benefit reserves and capital at risk.

Strategic risk is classified as non-material for the Insurance sector. R+V analyzes and forecasts national and global developments with an influence on business-related parameters on an ongoing basis. The findings are evaluated, for example in terms of customer needs, and are incorporated into the development of new insurance products.

3.6.3 Stress tests

In addition to the risk measurements, the effects of extreme but plausible events are also analyzed. Stress tests of this kind are used to establish whether the DZ BANK Group can sustain its business models, even under extreme economic conditions. Stress tests are carried out in respect of liquidity, economic risk-bearing capacity, and regulatory capital ratios.

3.6.4 Limitation principles

The DZ BANK Group has implemented a system of limits to ensure that it retains an adequate level of liquidity and maintains its risk-bearing capacity.

A system of limits and pre-set threshold values ensures that the **liquidity surplus** at the level of the DZ BANK Group does not become a shortfall and therefore that an adequate level of liquidity is guaranteed.

In the case of **risks backed by capital**, the limits take the form of risk limits or volume limits, depending on the type of business and type of risk. Whereas risk limits in all types of risk restrict exposure measured with an economic model, volume limits are applied additionally in transactions involving counterparties. Risk management is also supported by limits for relevant key performance indicators. Specific amendments to risk positions based on an adjustment of the volume and risk structure in the underlying transactions are intended to ensure that the measured exposure does not exceed the approved volume and risk limits. Risks that are incurred are compared with the limits allocated to them (upper loss limits) and monitored using a traffic-light system. The limit system is used to check whether economic capital adequacy is assured both at DZ BANK Group level and at the level of the management units.

3.6.5 Hedging objectives and hedging transactions

Hedging activities can be undertaken where appropriate in order to transfer liquidity risk, credit risk, market risk (Bank sector), market risk (Insurance sector), actuarial risk, and operational risk to the greatest possible extent to third parties outside the DZ BANK Group. All hedging activities are conducted within the strategic rules specified in writing and applicable throughout the group. Derivatives and other instruments are used to hedge credit risk and market risk.

If the hedging of risk in connection with financial instruments gives rise to **accounting mismatches** between the hedged item and the derivative hedging instrument used, the DZ BANK Group designates the hedging transaction as a hedge in accordance with the hedge accounting requirements of IFRS 9 in order to eliminate or reduce such mismatches. The DZ BANK Group continues to account for portfolio hedges in application of the rules under IAS 39. Hedge accounting in the DZ BANK Group encompasses the hedging of interest-rate risk and currency risk. It therefore affects market risk in both the Bank and Insurance sectors. Hedging information is disclosed in note 82 of the notes to the consolidated financial statements.

DZ BANK has exercised the option provided for in section 254 HGB and has generally not recognized hedges on the balance sheet, although economic hedges do exist. One hedge used to hedge a currency risk was discontinued in December 2018 without effect on profit or loss (see also note 38 of the notes to DZ BANK's separate financial statements).

3.6.6 Risk reporting and risk manual

The quarterly **overall risk report** includes the risks throughout the group identified by DZ BANK. Together with the **adverse stress tests report**, which is also compiled on a quarterly basis, the **report on recovery indicators** (risk dashboard), which is prepared on a monthly and quarterly basis, and the **reverse stress tests report**, which is produced annually, the overall risk report is the main channel by which risks incurred by the DZ BANK Group and the management units are communicated to the Supervisory Board, the Board of Managing Directors, and the Group Risk and Finance Committee. In addition, the Board of Managing Directors receives portfolio and exposure-related management information in the quarterly **credit risk report for the DZ BANK Group**. The Board of Managing Directors also receives monthly information on **liquidity risk** in the DZ BANK Group and in the management units.

DZ BANK and the main subsidiaries have further reporting systems for all relevant types of risk. Depending on the degree of materiality in the risk exposures concerned, the purpose of these systems is to ensure that decision-makers and supervisory bodies at all times receive transparent information on the risk profile of the management units for which they are responsible.

The **risk manual**, which is available to all employees of the management units, sets out the general parameters for identifying, measuring, assessing, managing, monitoring, and communicating risks. These general parameters are intended to ensure that risk management is properly carried out in the DZ BANK Group. The manual forms the basis for a shared understanding of the minimum standards for risk management throughout the group.

The main subsidiaries also have their own risk manuals covering special aspects of risk related specifically to these management units. R+V's risk manual was replaced by the Solvency II guidance with effect from January 1, 2016.

3.6.7 Risk inventory and appropriateness test

Every year, DZ BANK draws up a **risk inventory**, the objective of which is to identify the types of risk that are relevant for the DZ BANK Group and assess the materiality of these risk types. According to need, a risk inventory check may also be carried out at other times in order to identify any material changes in the risk profile during the course of the year. A materiality analysis is carried out for those types of risk that could arise in connection with the operating activities of the entities in the DZ BANK Group. The next step is to assess the extent to which there are concentrations of risk types classified as material in the Bank sector, the Insurance sector, and across sectors. The risk inventory check revealed that the main risks in 2018 were the same as in 2017. Likewise, there was no change in significant risk concentrations compared with the prior year.

DZ BANK also conducts an annual **appropriateness test** at DZ BANK Group level. The appropriateness test may also be carried out at other times in response to specific events. The objective is to review the latest groupwide specifications for the analysis of risk-bearing capacity. In addition, the appropriateness test includes a number of other tests to assess whether the risk measurement methods used for all types of risk classified as material are in fact fit for purpose. The appropriateness test found that risk measurement in the DZ BANK Group is generally appropriate, although potential improvements to some aspects of risk measurement were identified. Suitable measures are being defined and carried out in order to make these improvements.

The risk inventory check and appropriateness test are coordinated in terms of content and timing. All management units in the DZ BANK Group are included in both processes. The findings of the risk inventory and the appropriateness test are incorporated into the risk management process.

Risk inventory checks and appropriateness tests are generally conducted in a similar way for the main subsidiaries.

4 Opportunities

4.1 Management of opportunities

The management of opportunities in the DZ BANK Group and at DZ BANK is integrated into the annual **strategic planning process**. Strategic planning enables the group to identify and analyze market discontinuities based on different macroeconomic scenarios, trends, and changes in the markets, and forms the basis for evaluating opportunities. Identified opportunities are taken into account in the business strategies.

Details about the strategic planning process are presented in section I.2.4 of the (group) management report.

Reports on future business development opportunities are based on the outcome of the business strategies. As part of the general communication of the business strategies, employees are kept up to date about potential opportunities that have been identified.

4.2 Potential opportunities

4.2.1 Corporate strategy

DZ BANK's core functions as a central institution, corporate bank, and holding company mean that it focuses closely on the local cooperative banks, which are its customers and owners.

DZ BANK's **focus on the cooperative banks** is vital in view of the need to manage scarce resources and to meet new regulatory requirements. By focusing more closely on the Volksbanken Raiffeisenbanken cooperative financial network, DZ BANK's aim is to exploit the potential of its core activities more fully, particularly with regard to retail banking and SME business.

The principle of a '**network-oriented central institution/financial services group**' also means that business activities are concentrated on the business areas covered by the cooperative banks and on further enhancing the satisfaction levels of customers of the local cooperative banks. To this end, the DZ BANK Group, in its role as financial services provider, supplies decentralized products, platforms, and services.

In 2018, DZ BANK launched '**Verbund First 4.0**', a strategic program designed to ensure the organization's resilience for the future. The associated potential opportunities are presented in section I.1.1 of the (group) management report.

The core activities referred to above are supplemented by **complementary activities** using existing products, platforms, and services, for which DZ BANK acts as a corporate bank vis-à-vis third parties. These activities do not compete directly with those of the cooperative banks and they enable further economies of scale to be created for the entire cooperative financial network.

The **Outlook** in chapter V of the (group) management report describes expected developments in the market and business environment together with the business strategies and their implications for the financial performance forecast for 2019. The expected developments in the market and business environment are crucial factors in the **strategic positioning** and the resulting opportunities for increasing earnings and cutting costs.

4.2.2 Digitalization and new competitors

Digitalization refers to developments that tap into the prevalence of mobile devices and internet-based services and that are supported by the consumerization of technologies, i.e. the availability of high-tech end devices to consumers. These developments are encouraging the intermediation of **new competitors** at the interface between customers and banking services.

As a consequence of advancing digitalization across all areas of life, opportunities are opening up in relation to day-to-day banking business, especially payments processing. This trend is also being reinforced by changes in customer behavior. For example, increased use of mobile devices in payments processing means that particularly Germany – where paying in cash has generally continued to be more common than in other countries – is now seeing cash transactions being substituted with electronic payments processing. Payments through online cash register functions are climbing steadily, making it more important to have payment processes that are suitable for omnichannel use. Overall, the greater use of financial management applications means that business processes and payment processes are becoming increasingly merged.

The entities in the DZ BANK Group responded to these developments a while ago by increasing the innovative services that they offer. Examples include the launch of paydirekt, a cross-bank e-commerce payment system, the implementation of contactless credit card payments using a smartphone at point of sale, and the introduction of stronger and more user-friendly authentication procedures. The expansion of applications aimed at simplifying liquidity management and billing, together with greater use of a range of special benefits, taps into the increased integration of banking business into customer value chains.

Based on this range of initiatives, the DZ BANK Group is forging ahead with the replacement of cash and increasingly tying in additional payment-related services with accounts. DZ BANK is thus sharing in the accelerating trend toward electronic payment transactions with the objective of increasing its earnings. Furthermore, the Transaction Banking business line is working with universities and technology companies to test technologies and developments that may be of interest in the future – such as blockchains in payments processing and the securities business – and assess whether they are viable for use.

To underpin these measures, the DZ BANK Group has introduced an innovation management system, which includes a committee known as the Innovation Roundtable. The committee coordinates intragroup innovation activities, monitors market trends, and initiates targeted innovation projects.

4.2.3 Credit ratings

DZ BANK is awarded credit ratings by the three largest rating agencies, Standard & Poor's, Moody's, and Fitch. Individual subsidiaries of DZ BANK are also given their own ratings. In view of the high degree of cohesion within the cooperative financial network, Fitch and Standard & Poor's issue a network rating, for the purposes of which the cooperative financial institutions are analyzed on a consolidated basis. The criteria used by the agencies include factors such as strategy, risk assessment, transparency, and solidarity within the cooperative financial network in addition to business performance and collaboration.

The ratings are critical in determining the funding opportunities available on money and capital markets. They open up additional business options and potential opportunities for the entities in the DZ BANK Group.

During the year under review, the rating agencies reviewed the credit ratings issued for DZ BANK. In August 2018, Moody's lowered the long-term rating for unsecured, 'non-preferred' bonds by one notch to A1 following adoption of Directive 2014/59/EU (Bank Recovery and Resolution Directive, BRRD) into German law. The rating was changed because Moody's believes government support for unsecured, 'non-preferred' bonds is no longer possible under the amended legislation. At the same time, Moody's raised the issuer rating to the level of the long-term rating for unsecured, 'preferred' bonds (Aa1). Rating agencies Fitch and Standard & Poor's confirmed DZ BANK's existing credit ratings.

Fig. 11 provides an overview of DZ BANK's credit ratings.

As at December 31, 2018, the long-term credit rating for the cooperative financial network issued by Fitch and Standard & Poor's remained unchanged at AA-.

5 General risk factors

5.1 Market and sector risk factors

The DZ BANK Group and DZ BANK are subject to a range of risk factors that apply generally to the German and European banking industry as a whole. These market and sector risk factors have an impact on liquidity adequacy and capital adequacy. For the most part, the factors can be classified under business risk but are addressed separately here because of their key importance.

FIG. 11 – DZ BANK RATINGS

	Standard & Poor's		Moody's		Fitch	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Issuer rating	AA-	AA-	Aa1	Aa3	AA-	AA-
Covered bonds (DZ BANK BRIEFE)	AA+	AA+	Aaa	Aaa	–	–
Long-term rating for deposits	–	–	Aa1	Aa1	AA-	AA-
Long-term counterparty risk assessment/ derivative counterparty rating	–	–	Aa1	Aa1	AA-	AA-
Long-term rating for unsecured, 'preferred' bonds	AA-	AA-	Aa1	Aa1	AA-	AA-
Long-term rating for unsecured, 'non-preferred' bonds	A+	A+	A1	Aa3	AA-	AA-
Short-term rating	A-1+	A-1+	P-1	P-1	F1+	F1+

5.1.1 Commercial-law environment

The financial position and financial performance of the DZ BANK Group and DZ BANK are presented in accordance with IFRS. Changes to IFRSs and the associated interpretations may lead to a discrepancy between the results and financial position that are reported in the future and the current forecasts, or changes to (consolidated) financial reporting standards that are introduced retrospectively may lead to differences between results shown for prior-year periods and the results that were previously published. Such changes may also have an impact on regulatory capital and the financial key performance indicators.

The entities in the DZ BANK Group observe potential changes to (consolidated) financial reporting and examine their possible effects.

There is no longer a risk factor from the implementation of the provisions in IFRS 9 Financial Instruments because these provisions came into force at the beginning of the reporting year.

5.1.2 Regulatory environment

Basel IV

In December 2017, the BCBS published its finalization document containing a comprehensive range of new provisions covering certain aspects of the calculation of risk for regulatory purposes. An initial draft of a revised CRR (referred to as CRR II) at European level is already available. The new rules currently planned, most of which do not have to be applied until 2 years after the effective date, are expected to increase the risk-weighted assets for the DZ BANK banking group and DZ BANK.

Leverage ratio

The leverage ratio shows the ratio of a bank's Tier 1 capital to its total exposure. In contrast to credit-risk-related capital requirements for which the assumptions are derived from models, the individual line items in the calculation of the leverage ratio are not given their own risk weighting but are generally included in the total exposure without any weighting at all.

A mandatory minimum value for the leverage ratio has not been specified at European level for now. However, the current drafts for CRR II provide for the introduction of a minimum ratio of 3 percent, to apply 2 years after the effective date of CRR II (expected to be mid-2021). The calculation method used for total exposure will also be adjusted.

If the mandatory minimum leverage ratio turns out to be higher than currently expected, this could lead to an additional capital requirement for the DZ BANK banking group and/or DZ BANK based on the current volume of business. A negative impact on the business model and competitive position cannot be ruled out either.

Standardized definition of borrower default

The EBA has published details on harmonizing the definition of 'default of an obligor' pursuant to article 178 CRR. Implementation is mandatory for all institutions that have received approval to use the Standardized Approach to credit risk and the internal ratings-based (IRB) approaches. This requires extensive changes to data management, credit rating models, credit procedures, and internal control processes. The aim is to harmonize the definition of default for the purposes of the Standardized Approach and the IRB approaches and thus to standardize the capital requirements for credit risk.

DZ BANK has analyzed the planned new requirements and their impact. The application package on behalf of the entire DZ BANK banking group related to the new default definition was submitted to the supervisory authorities in December 2018 using the two-step approach. Changes to the default history and associated effects on the credit rating systems – including the possible need for recalibration – cannot be ruled out. This could lead to higher regulatory capital requirements and an increase in the credit value-at-risk.

Capital requirements for market risk

In January 2019, the BCBS published the finalized rules to fundamentally revise the capital requirements for market risk in the trading book. Significant new features include a revision of the boundary between the trading book and banking book, the introduction of a new Standardized Approach, a complete revision of the risk measurement approach for the internal market risk model, and more stringent criteria for the approval of internal market risk models, even down to the level of individual trading desks based on the regulator's definition. The new rules are also aimed at greater integration between the Standardized Approach and internal model-based approaches.

As the requirements cover internal model banks, DZ BANK must also introduce the new Standardized Approach and is thus obliged to calculate the capital requirement for market risk in the trading book in parallel to the internal model. Implementation of the new rules entails extensive and time-consuming changes to the calculation of the capital requirement for market risk in the trading book.

Banks are likely to have to apply the new Basel capital requirements from 2022 once they have been implemented in national law. Application is expected to mean that the DZ BANK banking group and DZ BANK will be subject to an additional capital requirement. Moreover, the possibility of a negative impact on cost structures or implications for organizational structures, the risk management system, the business model, or competitive position cannot be ruled out.

Risk data management

In January 2013, the BCBS published principles for effective risk data aggregation and risk reporting. The principles aim to increase aggregation capability for all risk data used for internal risk management and to improve the risk management and decision-making processes (including internal risk reporting) at banks. BaFin incorporated some of the BCBS regulations on risk data management into the national rules with the 5th amendment of MaRisk BA, which came into force on October 27, 2017.

Domestic systemically important banks must implement these requirements within 3 years of being classified as an other systemically important institution (O-SII). DZ BANK has been classified by BaFin as an O-SII and has therefore put in place an appropriate implementation plan. The DZ BANK Group plans to implement the risk data management rules by the end of 2019.

The implementation of the new requirements, but also the possibly inadequate implementation, could have a negative effect on the competitive position of the DZ BANK Group and/or DZ BANK, or lead to the need for additional capital.

Changeover in reference interest rates

Currently, the German banking industry is making progress on replacing the existing reference interest rates determined by banks with (virtually) risk-free benchmark interest rates in implementation of Regulation (EU) No. 2016/1011 (Benchmark Regulation). The new benchmark rates are determined by central banks or by administrators supervised by the competent supervisory authority. The benchmark rates are used to measure financial instruments in domestic and international interbank and customer transactions.

DZ BANK is currently determining the impact on the DZ BANK Group in a task force in which all the subsidiaries involved are represented. The task force is also designing implementation measures and addressing the potential risks. In these activities, DZ BANK is following recommendations made by international working groups.

The switch in the benchmark rates is subject to a lack of clarity in a number of areas, notably in relation to the transition path and the way in which these interest rates are to be established in the markets. If the changeover is not completed on time, there is a risk that the ability of the entities in the DZ BANK Group to handle the transactions concerned may be constrained. This could give rise to legal risk and reputational risk for the DZ BANK Group and DZ BANK.

Instant payments

The Euro Retail Payments Board, the ECB, and the European Commission have been pushing ahead with SEPA Instant Payments, a new system of payments processing, since late 2014. The scheme was launched on November 21, 2017. In the DZ BANK Group, instant payments particularly affect DZ BANK. DZ BANK has been participating in the scheme as a recipient bank since November 2018. The ongoing instant payments implementation project has scheduled the full participation of the bank in the instant payments system by the autumn of 2019. Delayed or inadequate implementation of the requirements could lead to DZ BANK suffering reputational damage.

Other regulatory risk factors

In addition to the regulatory requirements described above, the reform of the deposit guarantee schemes could give rise to risks for the DZ BANK Group and DZ BANK.

The EBA is also making decisions regarding the interpretation of the CRR, as a result of which there could be new capital requirement rules for certain products. This could lead to a significant fall in the capital ratios for the DZ BANK banking group, depending on how the supervisory authorities apply the interpretation decisions.

Regulatory risk factors that are no longer relevant

The minimum requirement for own funds and eligible liabilities (**MREL**) is no longer a regulatory risk factor because DZ BANK has been subject to a formal MREL since June of the reporting year, eliminating any uncertainty about the level of the MREL.
The **SREP** no longer has any significance as a risk factor either. This is because the annual SREP has now been carried out several times and is factored into risk management in the DZ BANK Group.

5.1.3 Macroeconomic risk factors

Economic divergence in the eurozone

The economies of Portugal, Spain, Italy, and Greece continue to be characterized by **government debt levels that are high** in relation to gross domestic product and are still proving difficult to bring down. Consequently, these countries remain vulnerable to fluctuation in investors' risk assessments.

However, **Portugal** and **Spain** have managed to sustain economic growth and make progress in terms of fiscal consolidation. Their respective ratios of government debt to gross domestic product (GDP) are also falling gradually, although they were still at a high level in 2018 at 122 percent for Portugal and 97 percent for Spain.

There is some cause for concern as regards **Italy**, which has been governed since June of the reporting year by a coalition between the populist right-wing Lega and the likewise populist, but left wing, Five Star Movement. Both of the governing parties are aiming to bring about a radical political and economic policy shift, which has put them on a collision course with the EU. Notably, the Italian government does not accept the EU's fiscal policy rules. Weak growth and the easing of budgetary discipline mean that it will not be possible to achieve a sustained reduction in Italian government debt, which is thus likely to persist at around 130 percent of GDP over the next few years. Overall, the lack of budgetary discipline and the addition of new debt will weaken public finances and lead to doubts about whether the country can support this level of national debt and refinance it. In view of the resulting loss of confidence among international politicians and among investors, this is likely to seriously prejudice the ability of the country to obtain funding in international capital markets. To add to Italy's problems, the ECB's bond-buying program, which had provided steady demand and stability in the market, was discontinued at the end of 2018. If Italy were no longer able to fund itself on affordable terms, this would, in all probability, become a significant test of the EU's resilience.

Greece is one of the most indebted countries in the world with government debt equating to 179 percent of GDP. Following its successful exit in August 2018 from the third economic adjustment program funded under the European Stability Mechanism, Greece must now once again obtain funding from the capital markets. For Greece to remain solvent and part of the eurozone, it will be crucial that the funding terms for the Greek economy prove to be sustainable. If Greece were to leave the eurozone, this could lead to turbulence in international financial markets, which would potentially have a negative impact on the countries of the eurozone.

In the last few years, the ECB's expansionary monetary policy and particularly its bond-buying program largely prevented the structural problems in some EMU member countries from being appropriately reflected in the capital markets. There is a risk that this situation could change following the **end of the asset purchase program**. Highly indebted countries could find it considerably more difficult to arrange funding through capital markets.

UK exit from the EU

The possible negative impact of **Brexit** , planned to take place on March 29, 2019, presents a risk to future economic growth, both at EU level and, in particular, for the UK. The Standard & Poor's and Moody's credit ratings for the UK are currently AA and Aa2 respectively; the outlook from Standard & Poor's is negative whereas from Moody's it is stable. The credit ratings from the two rating agencies therefore still correspond to the internal VR rating class 1A used by the DZ BANK Group.

In a coordinating working group with the involvement of the subsidiaries affected, DZ BANK is examining on an ongoing basis the implications that could arise for the DZ BANK Group from the UK's exit from the EU. Suitable countermeasures are being put in place to avoid or reduce legal or other uncertainties for the DZ BANK Group caused by the UK's departure from the EU. As a result, it is not anticipated that Brexit will have any material negative impact on the financial position or financial performance of the DZ BANK Group or DZ BANK.

Further details on the risks associated with Brexit are included in section 6.2.5 (Economic liquidity adequacy), section 8.7.2 (Credit portfolios with increased risk content), section 8.10 (Credit risk), section 10.6 (Market risk), section 16.7 (Actuarial risk), and section 17.4.2 (Lending volume).

Low interest rates

With interest rates at a historically low level, interest receivable on loans is low and the interest margin is relatively narrow, restricting the opportunities for earning income in **traditional banking business**. A risk scenario involving a very long period of low interest rates, possibly combined with a deflationary trend, would therefore also have a considerable negative impact on the performance of the DZ BANK Group and DZ BANK.

If there is a long period of low interest rates, the DZ BANK Group could face the risk of lower earnings, including lower earnings from BSH's extensive **building society operations**. When interest rates are very low, home savings loans lose their appeal for customers, while high-interest home savings deposits become more attractive. Consequently, interest income on home savings loans would fall and the interest cost for home savings deposits would rise. Furthermore, available liquidity could only be invested at low rates of return, an additional factor depressing earnings.

The entire **insurance industry** is affected by the low interest rates in the capital markets. These low interest rates are having a particular effect on the business model of personal insurance providers.

Given the long period of low interest rates, the challenge faced by the DZ BANK Group's extensive **asset management activities**, brought together under UMH, is to ensure that the guarantee commitments given to customers in respect of individual products can actually be met from the investment instruments in those products. This particularly affects the pension products and the guarantee fund product group. The pension products mainly consist of UniProfiRente, a retirement pension solution certified and subsidized by the German government. The amounts paid in during the contributory phase and the contributions received from the government are guaranteed to be available to the investor at the pension start date. The pension is then paid out under a payment plan with a subsequent life annuity. Guarantee funds are products for which UMH guarantees that a minimum percentage of capital is preserved, depending on the precise product specification. If UMH is unable to draw some of the management fees so that it can meet its guarantee commitments, this could have a substantial detrimental impact on the financial performance of the DZ BANK Group.

A rapid **rise in interest rates** on capital markets could also involve some risks. The pricing losses on fixed-income securities and necessary remeasurement of low-interest long-term lending business that could result from such an upturn could have an adverse impact on the earnings of the DZ BANK Group.

A long period of low interest rates also increases the risk of **incorrect valuations in financial and real estate markets**.

Shipping finance and offshore finance

In the shipping finance business, an oversupply of tonnage continues to have a detrimental impact on asset values and customer credit quality in some cases. To add to the problems, the low price of oil is adversely affecting global offshore oil production, leading to significantly lower demand for supply ships and other floating offshore equipment. This trend is accompanied by a rising number of laid-up offshore vessels.

Latent macroeconomic risk factors

As a result of the economic developments in Italy, the funding of **Italian banks** via the capital markets is becoming increasingly difficult. Moreover, the financial performance of these banks is hampered by continued high additions to loan provisions and by losses relating to the elimination of non-performing loans.

High levels of uncertainty are taking their toll on the current political and economic situation in **Turkey**. The increasing political risk factors, growing current account deficit, and high rate of inflation have progressively eaten away at the international capital markets' confidence in Turkey. Coupled with the interest-rate rises in the United States, these have put substantial downward pressure on the Turkish lira. Increases in the cost of funding denominated in foreign currencies have already been detrimental to the corporate and banking sectors' operating capabilities. Obtaining funding in the international capital markets has also become more expensive for Turkey. A sustained depreciation of the currency would have further significant negative macroeconomic effects. Investors' confidence in the Turkish economy could decrease further, and the country could see an outflow of short-term foreign capital. If the United States were to further ramp up its protectionist action and Europe and China were to respond with retaliatory measures, the consequence could be escalation of the **trade disputes** that would have a huge negative impact on global trade as a whole. This would adversely affect the global economy and hit the heavily export-dependent German economy particularly hard.

The forces striving for **Catalonia's independence** from Spain saw their influence fade during 2018, so the latent risk for Spain's overall economic performance has receded again.

Risk impact

Negative macroeconomic trends have an impact on various risks to which the DZ BANK Group and DZ BANK are exposed. In the **Bank sector**, this affects credit risk (deterioration in the credit quality of public-sector bonds, and in the case of shipping finance, asset values and customer creditworthiness, increase in the loss allowances for loans and advances), equity investment risk (increased requirement for the recognition of impairment losses on the carrying amounts of investments), market risk (increase in credit spreads, reduced market liquidity), business risk (contraction in the demand for financial services), and liquidity risk (a combination of the effects mentioned above).

In the **Insurance sector**, market risk is the type of risk most affected by macroeconomic trends. An increase in interest rates or a widening of credit spreads on government bonds or other market investments would lead to a drop in fair values. Fair value losses of this nature could have a temporary or permanent adverse impact on capital.

5.1.4 Climate risks

Risks arising from climate change could act as a trigger in the Bank sector, especially in respect of credit risk and operational risk. Operational risk may materialize, for example, if weather or environmental events cause buildings or IT systems to become unavailable. In the **Insurance sector**, non-life actuarial risk (premium and reserve risk, catastrophe risk) is the main type of risk that potentially could be significantly affected by climate risk. If climate risks are relevant on the basis of the business model, they are backed with capital within the risk types referred to above.

5.2 Overarching bank-related risk factors

The DZ BANK Group is exposed to the bank-specific risk factors described below. These factors have an impact on a number of risk types relevant to liquidity adequacy and capital adequacy and are taken into account in the management of risk.

5.2.1 Shortcomings in the risk management system

Regardless of the fundamental suitability of the **risk measurement procedures** used in the DZ BANK Group and at DZ BANK, it is conceivable that there may be circumstances in which risks cannot be identified in good time or in which a comprehensive, appropriate response to risks is not possible. Despite careful development of models and regular reviews, situations may arise in which actual losses or liquidity requirements are higher than those calculated in the risk models and stress scenarios.

For any given confidence level, the value-at-risk used for determining the **risk capital requirement** can be significantly influenced by extreme events for which the probability of occurrence is low. However, estimates for such rare events are generally subject to a great deal of uncertainty (referred to as model risk). Moreover, there are no comprehensive historical observations in most cases for extreme losses of this nature, which makes it more difficult to validate any models. Key input parameters for measurement models are also subject to uncertainty, because they are already estimates themselves.

The **measurement of liquidity risk** is subject to similar model risk related to the design of models and parameters and their validation. In addition, risks arising from scenarios that extend beyond the risk appetite for serious crises set by the Board of Managing Directors are accepted and therefore not taken into account for risk management purposes.

Despite continuously reviewing **crisis scenarios**, it is simply not possible to set down a definitive record of all economic conditions that could potentially have a negative impact. Therefore, an analysis of crisis scenarios in stress tests cannot guarantee that there will not be other crisis situations that could lead to greater losses or liquidity needs.

5.2.2 Rating downgrades

If DZ BANK's credit rating or the network rating for the cooperative financial network were to be downgraded, this would have a negative impact on the costs of raising equity and of borrowing. As a result, new liabilities could arise, or liabilities dependent on the maintenance of a specific credit rating could become due for immediate payment.

DZ BANK's credit rating is an important element in any comparison with competitor banks. It also has a significant impact on the ratings for DZ BANK's main subsidiaries. A downgrade or even just the possibility of a downgrade in the rating for DZ BANK or one of its subsidiaries could have a detrimental effect on the relationship with customers and on the sale of products and services.

Furthermore, if a rating downgrade were to occur, the DZ BANK Group or DZ BANK could face a situation in which it had to furnish additional collateral in connection with rating-linked collateral agreements for derivatives (regulated by the Credit Support Annex or Collateralization Annex to the German Master Agreement for Financial Futures) or in which it was no longer considered a suitable counterparty for derivative transactions at all. If the credit rating for DZ BANK or one of its subsidiaries were to fall out of the range covered by the top four rating categories (investment-grade ratings, disregarding rating subcategories), the operating business of DZ BANK or the subsidiary concerned, and therefore also the funding costs for all the other management units in the group, could suffer an adverse impact.

5.2.3 Hedge ineffectiveness

The DZ BANK Group and DZ BANK are exposed to the risk that a counterparty in a hedge could become insolvent and therefore no longer be in a position to meet its obligations. Consequently, the hedge could prove to be ineffective and the DZ BANK Group or DZ BANK would then be exposed to risks that it believed it had hedged.

Unforeseen market trends could undermine the effectiveness of action taken to hedge market risk. One example is the risk in connection with economic divergence in the eurozone. In this case, the DZ BANK Group or DZ BANK would only be able to minimize some of this risk with great difficulty; it may not be possible to hedge some of the risk at all. One of the particular factors to take into account is that some of the quantitative measurement methods and key risk indicators in the risk management system are based on estimates made by experts. Furthermore, the quantitative risk management system does not encompass all risks and makes assumptions about the market environment that are not based on specific events. It is conceivable there could be market scenarios in which the measurement methods and key risk indicators used do not forecast certain potential losses correctly, resulting in miscalculations.

In the management of market risk, use is made of credit derivatives, comprising credit-linked notes, credit default swaps, and total return swaps, in order to reduce the issuer risk attaching to bonds and derivatives. Macro hedges are used dynamically to mitigate spread risk and migration risk as well as risks attaching to underlying assets. In isolated cases, transactions are conducted on a back-to-back basis. If these instruments and measures turn out to be ineffective or only partially effective, it is possible that the DZ BANK Group and/or DZ BANK could incur losses against which the instruments or measures ought to have provided protection. Moreover, hedging activities give rise to costs and may result in additional risks. Gains and losses arising from ineffective risk hedges can increase the volatility of the earnings generated.

6 Liquidity adequacy

6.1 Principles

The management of liquidity adequacy is an integral component of business management in the DZ BANK Group and at DZ BANK. Liquidity adequacy is defined as the holding of sufficient liquidity reserves in relation to the risks arising from future payment obligations. It is considered from both an economic and a regulatory perspective. Whereas the economic perspective implements the requirements of MaRisk BA, the regulatory perspective applies the requirements from the CRR and the German national requirements for the implementation of Capital Requirements Directive IV (KWG and Solvency Regulation, SolvV).

Economic liquidity adequacy is managed on the basis of the internal liquidity risk model, which takes account of the impact on liquidity of other risks when measuring liquidity risk. The DZ BANK Group fulfills the regulatory liquidity adequacy requirements by managing economic liquidity adequacy.

6.2 Economic liquidity adequacy

Owing to the close ties between management of economic liquidity adequacy at DZ BANK and that of the DZ BANK Group, the information below on economic liquidity adequacy also applies to DZ BANK. Liquidity risk is a key aspect of economic liquidity adequacy.

6.2.1 Risk definition

Liquidity risk is the risk that cash and cash equivalents will not be available in sufficient amounts to ensure that payment obligations can be met. Liquidity risk thus has the character of insolvency risk.

The activities of DZ BANK and the management units BSH, DVB, DZ HYP, DZ PRIVATBANK, TeamBank, and VR LEASING are relevant to the level of liquidity risk in the DZ BANK Group. R+V is less important for liquidity risk in the DZ BANK Group for the reasons set out in section 3.6.2. Likewise, UMH is not significant for liquidity risk in the DZ BANK Group because the level of risk hedging substantially exceeds the existing risks. These two management units are therefore not included in groupwide liquidity management.

6.2.2 Risk strategy

A key component of the liquidity risk strategy is the process of specifying and monitoring the risk appetite for liquidity risk. The liquidity risk strategy establishes a binding basis for implementing these requirements at operational level.

The entities in the DZ BANK Group operate on the principle that the assumption of liquidity risk is only permitted if it is considered together with the associated opportunities and complies with the **risk appetite** specified by the Board of Managing Directors. Solvency must be ensured, even in times of serious crisis. Risk appetite is expressed in the form of crisis scenarios, and stress tests must demonstrate that there is adequate cover for these scenarios. The crisis scenarios also take into account the specific MaRisk BA requirements for the structure of stress scenarios at capital-market-oriented banks.

However, further **extreme scenarios** are not covered by the risk appetite. The risks arising in this regard are accepted and therefore not taken into account in the management of risk. Examples of such scenarios are a run on the bank, i.e. an extensive withdrawal of customer deposits as a result of damage to the reputation of the banking system, or a situation in which all non-collateralized funding sources on money markets completely dry up over the long term, also encompassing transactions with those corporate customers, institutional customers, and customer banks that have close ties to the entities in the DZ BANK Group. On the other hand, the risk of a short-term and complete loss, or the risk of a medium-term and substantial loss, of unsecured funding from institutional investors is not accepted and this risk is the subject of relevant stress scenarios.

Liquidity reserves in the form of liquid securities are held by the entities so that they can remain solvent, even in the event of a crisis. Potential sources of funding in the secured and unsecured money markets are safeguarded by maintaining a broadly diversified national and international customer base. The local cooperative banks also provide a significant and stable source of funding.

The liquidity risk strategy is consistently aligned with the overall **business strategies** and to this end is reviewed at least once a year and adjusted as necessary.

6.2.3 Organization, responsibility, and risk reporting

Organization and responsibility

The strategic guidelines for the management of liquidity risk by the entities in the DZ BANK Group are established by the **Group Risk and Finance Committee**. At the level of DZ BANK, this is the responsibility of the Treasury and Capital Committee.

Liquidity risk control in the DZ BANK Group is coordinated by the Group Risk Management working group and carried out in Risk Controlling at DZ BANK independently of the units that are responsible for liquidity risk management. The risk data calculated by the subsidiaries on the basis of intra-group guidelines is aggregated to provide a group perspective.

Risk reporting

Liquidity up to 1 year and structural liquidity of 1 year or more are reported on a daily basis to the **members of the Board of Managing Directors** of DZ BANK responsible for Group Treasury and Group Risk Controlling. The **Board of Managing Directors** receives a monthly report on liquidity risk.

The DZ BANK **Group Treasury** division and the units in the subsidiaries responsible for the management of liquidity risk also receive detailed daily information showing the contribution from each individual position to the aggregate position.

The DZ BANK **Group Treasury** division also has read-only access to the IT system used for measuring liquidity risk on a day-to-day basis and has set up its own analysis functionality within the system.
The **Group Risk and Finance Committee** receives a quarterly report on the liquidity risk of the DZ BANK Group and the individual management units.

The **entities in the DZ BANK Group** have their own corresponding reporting procedures that help to manage and monitor liquidity risk at individual entity level.

Group Treasury is informed on a daily basis of the largest providers of liquidity to DZ BANK in the unsecured money markets. This is reported to the **Treasury and Capital Committee** and the **Board of Managing Directors** on a monthly basis. The reports make a distinction between customers and banks and relate to DZ BANK in Frankfurt and to each foreign branch. These reports ensure that any possible concentration risk as regards sources of liquidity can be clearly identified at an early stage.

6.2.4 Risk management

Measurement of liquidity risk

DZ BANK uses an **internal risk model** to determine liquidity risk over a time horizon of 1 year. The same model is used to determine liquidity risk at the level of the DZ BANK Group. All entities in the DZ BANK Group with a significant impact on liquidity risk are integrated into the model, which is used to simulate one risk scenario and four stress scenarios a day.

A **minimum liquidity surplus** figure is calculated for each scenario. This figure quantifies the minimum surplus cash that would be available if the scenario were to materialize suddenly within the next 12 months. To carry out this calculation, cumulative cash flow (forward cash exposure) is compared against available liquidity reserves (counterbalancing capacity) on a day-by-day basis. The minimum liquidity surplus expresses economic liquidity adequacy. **Forward cash exposure** includes both expected and unexpected payments.

The **counterbalancing capacity** includes balances on nostro accounts, liquid securities, and unsecured funding capacity with customers, banks, and institutional investors. By including the counterbalancing capacity, the calculation of the minimum liquidity surplus already takes into account the effect on liquidity of the measures that could be implemented to generate liquidity in each scenario. These measures include collateralized funding of securities in the repo market.

Stress tests are conducted for the forward cash exposure and for the counterbalancing capacity using the following four scenarios with defined limits: ‘downgrading’, ‘corporate crisis’, ‘market crisis’, and ‘combination crisis’. The stress scenarios look at sources of crises in both the market and the institution itself. A combination of market-specific and institution-specific sources is also taken into consideration. In crisis scenarios with institution-specific causes, such as a deterioration in the institution’s reputation, it is assumed for example that it will be very difficult to obtain unsecured funding from customers, banks, and institutional investors in the 1-year forecast period. The simulated event in each stress scenario represents a serious deterioration in conditions.

The stress scenario with the lowest minimum liquidity surplus is deemed to be the squeeze scenario. Economic liquidity adequacy is determined as the amount of the minimum liquidity surplus in the squeeze scenario.

In addition to the existing stress scenarios with defined limits, **foreign currency stress tests** simulate what would happen if the currency swap market also defaulted. The currencies in the major locations are examined (US dollar, pound sterling, Swiss franc, Hong Kong dollar, Singapore dollar). The currency limits relate only to the critical first month.

Further stress scenarios in addition to the scenarios with defined limits are analyzed, and a **reverse stress test** is carried out and reported on a monthly basis. The reverse stress test shows which stress events (changes in risk factors) could still occur without liquidity falling below the limit in a subsequent liquidity risk measurement and triggering the need for a business model adjustment.

The internal liquidity risk model is constantly revised using an **appropriateness test** and adjusted in line with changes in the market, products, and processes. The appropriateness test is conducted for each entity in the DZ BANK Group and aggregated at group level.

Management of limits for liquidity risk

Liquidity risk is monitored and managed with the aim of ensuring economic liquidity adequacy at all times. This is based on the minimum liquidity surplus calculated for the four stress scenarios with defined limits. The Board of Managing Directors of DZ BANK has set, at the level of the **DZ BANK Group**, a **limit** (€1.0 billion) for liquidity risk and an **observation threshold** (€4.0 billion) that is higher than the limit. The observation threshold equates to the minimum target for economic liquidity adequacy specified in the risk appetite statement. The observation threshold and limit were unchanged compared with December 31, 2017. The Board of Managing Directors of DZ BANK has also specified a limit for **each management unit**. The observation threshold and the limits are monitored by the liquidity risk control function at DZ BANK both at group level and also for the management units.

The limit system ensures that the DZ BANK Group remains solvent even in serious stress scenarios. **Emergency liquidity plans** are in place so that the group is able to respond to crisis events rapidly and in a coordinated manner. The emergency plans are revised annually.

Liquidity risk mitigation

Within liquidity management activities, measures to reduce liquidity risk are initiated by the treasuries of the management units. Active liquidity risk management is made possible by holding a large number of instruments in the form of cash and liquid securities, and by managing the maturity profile of money market and capital market transactions.

Liquidity transfer pricing system

The DZ BANK Group aims to use liquidity – which is both a resource and a success factor – in line with opportunities and risks. Liquidity costs, benefits, and risks are allocated among the entities in the DZ BANK Group based on the liquidity transfer pricing system using internal prices charged by the units generating liquidity and paid by those consuming liquidity. Care is taken to ensure that the transfer prices are consistent with risk measurement and risk management.

Transfer prices are set at DZ BANK for the liquidity costs of all the main products. The transfer pricing system takes into account the maturity period and market liquidity of the products and has a significant impact on risk/return management.

6.2.5 Specific risk factors

Liquidity risk arises from a mismatch in the timing and amount of cash inflows and outflows. The extent of these mismatches is to a large degree influenced by the following risk factors:

- Funding is withdrawn but cash nevertheless still flows out when legally due.
- Contracts result in greater collateral requirements that involve cash outflows.
- Changes in the fair value of financial instruments mean that less liquidity can be generated.
- Cash is paid out earlier than expected because drawing rights are exercised.
- Cash outflows are earlier than expected or cash inflows later than expected because termination rights are exercised.
- New business is entered into to safeguard the reputation of the DZ BANK Group, resulting in cash outflows.
- Products are repurchased to safeguard the reputation of the DZ BANK Group, resulting in cash outflows.
- The liquidity requirement to ensure intraday payment obligations can be satisfied is greater than expected.
- There has been a negative impact on opportunities for generating currency-related liquidity through currency swaps.

The UK's expected exit from the EU does not affect the solvency of the DZ BANK Group or DZ BANK because the scope of the stress scenarios already covered exceeds the anticipated impact of **Brexit** on the risk factors relevant to liquidity risk.

6.2.6 Quantitative variables

The available liquid securities and the unsecured short-term and medium-term funding are the main factors determining the minimum liquidity surplus. These factors are presented below.

Liquid securities

Liquid securities form part of the available liquidity reserves, which are referred to as **counterbalancing capacity**. Liquid securities are largely held in the portfolios of the treasury units at the entities in the DZ BANK Group or in the portfolios held by DZ BANK's Capital Markets Trading division. Only bearer bonds are eligible as liquid securities. Liquid securities comprise highly liquid securities that are suitable for collateralizing funding in private markets, securities eligible as collateral for central bank loans, and other securities that can be liquidated in the 1-year forecast period that is relevant for liquidity risk.

Securities are only eligible provided they are not pledged as collateral, e.g. for secured funding. Securities that have been borrowed or taken as collateral for derivatives business or in connection with secured funding only become eligible when they are freely transferable. Eligibility is recognized on a daily basis and also takes into account factors such as restrictions on the period in which the securities are freely available.

Fig. 12 shows the liquidity value of the liquid securities that would result from secured funding or if the securities were sold.

As at December 31, 2018, the total liquidity value at the level of the **DZ BANK Group** was €41.8 billion (December 31, 2017: €45.9 billion). The total liquidity value attributable to **DZ BANK** as at December 31, 2018 was €30.2 billion (December 31, 2017: €33.2 billion). The year-on-year decline in the volume of liquid securities as at December 31, 2018 was attributable to the sale of securities, mainly at DZ BANK.

Consequently, liquid securities represent the largest proportion of the counterbalancing capacity for both the DZ BANK Group and DZ BANK, and make a major contribution to ensuring that they remain solvent in the stress scenarios with defined limits at all times during the relevant forecast period. In the first month, which is a particularly critical period in a crisis, liquid securities are almost exclusively responsible for maintaining solvency in the stress scenarios with defined limits.

FIG. 12 – LIQUID SECURITIES

€ billion	Dec. 31, 2018	Dec. 31, 2017
Liquid securities eligible for GC Pooling (ECB Basket)[1]	23.4	28.1
Securities in own portfolio	22.7	28.1
Securities received as collateral	9.7	10.6
Securities provided as collateral	-9.0	-10.6
Liquid securities eligible as collateral for central bank loans	12.3	12.2
Securities in own portfolio	13.4	12.1
Securities received as collateral	4.9	2.6
Securities provided as collateral	-6.0	-2.5
Other liquid securities	6.0	5.6
Securities in own portfolio	5.4	5.5
Securities received as collateral	0.9	0.1
Securities provided as collateral	-0.2	-
Total	41.8	45.9
Securities in own portfolio	41.5	45.7
Securities received as collateral	15.5	13.3
Securities provided as collateral	-15.3	-13.2

1 GC = general collateral, ECB Basket = eligible collateral for ECB funding.

Funding and liquidity maturities

The short-term and medium-term funding structure is a determining factor in the level of liquidity risk in the DZ BANK Group and at DZ BANK. The main sources of funding on the unsecured money markets are shown in Fig. 13. The change in the composition of the main sources of funding compared with December 31, 2017 was attributable to a change in the behavior of customers and investors resulting from money market policy implemented by the ECB.

Further details on funding are provided in the business report (section II.5 (Financial position) of the (group) management report).

The maturity analysis of contractual cash inflows and cash outflows is set out in note 84 of the notes to the consolidated financial statements. The cash flows in these disclosures are not the same as the expected and unexpected cash flows used for internal management purposes in the DZ BANK Group.

6.2.7 Risk position

Economic liquidity adequacy is assured if none of the four stress scenarios with defined limits exhibit a negative value for the internal key risk indicator 'minimum liquidity surplus'. Fig. 14 shows the results of measuring liquidity risk in the four stress scenarios with defined limits. The results are based on a daily calculation and comparison of forward cash exposure and counterbalancing capacity. The values reported are the values that occur on the day on which the liquidity surplus calculated over the forecast period of 1 year is at its lowest point.

FIG. 13 – UNSECURED SHORT-TERM AND MEDIUM-TERM FUNDING

	DZ BANK banking group		DZ BANK	
%	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Local cooperative banks	55	54	59	58
Other banks, central banks	14	12	14	11
Corporate customers, institutional customers	15	13	14	13
Commercial paper (institutional investors)	16	21	13	18

FIG. 14 – LIQUIDITY UP TO 1 YEAR IN THE STRESS SCENARIOS WITH DEFINED LIMITS: MINIMUM LIQUIDITY SURPLUSES

	Forward cash exposure		Counterbalancing capacity		Minimum liquidity surplus	
€ billion	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Downgrading	-39.3	-44.7	61.8	77.2	22.5	32.5
Corporate crisis	-37.1	-47.2	50.1	63.3	13.0	16.1
Market crisis	-42.5	-51.5	58.2	76.3	15.7	24.8
Combination crisis	-42.1	-23.4	54.1	42.6	12.0	19.2

The liquidity risk value measured for the **DZ BANK Group** as at December 31, 2018 for the stress scenario with defined limits with the lowest minimum liquidity surplus (squeeze scenario) was €12.0 billion (December 31, 2017: €16.1 billion). The decline in the minimum liquidity surplus as at December 31, 2018 compared with the figure as at the prior-year reporting date was largely due to a modification of the stress scenarios. During the year under review, liquidity at the level of the DZ BANK Group did not, in any of the stress scenarios with defined limits, fall below the observation threshold of €4.0 billion set by the Board of Managing Directors as the internal minimum target for 2018. Furthermore, it did not fall below the limit of €1.0 billion or the external minimum target of €0.0 billion at any time in the reporting period. The observation threshold and limit were unchanged compared with December 31, 2017.

The corresponding liquidity risk value attributable to **DZ BANK** as at December 31, 2018 was €2.1 billion (December 31, 2017: €5.7 billion). The value is derived from the stress scenario with defined limits that has the lowest minimum liquidity surplus (squeeze scenario). The minimum liquidity surplus measured as at the reporting date decreased year on year in this case too. The decline was mainly attributable to the extension in 2018 of the forecast period used for the limitation from 1 month to 1 year. The minimum liquidity surplus did not fall below the limit at any time in the year under review.

The results demonstrate that economic liquidity adequacy was maintained at all times in the reporting year. The minimum liquidity surplus as at December 31, 2018 was positive in the stress scenarios with defined limits that were determined on the basis of risk appetite. This is due to the fact that the counterbalancing capacity was above the cumulative cash outflows on each day of the defined forecast period for each scenario, which indicates that the cash outflows assumed to take place in a crisis could be comfortably covered.

6.2.8 Possible impact from crystallized liquidity risk

One of the main operating activities of the management units is to make long-term liquidity available to their customers for different maturity periods and in different currencies, for example in the form of loans. The units generally organize their funding to match these transactions that tie up liquidity. Any funding needs that are not covered by the local cooperative banks are met by obtaining additional funding in the money and capital markets, with the deposit base from money market funding reducing the need for long-term funding. When funding matures, it is therefore possible that the replacement funding required to fund transactions with longer maturities has to be obtained at **unfavorable terms and conditions**.

The entities in the DZ BANK Group are also exposed to the risk that the minimum liquidity surplus will fall below the limit. If the minimum liquidity surplus were to fall below the limit for an extended period, the possibility of **reputational damage and a ratings downgrade** could not be ruled out.

Crystallization of liquidity risk causes an unexpected **reduction in the liquidity surplus**, with potential negative consequences for DZ BANK's financial position and enterprise value. If a crisis were to occur in which the circumstances were more serious or the combination of factors were significantly different from those assumed in the stress scenarios, there would be a risk of **insolvency**.

6.3 Regulatory liquidity adequacy

6.3.1 Regulatory framework

Internal liquidity risk management is supplemented by the liquidity coverage ratio (LCR) specified in the Basel III framework, which was transposed into law with the CRR and Commission Delegated Regulation (EU) No. 2015/61, and by the net stable funding ratio (NSFR), which is based on the Basel III framework (BCBS 295).

The **liquidity coverage ratio** has a short-term focus and is intended to ensure that institutions can withstand a liquidity stress scenario lasting 30 days. This KPI is defined as the ratio of available liquid assets (liquidity buffer) to total net cash outflows in defined stress conditions over the next 30 days. Since January 1, 2018, banks have had to maintain an LCR of at least 100 percent (2017: 80 percent). DZ BANK reports its own LCR and that of the DZ BANK banking group, calculated in accordance with the CRR in conjunction with Commission Delegated Regulation (EU) No. 2015/61, to the supervisory authority on a monthly basis.

The **net stable funding ratio** has a long-term focus and is intended to ensure that institutions restrict mismatches between the maturity structures of their assets-side and liabilities-side business. This ratio is the amount of available stable funding (equity and liabilities) relative to the amount of required stable funding (assets-side business). The funding sources are weighted according to their degree of stability and assets are weighted according to their degree of liquidity based on factors defined by the supervisory authority. Unlike the liquidity coverage ratio, compliance with the NSFR will only become mandatory from the 2021 financial year with the application of CRR II. From this point, it is planned to manage the NSFR within the groupwide liquidity risk management system.

6.3.2 Organization, responsibility, and reporting

The liquidity ratios reported for supervisory purposes resulting from the CRR, the Basel III framework, and Commission Delegated Regulation (EU) No. 2015/61 are calculated for DZ BANK by the **Group Finance** division and aggregated at the level of the DZ BANK banking group with the corresponding values for the management units.

Both the **Treasury and Capital Committee** and the **Board of Managing Directors** are notified of the LCR and the NSFR each month.

6.3.3 Liquidity coverage ratio

The LCRs for the **DZ BANK banking group** and **DZ BANK** calculated in accordance with Commission Delegated Regulation (EU) No. 2015/61 are shown in Fig. 15.

FIG. 15 – LIQUIDITY COVERAGE RATIOS AND THEIR DETERMINING FACTORS

	DZ BANK banking group		DZ BANK	
	Dec. 31, 2018	Dec. 31, 2017	**Dec. 31, 2018**	Dec. 31, 2017
Total liquidity buffer (€ billion)	**78.7**	77.5	**58.0**	55.7
Total net liquidity outflows (€ billion)	**55.6**	47.9	**45.8**	40.0
Liquidity coverage ratio (%)	**141.4**	161.7	**126.7**	139.1

The decrease in the LCR measured for the DZ BANK banking group from 161.7 percent as at December 31, 2017 to 141.4 percent as at December 31, 2018 was largely attributable to lower excess cover at DZ BANK and DZ HYP. Excess cover in relation to the LCR is the difference between the liquidity buffer and the net liquidity outflows. The fall in the LCR for DZ BANK was primarily due to an increase in short-term deposits. Short-term deposits both offset the decrease in long-term liabilities and fund new business. Therefore, the overall effect was that the increase in net liquidity outflows was greater than the increase in the liquidity buffer at the level of DZ BANK. The decline in the liquidity buffer at DZ HYP arose because of an increase in the repo transactions necessary to fund its new business. At banking group level, these offsetting effects caused just a small rise in the liquidity buffer of €1.2 billion.

In the reporting year, the regulatory minimum requirement for the LCR of 100 percent (2017: 80 percent) was significantly exceeded on every reporting date at the level of both the DZ BANK banking group and DZ BANK.

6.4 Outlook

ECB ILAAP guidance

In 2019, it is planned to implement the requirements from the ILAAP guidance published by the ECB in November 2018 as part of the Single Supervisory Mechanism (SSM). The objective of the ILAAP is to ensure that banks have an appropriate liquidity and funding position. The ILAAP now combines an economic and a normative internal perspective.

In the DZ BANK Group, the **economic perspective** of the ILAAP will be closely based on the existing analysis of economic liquidity adequacy, but will include useful integration between the ILAAP and the ICAAP.

The **normative perspective** will be based on the liquidity ratios in Pillar 1. Its objective is to assess the DZ BANK banking group's ability to comply with regulatory minimum requirements (plus an internally specified management buffer). The assessment will comprise an analysis of the current position as well as forward-looking scenarios. It will include the assumptions used in the economic perspective.

These changes in the requirements are not expected to have any impact on either economic or regulatory liquidity adequacy.

NSFR
The new NSFR will continue to be integrated into liquidity risk management in the coming financial year.

7 Capital adequacy

7.1 Strategy, organization, and responsibility
The management of capital adequacy is an integral component of business management in the DZ BANK Group and at DZ BANK. Capital adequacy is defined as the holding of sufficient capital to cover the risks assumed by the business. It is considered from both an economic and a regulatory perspective. Whereas the economic perspective takes into account the requirements of MaRisk BA, the regulatory perspective applies the requirements from the CRR and the German national requirements for the implementation of Capital Requirements Directive IV (KWG and SolvV).

DZ BANK and all other management units are included in the groupwide management of capital adequacy. Management of economic capital adequacy on the basis of both internal risk measurement methods and regulatory capital adequacy requirements aims to ensure that the assumption of risk is always consistent with the DZ BANK Group's capital resources.

Regulatory solvency requirements for the DZ BANK financial conglomerate, the DZ BANK banking group, and the R+V Versicherung AG insurance group are observed in economic capital management.

The **Board of Managing Directors of DZ BANK** defines the corporate objectives and the capital requirement in the DZ BANK Group and at DZ BANK in terms of both risks and returns. In managing the risk profile, the Board of Managing Directors strives for an appropriate ratio between risk and available internal capital. DZ BANK is responsible for risk and capital management, and for compliance with capital adequacy at group level.

The management of economic and regulatory capital adequacy is based on internal target values. To avoid any unexpected adverse impact on **target values and capital ratios** and ensure that any changes in risk are consistent with corporate strategy, groupwide economic upper loss limits and risk-weighted assets are planned as limits for the risk capital requirement on an annual basis as part of the **strategic planning process**. This process results in a requirements budget for the economic and regulatory capital needed by the group. The implementation of any corresponding measures to raise capital is approved by the Treasury and Capital Committee and then coordinated by **Group Treasury** at DZ BANK. The integration of economic risk capital requirements planning into the strategic planning process aims to ensure that the risk strategy for types of risk covered by capital is closely linked with the business strategies.

At DZ BANK, the **Group Finance** division is responsible for monitoring regulatory capital adequacy. Regular monitoring is designed to ensure that the applicable minimum regulatory requirements for solvency are met at all times. Monitoring takes place monthly for the DZ BANK banking group and DZ BANK, and at least quarterly for the DZ BANK financial conglomerate and the R+V Versicherung AG insurance group. The Board of Managing Directors and the supervisory authority are notified of the results within the monthly reports on capital management.

7.2 Economic capital adequacy
Owing to the close ties between the management of economic capital adequacy at DZ BANK and that of the DZ BANK Group, the information below also applies to DZ BANK.

7.2.1 Measurement methods
Economic capital management is based on internal risk measurement methods that take into account all types of risk that are material from a capital adequacy perspective. The risk capital requirement is determined by aggregating the relevant risk types of all management units. The methods selected serve to meet the statutory requirements for a groupwide integrated risk capital management system.

In the **risk-bearing-capacity analysis**, the risk capital requirement (including capital buffer) is compared with the available internal capital in order to determine the economic capital adequacy. The Board of Managing Directors determines the upper loss limits for a particular year on the basis of the available internal capital. These limits then restrict the risk capital requirement (including capital buffer). If necessary, the upper loss limits can be adjusted during the year, e.g. if economic conditions change.

Available internal capital comprises equity and hidden reserves. It is reviewed on a quarterly basis. The available internal capital is determined as follows:

– The available internal capital from the **Bank sector** is calculated on the basis of the IFRS data in accordance with regulatory financial reporting. In this process, R+V is not fully consolidated but taken into account using the equity method.

– The available internal capital from the **Insurance sector** is based on the own funds of the R+V Versicherung AG insurance group in accordance with Solvency II.

The available internal capital from the two sectors is combined to produce the available internal capital of the DZ BANK Group. During this process, the effects of consolidation between the Bank and Insurance sectors are taken into account, resulting in a reduction in the available internal capital at group level.

The purpose of the **capital buffer** (also referred to below as the capital buffer requirement) is to cover the lack of precision in some areas of risk measurement. This applies to migration risk on traditional loans, for example. The individual components of the capital buffer are quantified using a method based on scenarios and models with input from experts. A distinction is made between centralized and decentralized capital buffer requirements. Decentralized capital buffer requirements are managed within the upper loss limits for the individual risk types, whereas the centralized capital buffer is managed on the basis of an upper loss limit covering all sectors and risk types.

7.2.2 Traffic light system

Economic capital adequacy is monitored and managed using a traffic light system based on the ratio of available internal capital to aggregate risk (expressed as a percentage).

The switch from green to amber in the traffic light system (**amber threshold**) is set at the minimum target for economic capital adequacy specified in the risk appetite statement, which in 2018 was unchanged compared with the previous year at 120 percent. The amber threshold serves as an early warning indicator. The **red threshold**, i.e. the borderline between amber and red in the traffic light system, was set at 110 percent in the year under review, again unchanged compared with 2017.

The threshold values for economic capital adequacy are reviewed annually and adjusted if necessary.

7.2.3 Risk-bearing capacity

Available internal capital

The DZ BANK Group's **available internal capital** as at December 31, 2018 was measured at €28,562 million. The comparable figure as at December 31, 2017 was measured at €27,831 million. The figure originally measured as at December 31, 2017 and disclosed in the 2017 opportunity and risk report came to €28,049 million. The increase in available internal capital arose mainly because of the positive financial performance and the rise in eligible own funds in the Insurance sector.

The upper loss limit derived from the available internal capital amounted to €24,276 million as at December 31, 2018 (December 31, 2017: €23,575 million). The rise in the upper loss limit was largely due to the growth derived from business performance.

As at the reporting date, **aggregate risk** was calculated at €17,025 million. The comparable figure as at December 31, 2017 was €16,392 million. The increase in risk, which was mainly attributable to the Insurance sector, was due to portfolio growth and the level of interest rates.

Economic capital adequacy

As at December 31, 2018, the economic capital adequacy ratio for the **DZ BANK Group** was calculated at 167.8 percent. The comparable figure as at December 31, 2017 was 169.8 percent. The figure originally measured as at December 31, 2017 and disclosed in the 2017 opportunity and risk report was 170.5 percent. During the reporting year, the economic capital adequacy ratio was higher than the internal minimum target of 120 percent and the external minimum target of 100 percent at all times.

Fig. 16 provides an overview of the DZ BANK Group's economic capital adequacy.

The upper loss limits and risk capital requirements including the capital buffer requirements for the **Bank sector**, broken down by risk type, are shown in Fig. 17.

Fig. 18 sets out the upper loss limits and overall solvency requirements for the **Insurance sector**, broken down by risk type, and includes policyholder participation. The definition of the upper loss limits and determination of overall solvency requirements take into account the ability to offset deferred taxes against losses (which arises where deferred tax liabilities can be eliminated in the loss scenario). Diversification effects between the risk types are also taken into consideration. Owing to these effects of correlation, the overall solvency requirement and upper loss limits for each risk type are not cumulative. The rise in the overall solvency requirement compared with the prior year resulted first and foremost from the trend in interest rates and business growth.

In addition to the figures shown in Fig. 17 and Fig. 18, the aggregate risk includes **a centralized capital buffer requirement across all types of risk**, which was calculated at €301 million as at December 31, 2018 (December 31, 2017: €332 million). The corresponding upper loss limit was €340 million (December 31, 2017: €350 million).

It was necessary to **recalculate the overall solvency requirement** as at December 31, 2017 owing to scheduled changes to the parameters for the risk measurement procedures and the updating of actuarial assumptions carried out in the second quarter of 2018 for the Insurance sector on the basis of R+V's 2017 consolidated financial statements. The recalculation reflects updated measurements of insurance liabilities based on annual actuarial analyses and updates to parameters in the risk capital calculation. Because of the complexity and the amount of time involved, the parameters are not completely updated in the in-year calculation and an appropriate projection is made.

The recalculation led to changes in the available internal capital, the key risk indicators at the level of the DZ BANK Group, and economic capital adequacy. The figures as at December 31, 2017 given in this opportunity and risk report have been restated accordingly and are not directly comparable with the figures in the 2017 opportunity and risk report.

FIG. 16 – ECONOMIC CAPITAL ADEQUACY OF THE DZ BANK GROUP

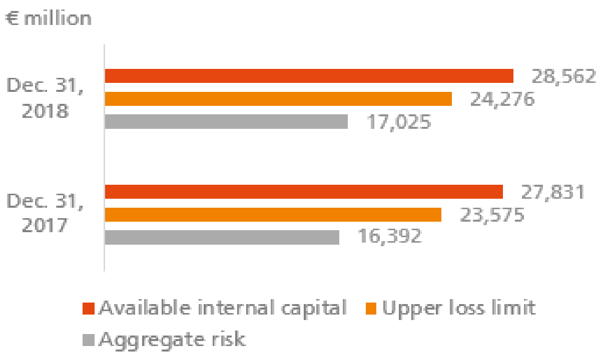


FIG. 17 – UPPER LOSS LIMITS AND RISK CAPITAL REQUIREMENT INCLUDING CAPITAL BUFFER IN THE BANK SECTOR

	Upper loss limit		Risk capital requirement[4]	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Credit risk	8,238	7,628	5,541	5,772
Equity investment risk	1,341	1,422	1,091	1,093
Market risk[1]	6,768	6,863	4,030	4,097
Technical risk of a home savings and loan company[2]	667	558	553	558
Business risk[3]	1,118	1,040	857	781
Operational risk	1,030	1,147	804	821
Total (after diversification)	18,236	17,805	11,600	11,861

1 Market risk contains spread risk and migration risk.
2 Including business risk and reputational risk of BSH.
3 Apart from that of BSH, reputational risk is contained in the risk capital requirement for business risk.
4 Including decentralized capital buffer requirement.

FIG. 18 – UPPER LOSS LIMITS AND OVERALL SOLVENCY REQUIREMENT IN THE INSURANCE SECTOR

	Upper loss limit		Overall solvency requirement	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Life actuarial risk	1,100	1,200	884	868
Health actuarial risk	350	370	312	219
Non-life actuarial risk	3,650	3,580	3,247	3,001
Market risk	4,350	3,800	4,343	3,240
Counterparty default risk	100	130	79	57
Operational risk	640	650	558	528
Non-controlling interests in insurance companies and entities in other financial sectors	145	140	104	127
Total (after diversification)	5,700	5,420	5,125	4,199

7.2.4 Possible impact from crystallized risk covered by capital

If risk covered by capital actually materializes, this has a negative impact on both financial performance and financial position as well as on the enterprise value of the DZ BANK Group and DZ BANK. In the income statement in this situation, the recognized expenses are higher and/or the recognized income is lower than originally expected. This is accompanied by a decrease in the net assets on the balance sheet because assets are unexpectedly lower and/or liabilities are unexpectedly higher. A widening of spreads on fungible financial instruments may also lead to a deterioration in the financial position, which is reflected in other comprehensive income.

If there is a deterioration in financial performance, there is the risk of long-term **negative risk-adjusted profitability** where the cost of capital cannot then be covered, and economic value added (EVA) becomes negative. If this situation arose, there would no longer be any point in continuing business operations from a business management perspective.

Viewed in isolation and assuming there are no other influencing factors, this chain of events would apply particularly in a scenario where the equity holder is simply seeking to maximize profits. In the case of DZ BANK, however, there is another significant factor in that the intention of the equity holders (who in many cases are also customers of DZ BANK and its subsidiaries) in committing equity to DZ BANK is not only to achieve, as far as possible, market-level returns commensurate with the risk involved, but also to utilize the decentralized services that DZ BANK provides as the central institution in the cooperative financial network. The return on capital that forms part of any purely monetary analysis therefore needs to be adjusted in the case of DZ BANK to add the effects of the extra benefits. Given this background, EVA is only of limited use for assessing the advantages of the investment in DZ BANK. Thus, a negative EVA is not necessarily associated with the discontinuation of business activities undertaken by DZ BANK or its subsidiaries.

If risk were to materialize and associated losses be incurred, there would be a risk that the DZ BANK Group would **miss its economic capital adequacy target**. However, this situation could also occur with an increase in risk arising from heightened market volatility or as a consequence of changes in the business structure. In addition, a decrease in available internal capital, for example because its components have expired or are no longer eligible, could mean t hat the risk capital requirement exceeds the available internal capital. Additional or more stringent regulatory requirements could also have a negative impact on the economic capital adequacy of the DZ BANK Group.

In a situation in which the economic capital adequacy of the DZ BANK Group could not be guaranteed, there would be insufficient capital available to meet the group's own standards with regard to the coverage of risk. This could lead to a **deterioration in the credit ratings** for DZ BANK and its subsidiaries. If there is also insufficient capital to meet the level of protection demanded by the supervisory authority, this authority could initiate action, which in extreme cases could lead to the **resolution** of DZ BANK or its subsidiaries.

7.3 Regulatory capital adequacy

7.3.1 Principles

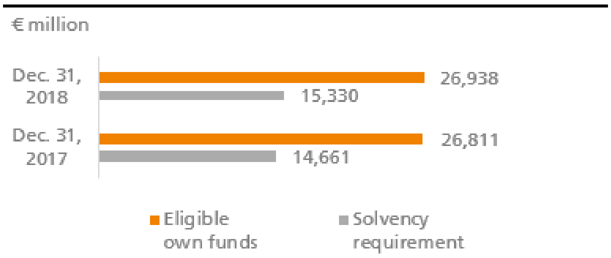
The regulatory ratios presented below are used as part of the internal management of the DZ BANK financial conglomerate, the DZ BANK banking group, and DZ BANK. The procedures used to determine these ratios are predominantly those that will be required by the full application of the CRR going forward. Some of the regulatory ratios contained in the opportunity and risk report therefore differ from the ratios reported to the supervisory authorities under the CRR transitional guidance and disclosed in the regulatory risk report.

7.3.2 DZ BANK financial conglomerate

The FKAG forms the main legal basis for the supervision of the DZ BANK financial conglomerate. The calculation methodology for the coverage ratio is taken from Commission Delegated Regulation (EU) No. 342/2014 in conjunction with article 49 (1) CRR.

The financial conglomerate coverage ratio is the ratio between the total of eligible own funds in the financial conglomerate and the total of solvency requirements for the conglomerate. The resulting ratio must be at least 100 percent. The changes in the **eligible own funds** and the **solvency requirements** are shown in Fig. 19.

FIG. 19 – REGULATORY CAPITAL ADEQUACY OF THE DZ BANK FINANCIAL CONGLOMERATE[1]



1 December 31, 2018: Preliminary figures; December 31, 2017: Final figures.

This gives a preliminary **coverage ratio** of 175.7 percent as at December 31, 2018 (final figure as at December 31, 2017: 182.9 percent), which is significantly in excess of the regulatory minimum requirement (100 percent) and the internal minimum target (120 percent).

7.3.3 DZ BANK banking group

Regulatory framework

The DZ BANK banking group uses the following methods to calculate the regulatory risk-weighted assets in accordance with the CRR:

- Credit risk: Primarily the foundation IRB approach and the IRB approach for the retail business (the regulatory credit risk measurement methods used by DVB are based on the advanced IRB approach)
- Market risk: Predominantly the group's own internal models and, to a minor extent, the Standardized Approaches
- Operational risk: Standardized Approach.

Regulatory minimum capital requirements

The minimum capital requirements that the DZ BANK banking group had to comply with in 2018 comprised those components of Pillar 1 laid down as mandatory by law and those individually specified by the banking supervisor. Institution-specific requirements under the additional capital requirements in Pillar 2, determined in the outcome of the SREP conducted for the DZ BANK banking group in 2017, also had to be satisfied. In this process, the supervisor specified a mandatory add-on (Pillar 2 requirement) that is factored into the basis of calculation used to determine the threshold for the maximum distributable amount (MDA). Distributions are restricted if capital falls below the MDA threshold. The mandatory add-on is determined from the outcome of the SREP.

In addition to this mandatory component, there is a recommended own funds amount under Pillar 2 (Pillar 2 guidance), which likewise is determined from the SREP, but unlike the mandatory component relates only to common equity Tier 1 capital. Failure to comply with the own funds guidance under Pillar 2 does not constitute a breach of regulatory capital requirements. Nevertheless, this figure is relevant as an early warning indicator for capital planning.
The mandatory minimum capital requirements and their components applicable to 2018 and 2017 are shown in Fig. 20.

FIG. 20 – REGULATORY MINIMUM CAPITAL REQUIREMENTS[1]

%	2018	2019
Minimum requirement for common equity Tier 1 capital	4.50	4.50
Additional Pillar 2 capital requirement	1.75	1.75
Capital conservation buffer	1.88	2.50
Countercyclical capital buffer[1]	0.05	
O-SII capital buffer	0.66	1.00
Mandatory minimum requirement for common equity Tier 1 capital	**8.84**	**9.75**
Minimum requirement for additional Tier 1 capital[2]	1.50	1.50
Mandatory minimum requirement for Tier 1 capital	**10.34**	**11.25**
Minimum requirement for Tier 2 capital[3]	2.00	2.00
Mandatory minimum requirement for total capital	**12.34**	**13.25**

1 The value for the countercyclical capital buffer is recalculated at each reporting date. Unlike the other reported values, which apply to the entire financial year, the countercyclical capital buffer relates solely to the reporting date of December 31, 2018.
2 The minimum requirement can also be satisfied with common equity Tier 1 capital.
3 The minimum requirement can also be satisfied with common equity Tier 1 or additional Tier 1 capital.

The countercyclical capital buffer for 2019 is not yet known because its level depends on the risk-weighted assets reported as at the reporting date and on the relevant country-specific capital buffer rates.

The mandatory and the recommended minimum capital requirements were complied with in the year under review on the basis of full application of the CRR. According to current projections, the requirements will also be satisfied in 2019.

The internal minimum targets at the level of the DZ BANK banking group for the common equity Tier 1 capital ratio, the Tier 1 capital ratio, and the total capital ratio were satisfied at all times during the reporting period. The internal minimum targets are shown in Fig. 6.

BaFin classified DZ BANK as an other systemically important institution (O-SII) in 2018. The DZ BANK banking group has to comply with an **O-SII capital buffer** (comprising common equity Tier 1 capital) as defined in section 10g (1) KWG at a level of 1.0 percent in 2019.

Regulatory capital ratios

The regulatory **own funds** of the **DZ BANK banking group** as at December 31, 2018 determined in accordance with full application of the CRR amounted to a total of €22,210 million (December 31, 2017: €22,702 million).

This equates to a year-on-year decline in own funds of €492 million, comprising an increase in **Tier 1 capital** of €68 million and a decrease in **Tier 2 capital** of €560 million.

In the case of **common equity Tier 1 capital**, net profits eligible for retention and the fall in the goodwill deduction had a positive impact. On the other hand, there was a negative impact on common equity Tier 1 capital from the decrease in accumulated other comprehensive income and from the deduction of securitization exposures applied for the first time as at December 31, 2018.

Tier 2 capital declined from €3,904 million as at December 31, 2017 to €3,344 million as at December 31, 2018, a year-on-year decrease of €560 million. This change was mainly attributable to the reduced level of eligibility under CRR rules for own funds instruments in this capital category in the last 5 years before their maturity date and to the fall in the write-down surplus.
Regulatory **risk-weighted assets** in the DZ BANK banking group went up from €131,700 million as at December 31, 2017 to €132,152 million as at December 31, 2018, a rise of €452 million. This increase was primarily due to greater levels of market risk and credit risk. The election to make use of the option regarding the treatment of securitization exposures had a countervailing effect. Since 2018, securitization exposures have been deducted from own funds in the amount of their basis of measurement rather than with a risk weight of 1,250 percent.

As at December 31, 2018, the DZ BANK banking group's **common equity Tier 1 capital ratio** was 13.7 percent. This was the same as the figure at the end of 2017. The **Tier 1 capital ratio** of 14.3 percent calculated as at the reporting date was also unchanged compared with the figure at December 31, 2017. By contrast, the **total capital ratio** declined from 17.2 percent as at December 31, 2017 to 16.8 percent as at the balance sheet date.

Fig. 21 provides an overview of the DZ BANK banking group's regulatory capital ratios.

The **common equity Tier 1 capital ratio** for **DZ BANK** was calculated at 15.4 percent as at December 31, 2018, which was lower than the equivalent figure of 16.5 percent as at December 31, 2017.

FIG. 21 – REGULATORY CAPITAL RATIOS WITH FULL APPLICATION OF THE CRR[1]

	Dec. 31, 2018	Dec. 31, 2017
Capital		
Common equity Tier 1 capital (€ million)	18,158	18,092
Additional Tier 1 capital (€ million)	708	706
Tier 1 capital	**18,866**	**18,798**
Total Tier 2 capital (€ million)	3,344	3,904
Total capital	**22,210**	**22,702**
Risk-weighted assets		
Credit risk including long-term equity investments (€ million)	112,425	113,876
Market risk (€ million)	9,104	6,778
Operational risk (€ million)	10,623	11,046
Total	**132,152**	**131,700**
Capital ratios		
Common equity Tier 1 capital ratio (%)	13.7	13.7
Tier 1 capital ratio (%)	14.3	14.3
Total capital ratio (%)	16.8	17.2

1 The figures as at December 31, 2017 differ from the corresponding figures disclosed in the opportunity and risk report for the first half of 2018 and in the opportunity and risk report for 2017 due to the transition to disclosure based on full application of the CRR and due to regulatory requirements.

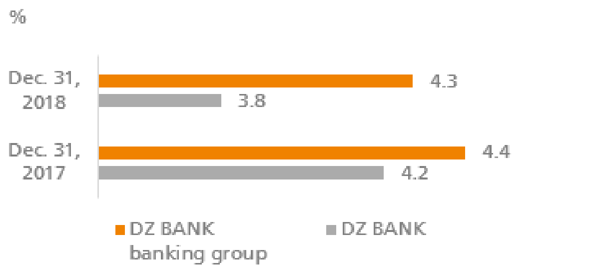
The **Tier 1 capital ratio** was also down, from 17.3 percent as at December 31, 2017 to 16.3 percent as at December 31, 2018. In addition, the **total capital ratio** declined from 21.4 percent as at December 31, 2017 to 19.7 percent as at the reporting date. The fall in the capital ratios was due both to the increased risk-weighted assets and to the lower level of own funds.

The ratios at DZ BANK banking group level and at DZ BANK level were well above the regulatory minimum capital ratios at all times during 2018.

Leverage ratio

The leverage ratios for the DZ BANK banking group and DZ BANK are shown in Fig. 22.

FIG. 22 – LEVERAGE RATIOS WITH FULL APPLICATION OF THE CRR



The year-on-year decrease in the leverage ratio for the **DZ BANK banking group** as at December 31, 2018 calculated in accordance with the rules under the full application of the CRR mainly arose because of an increase of €9.7 billion in the total exposure, which in turn was attributable to growth of on-balance-sheet business at DZ BANK.

The internal minimum target of 3.5 percent for the leverage ratio of the DZ BANK banking group was met at all times in 2018.

The leverage ratio also went down at **DZ BANK** level, accounted for principally by a decrease of €826 million in Tier 1 capital with a simultaneous increase of €10.9 billion in the total exposure. The rise in the total exposure was primarily caused by growth in on-balance-sheet business and an increase in off-balance-sheet exposures and securities financing transactions.

Minimum requirement for own funds and eligible liabilities

The BRRD, Regulation (EU) No. 806/2014 establishing a Single Resolution Mechanism, and the transposition of the BRRD into German law in the form of the SAG have created the legal basis at European and national level for a single resolution mechanism for banks and the MREL regulatory ratio.

The MREL is intended to ensure that banks hold a sufficiently large volume of own funds and liabilities that can be 'bailed-in' to make it possible at all times to carry out an orderly resolution. 'Bail-in-able' liabilities are those that provide for creditors to take an interest in losses incurred and recapitalization if a bank gets into financial difficulties, enabling resolution to take place on the basis of the bail-in and other instruments without recourse to government help and without jeopardizing the stability of the financial system.

The MREL ratio is the ratio of the total of own funds and eligible bail-in-able liabilities to the total liabilities and own funds of the DZ BANK banking group.

In June 2018, BaFin notified DZ BANK that the Single Resolution Board had set an MREL ratio of 8.19 percent for the DZ BANK banking group. This minimum requirement was met at all times in the year under review.

7.3.4 R+V Versicherung AG insurance group

The regulatory solvency requirements for insurance companies and insurance groups provide a means of evaluating the overall risk position in the R+V Versicherung AG insurance group.

The group's risk-bearing capacity for regulatory purposes is defined as the eligible own funds at group level in relation to the risks arising from operating activities. The changes in the regulatory risk-bearing capacity of the R+V Versicherung AG insurance group as a whole and each of its constituent entities are analyzed at least once a quarter.

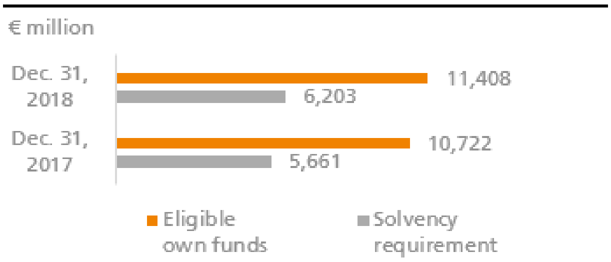
Fig. 23 shows how the solvency requirements are covered by eligible own funds.

As at December 31, 2018, the preliminary figure for the regulatory risk-bearing capacity of the R+V Versicherung AG insurance group was 183.9 percent (final figure as at December 31, 2017: 189.4 percent).

The recalculation of the overall solvency requirement described in section 7.2.3 also affected the regulatory risk-bearing capacity of the R+V Versicherung AG insurance group and led to retrospective changes in the solvency requirements as at the end of 2017. The figures as at December 31, 2017 given in this opportunity and risk report have been restated accordingly and are not directly comparable with the figures in the 2017 opportunity and risk report.

Analysis of the capital market scenarios applied in the internal planning shows that the regulatory risk-bearing capacity of the R+V Versicherung AG insurance group under Solvency II will exceed the minimum statutory requirement as at December 31, 2019. In view of the ongoing challenging situation in the financial markets, forecasts about changes in the solvency capital requirement and own funds are subject to significant uncertainty. However, R+V will take suitable measures to ensure it maintains its risk-bearing capacity.

FIG. 23 – REGULATORY CAPITAL ADEQUACY OF THE R+V VERSICHERUNG AG INSURANCE GROUP[1]



1 December 31, 2018: Preliminary figures; December 31, 2017: Final figures.

R+V carries out the stress tests specified by EIOPA and BaFin, and uses them to review whether it is in a position to meet its obligations to policyholders, even in the event of a sustained crisis situation on the capital markets.

7.4 Stress tests for types of risk covered by capital

7.4.1 Adverse stress tests

Adverse stress tests are used to examine the impact on capital and risk from potential **crisis scenarios** that are exceptional, but plausible, and particularly relevant to the DZ BANK Group's value and risk drivers. The **KPIs** relating to economic and regulatory capital adequacy are analyzed in this context. However, the stress tests also reflect events that go beyond the methods established for calculating capital adequacy. The term 'adverse stress tests' encompasses those stress scenarios that represent negative macroeconomic trends or events from the perspective of the DZ BANK Group. In this context, 'adverse' indicates that the scenarios may be particularly disadvantageous or even harmful.

Adverse stress tests can provide information on whether the level of capital resources – especially the buffer held to cover crisis situations – is also sufficient to cover various types of moderate to serious crisis scenario. The stress test results also facilitate an assessment of the extent to which the analyzed value and risk drivers are material for the DZ BANK Group.

The adverse stress tests consist of a number of **multiple-risk scenarios** and **specific stress tests** for the individual risk types backed by capital in the DZ BANK Group. The stress tests are generally designed for a 1-year scenario horizon as a minimum. They take into account both macroeconomic scenarios and historical situations that are particularly relevant for the DZ BANK Group's business model and portfolios. The risk-type-specific stress tests are hypothetical scenarios reflecting a degree of stress for a crisis that can occur every 10 years.

The adverse scenarios are based on macroeconomic factors from both the real economy and financial markets or they consist of specific events that are particularly relevant for the DZ BANK Group but not of a macroeconomic nature; some scenarios combine both macroeconomic and specific events.

The methods used are designed so that the specific features of R+V's business model and its risk and capital management systems are taken into account comprehensively and in an appropriate manner when determining the results of stress testing in the DZ BANK Group.

For the adverse stress tests, DZ BANK has put in place a system of threshold values as an **early-warning mechanism**. The threshold values for the scenarios across all risk types are monitored in the ongoing reporting system. These early-warning signals trigger various risk management processes so that there can be an early response to the potential risks highlighted by the stress tests. Control measures potentially available for the crisis scenario in question are also taken into account so that there is a comprehensive, critical evaluation of the stress test results.

The adverse stress tests are carried out quarterly. The results are noted by the **Board of Managing Directors** and by the DZ BANK Supervisory Board's **Risk Committee**.

7.4.2 Reverse stress tests

Reverse stress tests complement the adverse stress tests and are used to investigate which of the hypothetical scenarios could conceivably be sufficiently plausible and relevant to jeopardize the ability of the DZ BANK Group to **continue as a going concern**.

'Reverse' indicates that the tests are in the opposite direction and distinguishes them from the adverse stress tests. In adverse stress tests, scenarios are defined and the corresponding KPIs determined in order to assess whether there is a sufficient level of capital resources available to cover moderate or serious crisis scenarios. Reverse stress tests, on the other hand, examine which scenarios would have to occur to jeopardize the survival of the bank as a going concern.

In reverse stress tests, the risk to economic and regulatory KPIs is simulated with scenarios in which it would no longer be feasible to **continue the business model** or in which the business model would prove to be no longer sustainable. In the case of reverse stress tests, the priorities are therefore as follows: firstly, to identify relevant scenario approaches that could have the potential to jeopardize the bank's survival as a going concern, and secondly, to estimate the probability and plausibility of a specific, sufficiently serious scenario of this nature.

The **scenarios** analyzed in the reverse stress tests are based on available adverse scenarios (crisis situations) that are then extended to include further scenario elements, such as events (reverse elements). Scenario elements are determined taking into account key risk drivers and events. The relevant scenarios are adjusted such that the minimum requirements for the economic and regulatory KPIs can no longer be achieved even after all the measures available to maintain the business model have been applied.

The reverse stress tests are carried out annually. The results are noted by the **Board of Managing Directors** and by the DZ BANK Supervisory Board's **Risk Committee**.

7.5 Outlook

7.5.1 Risk data management

The DZ BANK Group has given a high priority to implementing the principles for effective risk data aggregation and risk reporting published by the BCBS. An as-is analysis was carried out in 2015 and an action plan drawn up. Since then, the entities in the DZ BANK Group have kept further expansion of their risk data aggregation and reporting capacity high on the agenda with the aim of satisfying the main requirements. The requirements are being implemented in groupwide projects.

7.5.2 ECB ICAAP guidance

In 2019, it is planned to implement the requirements from the ICAAP guidance published by the ECB in November 2018 as part of the SSM. The aim of the ICAAP is to ensure the availability of capital resources that are commensurate with the risks assumed. Going forward, there will be a distinction between two interlinked perspectives: a normative and an economic perspective.

The **economic perspective** is purely an internal perspective. The objective is to ensure that all significant risks are backed by capital in full. In the DZ BANK Group, the economic perspective of the ICAAP will be closely based on the existing analysis of economic capital adequacy, but will take into account that subordinated liabilities are now no longer eligible as available internal capital. This change in methodology will probably lead to a significant fall in economic capital adequacy.

The **normative perspective** is based on the capital ratios in Pillar 1. Its objective is to ensure that the DZ BANK financial conglomerate and the DZ BANK banking group comply with regulatory minimum capital requirements (plus an internally specified management buffer), both in the current circumstances and in forward-looking scenarios. The key elements of the new normative perspective in the DZ BANK Group will be the ongoing monitoring of regulatory KPIs, capital planning, and adverse stress tests.

Bank sector

8 Credit risk

8.1 Definition and business background

8.1.1 Definition

Credit risk is defined as the risk of losses arising from the default of counterparties (borrowers, issuers, other counterparties) and from the migration of the credit ratings of these counterparties.

Credit risk may arise in traditional lending business and also in trading activities. **Traditional lending business** is for the most part commercial lending, including financial guarantee contracts and loan commitments. In the context of credit risk management, **trading activities** refers to capital market products such as securities (in both the banking book and the trading book), promissory notes, derivatives, secured money market business (such as repo transactions), and unsecured money market business.

In **traditional lending business**, credit risk arises in the form of default risk. In this context, default risk refers to the risk that a customer may be unable to settle receivables arising from loans or advances made to the customer (including lease receivables) or make overdue payments, or that losses may arise from contingent liabilities or from lines of credit committed to third parties.

Credit risk in connection with **trading activities** arises in the form of default risk, which can be subdivided into issuer risk, replacement risk, and settlement risk, depending on the type of transaction involved.

Issuer risk is the risk of incurring losses from the default of issuers of tradable debt or equity instruments (such as bonds, shares, profit-participation certificates), losses from a default in connection with the underlying instrument in derivatives (for example, credit or equity derivatives), or losses from a default in connection with fund components.

Replacement risk on derivatives is the risk of a counterparty defaulting during the term of a trading transaction where entities in the Bank sector can only enter into an equivalent transaction with another counterparty by incurring an additional expense in the amount of the positive fair value at the time of default.

Recovery risk forms part of credit risk and increases the risk capital requirement for traditional credit risk, issuer risk, and replacement risk. Recovery risk arises from uncertainty relating to the recovery rates for collateral received. It also reflects the uncertainty regarding the recovery rate for unsecured receivables and the cure rate following counterparty default.

Settlement risk arises when there are two mutually conditional payments and there is no guarantee that when the outgoing payment is made the incoming payment will be received. Settlement risk is the risk of a loss if counterparties do not meet their obligations, counter-performance already having taken place.

Country risk is also included within credit risk. Country risk in the narrower sense of the term refers to conversion, transfer, payment prohibition, or moratorium risk. It is the risk that a foreign government may impose restrictions preventing a debtor in the country concerned from transferring funds to a foreign creditor. In the broader sense of the term, country risk forms part of credit risk. In this case, it refers to the risk arising from exposure to the government itself (sovereign risk) and the risk that the quality of the overall exposure in a country may be impaired as a result of country-specific events.

8.1.2 Business background

Default risk from traditional lending business arises primarily at DZ BANK, BSH, DVB, DZ HYP, and TeamBank. The risk results from the specific transactions in each management unit and therefore has varying characteristics in terms of diversification and size in relation to the volume of business.

Default risk relating to trading transactions arises from issuer risk, particularly in connection with the trading activities and investment business of DZ BANK, BSH, and DZ HYP. Replacement risk arises for the most part at DZ BANK, DZ PRIVATBANK, and DVB.

8.2 Risk strategy

The entities in the Bank sector pursue a strictly decentralized business policy aimed at promoting the cooperative banks and are bound by the core strategic guiding principle of a 'network-oriented central institution and financial services group'. The business and risk policy for the credit-risk-bearing core businesses in the group is formulated on the basis of risk-bearing capacity. The credit risk strategy therefore forms the basis for credit risk management and reporting across the whole group and ensures that there is a standard approach to credit risk within the group.

Lending throughout the group is predominantly based on the 'VR rating' system, a rating procedure developed by DZ BANK in collaboration with the BVR.

Both DZ BANK and the subsidiaries with a material credit risk seek to maintain a good rating and risk structure in their credit portfolios at all times. In the future, the portfolios will continue to be characterized by a high degree of diversification.

Where required, the Board of Managing Directors of DZ BANK makes decisions during the course of the year to ensure that the rules for the medium-term and long-term credit risk strategy are adjusted in line with changing circumstances and current developments.

The credit risk strategy specifies that the entities in the Bank sector must treat their partners fairly and, as part of the sustainability strategy, not enter into any lending arrangement that could prejudice the reputation of the DZ BANK Group. A sustainable lending policy developed on the basis of this strategy is applied in the majority of the management units involved in lending.

The latitude permitted by the credit risk policy for infrastructure projects was broadened slightly in 2018. However, the entities in the Bank sector are no longer involved in providing finance for the construction of new coal-fired power plants.

8.3 Organization, responsibility, and risk reporting

Responsibilities in the lending process have been laid down and are documented in a written set of procedural rules. These responsibilities cover loan applications, approvals, and processing, including periodic credit control with regular analysis of ratings. Decision-making authority levels are specified by the relevant **rules** based on the risk content of lending transactions.

Established **reporting and monitoring processes** help to provide decision-makers with information about changes in the risk structure of credit portfolios and form the basis for managing credit risk.

The **credit risk report** keeps the Group Risk and Finance Committee informed of the economic capital required to cover credit risk. In addition to providing management with recommendations for action, internal reporting also includes an in-depth analysis of the portfolio structure in regard to risk concentrations based on key risk characteristics such as country, industry, credit rating class, and the lending volume to single borrowers. In addition, the reports include details on specific exposures and specific loan loss allowances. The credit value-at-risk in the context of the risk mitigation provided by the upper loss limit is also part of the credit risk report.

8.4 Risk management

8.4.1 Rating systems

Use and characteristics of the rating systems

The generation of internal credit ratings for the counterparties of entities in the Bank sector helps to provide a solid basis for lending decisions in the management of transactions, in that the expected losses from defaults in the lending business are then factored into pricing. In addition, internal ratings are used to incorporate the credit quality of the counterparties when calculating unexpected losses in the credit portfolio.

The **VR rating system** used as standard throughout the cooperative financial network ensures that all the entities in the network apply a sophisticated uniform methodology producing ratings that are comparable.

DZ BANK primarily uses VR rating systems in its credit risk management system to assess large and medium-sized companies, major corporate customers, banks, and countries, as well as project finance, asset finance, acquisition financing, and investment funds. The internal assessment approach is also used to evaluate the liquidity lines and credit enhancements made available by DZ BANK to programs for the issuance of asset-backed commercial paper (ABCP). These rating systems have been approved by BaFin for the purposes of calculating regulatory capital using the **foundation IRB approach**.

For **internal management purposes**, DZ BANK uses further rating systems to assess SMEs (German Mittelstand), agricultural businesses, public-sector entities, not-for-profit organizations, foreign SMEs, and insurance companies. Although these rating systems satisfy the requirements for the foundation IRB approach in the opinion of DZ BANK, they are deemed to be of less significance and have not yet been reviewed by the supervisory authority. In addition, the rating systems for open-ended real estate funds and for commercial real estate used by the former WGZ BANK Group are used for internal management purposes.

Most of the other entities in the Bank sector use the DZ BANK rating systems for banks, countries, and major corporate customers. Rating systems for specific business segments are also used by individual subsidiaries.

Development and expansion of rating systems

All internal **rating systems** approved by the banking supervisor for solvency reporting were **validated** in 2018. The revision of the rating system for **project finance** used by DZ BANK for internal management purposes has been completed. The same also applies to the development of the supervisory **slotting approach for project finance**, which is scheduled to be used from 2020 onward to calculate the regulatory capital requirement. The regulatory review of the slotting approach is planned for the first half of 2019. In addition, the supervisory authority carried out an IRB review of the enhanced **rating system for banks** in the reporting year. The outcome of the review is expected in the first quarter of 2019.

The rating systems used for the IRB approach will be reviewed in 2019 in accordance with the EBA's 'Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures' (EBA/GL/2017/16).

DZ BANK credit rating master scale

The credit rating master scale serves as a groupwide rating benchmark with which to standardize the different rating systems used by the entities in the Bank sector as a result of differences in their business priorities. It thereby provides all management units with a uniform view of counterparties' credit ratings.

Fig. 24 shows DZ BANK's credit rating master scale, in which internal credit ratings are matched to the ratings used by Moody's, Standard & Poor's, and Fitch. It should be noted that some internal ratings cannot be matched with a particular external rating because of the greater degree of refinement in the credit rating master scale. The ratings for securitization exposures are matched to various different external ratings depending on the asset class and region. In DZ BANK's master scale, the default bands remain unchanged to ensure comparability over the course of time, whereas some fluctuation in default rates can be seen in external ratings. Therefore, it is not possible to map the internal ratings directly to the ratings used by the rating agencies. Consequently, the scale can only be used as a starting point for comparison between internal and external credit ratings.

DZ BANK rating desk

The VR rating systems for banks and countries are also available to DZ BANK subsidiaries and the cooperative banks. Users can enter into a master agreement to access the ratings via an IT application (Rating Desk), which is available throughout the cooperative financial network, in return for the payment of a fee. Any accessed ratings are first validated by the entities in the Bank sector or the cooperative banks before they are included in the user's credit procedures.

8.4.2 Lending business pricing

The management units in the Bank sector use the risk-adjusted pricing of the financing as a criterion in lending decisions. Adequate standard risk costs and risk-adjusted capital costs are taken into account. The methods used by the management units to manage transactions reflect the particular features of the product or business concerned.

FIG. 24 – BANK SECTOR: DZ BANK'S VR CREDIT RATING MASTER SCALE AND EXTERNAL CREDIT RATINGS

Internal rating class	Average default probability	External rating classes Moody's	Standard & Poor's	Fitch	Rating category
1A	0.01%	Aaa to Aa2	AAA to AA	AAA to AA	Investment grade
1B	0.02%	Aa3	AA-	AA-	
1C	0.03%				
1D	0.04%	A1	A+	A+	
1E	0.05%				
2A	0.07%	A2	A	A	
2B	0.10%	A3	A-	A-	
2C	0.15%	Baa1	BBB+	BBB+	
2D	0.23%	Baa2	BBB	BBB	
2E	0.35%				
3A	0.50%	Baa3	BBB-	BBB-	
3B	0.75%	Ba1	BB+	BB+	Non-investment grade
3C	1.10%	Ba2	BB	BB	
3D	1.70%				
3E	2.60%	Ba3	BB-	BB-	
4A	4.00%	B1	B+	B+	
4B	6.00%	B2	B	B	
4C	9.00%	B3	B-	B-	
4D	13.50%				
4E	30.00%	Caa1 or lower	CCC+ or lower	CCC+ or lower	
5A	Past due > 90 days				Default
5B	Specific loan loss allowance				
5C	Exemption from interest/debt restructuring				
5D	Insolvency				
5E	Compulsory winding-up/ derecognition				
NR	No rating necessary or not rated				

To ensure that lending business remains profitable, **standard risk costs** are determined in the management of individual transactions in many parts of the **Bank sector**. The purpose of these costs is to cover average expected losses from borrower defaults. The aim is to ensure that the net loss allowances recognized in the financial statements are covered on average over the long term in an actuarial-type approach by the standard risk costs included in the pricing.

In addition to standard risk costs, **an imputed cost of capital** based on the capital requirement is integrated into **DZ BANK's** contribution margin costing. This enables DZ BANK to obtain a return on the capital tied up that is in line with the risk involved and that covers any unexpected losses arising from the lending business. Pricing also includes an appropriate amount to cover the costs of risk concentration.

8.4.3 Credit-portfolio management

Credit portfolio models are used together with value-at-risk methods to quantify unexpected losses that may arise from the credit portfolio. Credit value-at-risk reduced by the expected loss describes the risk of unexpected losses arising should a default or migration event occur in the credit portfolio. The measurement includes default risk from both lending and trading businesses. When determining credit value-at-risk, recovery risk is also taken into account as the amount by which the actual loss deviates from the expected recovery rate or – in the case of transactions already in default – from the specific loan loss allowances. Risk is determined at the level of the Bank sector and also in the management units, including DZ BANK.

The credit portfolio is managed by limiting the credit value-at-risk to the upper loss limit set for credit risk. A traffic light system is used to monitor Bank sector management units' compliance with the upper loss limits specified for credit risk.

8.4.4 Sustainability review in the lending process

In the lending evaluation process, **DZ BANK** systematically reviews loan applications from relevant sustainability perspectives in order to limit any detrimental impact from its financing activities. All factors relevant to the financing arrangement in question are assessed in relation to environmental and social risks using a sustainability checklist based on the 10 principles of the **UN Global Compact** and the **Equator Principles**, the latter forming a global project finance standard for evaluating environmental and social risks. Loans to cooperative banks and to entities in the DZ BANK Group are exempt from the checks, as are exposures that are being restructured. Further exemptions apply to certain product types in the joint credit business with the cooperative banks, to loans under blanket approval agreements, and to exposures that are below the rating threshold.

At DZ BANK, industry-related principles are used in addition to the sustainability checklist when reviewing loan applications from sensitive industries (forestry, commodities mining/extraction, dam construction, fishing, and maritime industries). These principles specify the details to be reviewed with reference to international industry-specific conventions, recognized standards, certification, and optimum production processes.

8.4.5 Management of exposure in traditional lending business

Measuring exposure in traditional lending business

Individual lending exposures are managed on the basis of an analysis of gross lending exposure. The period taken into account in this case is equivalent to the monitoring cycle of 1 year. Together with risk-related credit-portfolio management, volume-oriented credit risk management is one of the components in the management of risk concentrations in the lending business.

In traditional lending business, the credit exposure or lending volume is generally the same as the nominal value of the total loan book and reflects the maximum volume at risk of default. The credit exposure is a gross value because risk-bearing financial instruments are measured before the application of any credit risk mitigation and before the recognition of any loss allowances.

In the leasing business, minimum lease payments are used as a basis for measuring the gross lending volume, while principal amounts are used for this purpose in building society operations. In addition, loans and advances to customers in building society operations are reduced by the associated deposits. The maximum credit exposure comprises the total lines of credit committed to third parties, or in the case of limit overruns, the higher amounts already drawn.

Limit system for managing exposures in traditional lending business

Limits are set in the relevant entities in the Bank sector for individual borrowers and groups of connected clients. Counterparties are also managed centrally at the level of the Bank sector, depending on the limit level and credit rating.

As a prerequisite for prompt monitoring of limits, suitable **early-warning processes** have been established in the management units that are of material significance for the Bank sector's credit risk. In this context, financial covenants are often incorporated into loan agreements to act as early-warning indicators for changes in credit standing and as a tool for the proactive risk management of lending exposures.

In addition, processes have been set up in the Bank sector to handle instances in which limits are **exceeded**. Such excess exposures must be approved by the relevant level of authority in the management units concerned and in accordance with applicable internal requirements, and must be reduced if necessary.

Country exposure in the traditional lending business is managed by setting **country limits** for industrialized countries and emerging markets at the Bank sector level.

8.4.6 Management of credit exposure in trading transactions

Measuring credit exposure in trading transactions

Issuer risk, replacement risk, and settlement risk are exposure-based measurements of the potential loss in trading transactions. These are determined without taking into account the likelihood of a default. In order to determine the credit exposure, securities in the banking book and trading book are predominantly measured at fair value (nominal amounts are used in building society operations), while derivatives are measured at fair value and, in respect of settlement risk, at the cash-flow-based accepted value.

The fair value of a securities exposure is used to determine the **issuer risk**. Risks relating to the underlying instruments in derivative transactions are also included in issuer risk.

At the level of the **Bank sector**, **replacement risk** is generally determined on the basis of fair value, taking into account appropriate add-ons. At **DZ BANK**, which is of particular significance as far as replacement risk is concerned, the risk is determined primarily according to each individual transaction as part of a portfolio simulation. The portfolio simulation models future exposures, taking into account a large number of risk factors. Replacement risk resulting from remaining over-the-counter (OTC) derivatives is calculated on the basis of fair value and the add-ons for individual transactions. The add-ons take into account specific risk factors and residual maturities.

With regard to exchange-traded derivatives, the replacement risk vis-à-vis the customer in customer brokerage business consists of the actual collateral exchanged (the variation margin for the daily settlement of profits and losses, and the initial margin as the collateral to be provided in advance to cover the loss risk), the fair value, and additional collateral requirements. To calculate the replacement risk vis-à-vis stock exchanges, additional potential for changes in value or add-ons for individual transactions are also taken into consideration. Where legally enforceable, netting agreements and collateral agreements are used at counterparty level for all derivatives in order to reduce exposure. In the case of repos and securities lending transactions, haircuts are applied instead of add-ons. Unsecured money market transactions are measured at fair value.

As regards **settlement risk**, the risk amount is the expected payment due. Settlement risk is recognized for the specified settlement period. It takes into account the amount and timing of outstanding cash flows for the purposes of managing the risk associated with mutual settlement at some point in the future. These future cash flows are already factored into the replacement risk through the fair value measurement and are therefore included in the risk capital requirement. As a result, settlement risk does not need to be covered with risk capital in addition to that for the other types of credit risk related to trading activities.

Limit system for managing trading exposure

DZ BANK has established an exposure-oriented **limit system** related to credit ratings to limit the default risk arising from trading business. Replacement risk is managed via a structure of limits broken down into maturity bands. Unsecured money market transactions are subject to separate limits. A daily limit is set in order to manage settlement risk. A specific limit for each issuer or, in certain circumstances, a general limit is determined as the basis for managing issuer risk. Covered bonds are subject to separate limits. The main subsidiaries have their own comparable limit systems.

The issuer risk in treasury's investment book is restricted by means of portfolio limits in addition to the individual issuer limits.

Exposure in connection with DZ BANK's trading business is measured and monitored using a standard method and a central, IT-supported limit management system to which all relevant trading systems are connected. Furthermore, the trading exposure in the Bank sector is managed on a decentralized basis at management unit level.

As in the traditional lending business, appropriate processes have also been established for the trading business to provide **early warnings and notification of limit overruns**. The member of the Board of Managing Directors responsible for risk monitoring is sent a daily list of significant exceeded trading limits. A monthly report is prepared covering the utilization of replacement and issuer risk in connection with trading activities.

Country exposure in the trading business is managed in the same way as in the traditional lending business by setting **limits for countries** at the Bank sector level.

8.4.7 Management of risk concentrations and correlation risks

Risk concentrations in credit and collateral portfolios

In managing the traditional lending business and its trading business, DZ BANK takes into account the correlation between collateral and the borrower pledging the collateral or between the collateral and the counterparty whose replacement risk the collateral is intended to mitigate. If there is a significant positive correlation between the collateral and the borrower or the counterparty pledging the collateral, the collateral is disregarded or accorded a reduced value as collateral. This situation arises, for example, where a guarantor, garnishee, or issuer forms a group of connected clients or a similar economic entity with the borrower or counterparty.

Wrong-way risk

General wrong-way risk can arise as a result of DZ BANK's trading activities. This is defined as the risk of a positive correlation between the default probability of a counterparty and the replacement value (replacement risk exposure) of a (hedging) transaction entered into with this counterparty because of a change in the macroeconomic market factors of the traded underlying instrument (e.g. price changes for exchange rates).

Specific wrong-way risk can also occur. This is the risk of a positive correlation between the default probability of a counterparty and the replacement value (replacement risk exposure) of a (hedging) transaction entered into with this counterparty because of an increase in the default probability of the issuer of the traded underlying instrument. This type of risk largely arises in connection with OTC equity and credit derivatives in which the underlying instrument is a (reference) security or (reference) issuer.

The measures described below are used to appropriately monitor these risks and significantly reduce them. As a result, wrong-way risk, in particular, is not material at DZ BANK.

Measures to prevent concentration risk and wrong-way risk

In order to prevent unwanted risks that may arise from the concentration or correlation of collateral in the trading business or from general wrong-way risk, DZ BANK has brought into force a collateral policy and its own internal 'minimum requirements for bilateral reverse repo transactions and securities lending transactions'.

These requirements are based on the Credit Support Annex (ISDA Master Agreement) and the Collateralization Annex (German Master Agreement for Financial Futures) and stipulate that, in accordance with the collateral policy, only collateral in the form of cash (mainly in euros or US dollars), investment-grade government bonds, and/or Pfandbriefe can be used for mitigating risks arising from **OTC derivatives**. Exceptions to this rule are permitted, mainly for local cooperative banks, although a very good credit rating (at least 2B on DZ BANK's credit rating master scale) is still required for the relevant securities collateral. The collateral must also be eligible for use as collateral at the ECB.

High-grade collateral is also required for **repo and securities lending transactions** in compliance with DZ BANK's own internal minimum requirements and the generally accepted master agreements, although the range of collateral is somewhat broader here than in the case of OTC derivatives. Furthermore, the 'minimum requirements for bilateral reverse repos and securities lending transactions' exclude prohibited correlations and specify collateral quality depending on the credit rating of the counterparties. The relevant rules are monitored on a daily basis and any infringements of the requirements are reported each month to the Risk Committee.

If material specific wrong-way risk arises in connection with a bilateral OTC trading transaction, it is taken into account when the exposure is calculated.

The Risk Committee receives quarterly reports on relevant wrong-way risk and concentration risk arising in connection with derivatives and securities financing, including any necessary exposure adjustments.

8.4.8 Mitigating credit risk

Collateral strategy and secured transactions

In accordance with the credit risk strategy, **customer credit quality** forms the main basis for any lending decision; collateral has no bearing on the borrower's credit rating. However, depending on the structure of the transaction, collateral may be of material significance in the assessment of risk in a transaction.

Collateral in line with the level of risk in medium-term or long-term financing arrangements is generally sought. In particular, recoverable collateral equivalent to 50 percent of the finance volume is required for new business with SME customers in rating category 3D or below on the credit rating master scale.

Collateral is used as an appropriate tool for the management of risk in export finance or structured trade finance transactions. In the case of project finance, the financed project itself or the assignment of the rights in the underlying agreements typically serve as collateral.

Secured transactions in traditional lending business encompass commercial lending including financial guarantee contracts and loan commitments. In order to protect transactions against default risk, traditional collateral is obtained, the decision being made on a case-by-case basis.

Types of collateral

The entities in the Bank sector use all forms of **traditional loan collateral**. Specifically, these include mortgages on residential and commercial real estate, registered ship and aircraft mortgages, guarantees (including sureties, credit insurance, and letters of comfort), financial security (certain fixed-income securities, shares, and investment fund units), assigned receivables (blanket and individual assignments of trade receivables), and physical collateral.

Privileged mortgages, registered ship and aircraft mortgages, guarantees, and financial collateral are the main sources of collateral recognized for regulatory purposes under the CRR.
In accordance with DZ BANK's collateral policy, only cash, investment-grade government bonds, and/or Pfandbriefe are normally accepted as **collateral for trading transactions** required by the collateral agreements used to mitigate the risk attaching to OTC derivatives. DZ BANK also enters into netting agreements to reduce the credit risk arising in connection with OTC derivatives. The prompt evaluation of collateral within the agreed margining period also helps to limit risk.

In order to reduce the issuer risk attaching to bonds and derivatives, use is made of credit derivatives, comprising credit-linked notes, credit default swaps, and total return swaps. Macro hedges are used dynamically to mitigate spread risk and migration risk as well as risks attaching to underlying assets. In isolated cases, transactions are conducted on a back-to-back basis. For risk management purposes, the protection provided by credit derivatives is set against the reference entity risk, thereby mitigating it. The main protection providers/counterparties in credit derivatives are financial institutions, mostly investment-grade banks in the VR rating classes 1A to 2C.

Management of traditional loan collateral

Collateral management is the responsibility mainly of **specialist units**, generally outside the front-office divisions. The core tasks of these units include providing, inspecting, measuring, recording, and managing collateral and providing advice to all divisions in related matters.

To a large extent, standardized contracts are used for the provision of collateral and the associated declarations. Specialist departments are consulted in cases where customized collateral agreements are required. Collateral is managed in separate IT systems.

Collateral **is measured** in accordance with internal guidelines and is usually the responsibility of back-office units. As a minimum, carrying amounts are normally reviewed annually or on the agreed

submission date for documents relevant to measurement of the collateral. Shorter monitoring intervals may be specified for critical lending exposures. Regardless of the specified intervals, collateral is tested for impairment without delay if any indications of impairment become evident.
The workout units are responsible for **recovering collateral**. In the case of non-performing loans, it is possible to depart from the general measurement guidelines and measure collateral on the basis of its likely recoverable value and time of recovery. Contrary to the general collateralization criteria, collateral involved in restructuring exposures can be measured using market values or the estimated liquidation proceeds.

Collateral management

In addition to **netting agreements** (ISDA Master Agreement and German Master Agreement for Financial Futures), **collateral agreements** (Credit Support Annex to the ISDA Master Agreement and Collateralization Annex to the German Master Agreement for Financial Futures) are entered into as instruments to reduce credit exposure in OTC transactions.

DZ BANK's **collateral policy** regulates the content of collateral agreements and the responsibilities and authorities for implementing the rights and obligations they confer within the bank. This policy specifies contractual parameters, such as the quality of collateral, frequency of transfer, minimum transfer amounts, and thresholds. DZ BANK regularly uses bilateral collateral agreements. Exceptions apply to cover assets and special-purpose entities, as the special legal status of the counterparties means that only unilateral collateral agreements can be usefully enforced, and to supranational or government entities. Any decision not to use a bilateral collateral agreement for counterparties not subject to the European Market Infrastructure Regulation (EMIR) rules must be approved by a person with the relevant authority.

Netting and collateralization generally result in a significant reduction in the exposure from trading business. IT systems are used to measure exposures and collateral. **Margining** is carried out on a daily basis for the vast majority of collateral agreements in accordance with the collateral policy.

Collateral agreements entered into before March 1, 2017 generally include **thresholds** and minimum transfer amounts that are independent of the credit rating. There are also some agreements with triggers based on the credit rating. In these agreements, for example, the unsecured part of an exposure is reduced in the event of a ratings downgrade or the borrower is required to make additional payments (for example, payments known as 'independent amounts'). Since the EMIR collateral agreement obligation came into force, the supervisory authorities have specified these contractual provisions as standard.

EMIR requires the exchange of an initial margin in bilateral OTC derivatives transactions in addition to the variation margin. This **initial margin exchange** is expected to be mandatory for the entities in the Bank sector no earlier than September 2019. The entities in the DZ BANK Group have initiated action plans enabling them to meet this regulatory requirement from September 2019.

Central counterparties

EMIR has permanently changed the environment in which banks, insurance companies, and investment funds conduct OTC derivative transactions. Under this regulation, market players must report all exchange-traded and OTC derivatives to central trade repositories and use predefined steps to settle certain standardized OTC derivatives via central counterparties (known as clearing houses). Furthermore, risk mitigation methods have to be used for OTC derivatives that are not settled centrally through a clearing house. This is intended to minimize counterparty risk.

Any market players not exempted from this new clearing obligation must be connected to a central counterparty. The market player concerned may be a direct member of a clearing house or may process its derivative contracts using a bank that is a member of a central counterparty.

DZ BANK is a direct member of the London Clearing House, which is Europe's largest clearing house for interest-rate derivatives, and of Eurex Clearing AG. The bank therefore has direct access to central counterparties for derivatives for the purposes of clearing derivative transactions. In the case of credit derivatives, it also has indirect access to the Intercontinental Exchange clearing house via clearing broker Deutsche Bank.

8.4.9 Management of non-performing lending exposures

Managing and monitoring non-performing exposures

Identified non-performing loans are transferred to the **workout units** at an early stage. By providing intensified loan management for critical exposures and applying tried-and-tested solutions, these special units lay the basis for securing and optimizing non-performing risk positions.

In its traditional lending business, DZ BANK has a comprehensive range of tools at its disposal for the early identification, close support, and high-quality monitoring of non-performing exposures. The sub-portfolio of non-performing loans is reviewed, updated, and reported on a quarterly basis. The process is also carried out at shorter intervals if required. This process is comprehensively supported by IT systems. Meaningful, prompt internal reporting focused on target groups is a key component of this approach. If necessary, the intensified loan management put in place for individual borrowers is transferred to task forces specially set up for this purpose. The risks in sub-portfolios are monitored and analyzed by means of regular reports.

Where required, similar procedures have been implemented in the main subsidiaries, which adapt them to the characteristics of the risks faced in their particular business.

Policies and procedures for the recognition of loss allowances

The description required by GAS 20 A1.7(c) of the methods used for recognizing loss allowances is included in note 5 of the notes to the consolidated financial statements.

Non-performing loans

The entities in the Bank sector classify a loan as non-performing if it has been rated between 5A and 5E on the VR master scale. This corresponds to the definition of default specified by the CRR. Non-performing loans are also referred to by the abbreviation NPLs.

The following key figures are used to manage non-performing loans:

- Loss allowance ratio (balance of loss allowances as a proportion of total lending volume)
- Risk cover ratio (balance of loss allowances as a proportion of the volume of non-performing loans)
- NPL ratio (volume of non-performing loans as a proportion of total lending volume).

The management of non-performing loans at DZ BANK is currently being updated in line with the requirements specified in the NPL guidance issued by the ECB.

8.5 Specific risk factors

Key values used in determining the credit risk include the lending volume, concentrations in terms of counterparties, sectors, countries, and maturities, and the credit quality structure of the credit portfolio.

For the purposes of internal credit risk management in the Bank sector, the lending volume is broken down by credit-risk-bearing instrument – traditional lending, securities business, and derivatives and money market business. This breakdown corresponds to the risk classes required for the external reporting of risks arising from financial instruments. The credit-risk-bearing instruments are classified by sector, country group, credit rating, and term to maturity so that volume concentrations can be identified.

Particularly in the case of an accumulation of exposures that have longer terms to maturity and a non-investment-grade rating, there is a danger that the credit risk will materialize, causing losses with a negative impact on the financial performance and financial position of the DZ BANK Group or DZ BANK.

8.6 Lending volume

8.6.1 Reconciliation of lending volume to the consolidated financial statements

Fig. 25 shows a reconciliation of the gross lending volume on which the risk management is based to individual balance sheet items in order to provide a transparent illustration of the link between the consolidated financial statements and risk management. There are discrepancies between the internal management and external consolidated financial reporting measurements for some products owing to the focus on the risk content of the items. The other main reasons for the discrepancies between the internal management figures and those in the external consolidated financial statements are differences in the scope of consolidation and differences in recognition and measurement methods.

Differences in the **scope of consolidation** result from the fact that, in internal credit risk management, only the entities in the Bank sector that contribute significantly to the overall risk of the sector are included.

The discrepancy in the **securities business** is mainly due to the variations in carrying amounts that arise because credit derivatives are offset against the issuer risk attaching to the underlying transaction in the internal management accounts, whereas such derivatives are recognized at their fair value as financial assets or financial liabilities held for trading in the consolidated financial statements.

Measurement differences in **derivatives business** and **money market business** are mainly because countervailing positions are offset for the purposes of risk management, whereas positions must not be netted in this way in the consolidated financial statements. In addition, add-ons are attached to the current fair values of derivative positions in the internal management accounts to take account of potential future changes in their fair value. By contrast, the external (consolidated) financial statements focus exclusively on the fair values determined on the valuation date, and, unlike in the internal accounts, collateral must not be recognized for risk mitigation purposes.

In money market business, further discrepancies arise between the consolidated financial statements and internal credit risk reports due to the method in which repo transactions are recognized. In contrast to the consolidated financial statements, securities provided or received as collateral are offset against the corresponding assets or liabilities for the purposes of the internal management accounts.

8.6.2 Change in lending volume

The **total lending volume** of the **Bank sector** increased by 1 percent overall in the year under review, from €375.2 billion as at December 31, 2017 to €378.9 billion as at December 31, 2018. This was mainly because of a rise of 3 percent in the lending volume in the **traditional lending business**, from €279.8 billion as at December 31, 2017 to €289.3 billion as at December 31, 2018. This rise primarily related to the volume of lending disbursed by DZ BANK to local cooperative banks. The lending volume in the **derivatives and money market business** was also up, by 17 percent, from €14.2 billion as at December 31, 2017 to €16.6 billion as at December 31, 2018. This increase was also largely attributable to DZ BANK. By contrast, the volume in the **securities business** contracted by 10 percent, from €81.1 billion as at December 31, 2017 to €73.0 billion as at December 31, 2018. This was mainly due to the reduction in the volume of public-sector bonds held by DZ BANK.

At **DZ BANK**, the **total lending volume** rose by 1 percent, from €197.2 billion as at December 31, 2017 to €198.3 billion as at December 31, 2018. This was mainly due to an increase in volume in the traditional lending business, which went up from €141.1 billion as at the prior-year reporting date to €146.7 billion as at December 31, 2018. **Derivatives and money market business** at DZ BANK also grew, rising from €13.1 billion as at December 31, 2017 to €14.9 billion as at December 31, 2018. On the other hand, the **securities business** contracted from €43.0 billion as at December 31, 2017 to €36.8 billion as at December 31, 2018, largely because of a fall in public-sector bond exposure.

8.6.3 Sector structure of the credit portfolio

Fig. 26 shows the breakdown of the credit portfolio by sector, in which the lending volume is classified according to the industry codes used by Deutsche Bundesbank. This also applies to the other sector breakdowns related to credit risk in this opportunity and risk report.

As at December 31, 2018, a significant proportion (36 percent) of the lending volume in the **Bank sector** continued to be concentrated in the financial sector (December 31, 2017: 35 percent). In addition to the local cooperative banks, the borrowers in this customer segment comprised banks from other parts of the banking industry and other financial institutions.

As at December 31, 2018, a significant proportion (60 percent) of **DZ BANK's** lending volume was also concentrated in the financial sector (December 31, 2017: 59 percent). The composition of this customer segment is the same both at DZ BANK and in the Bank sector. Loans and advances to public-sector borrowers declined by €4.9 billion year on year, with a particularly large decrease in Germany.

FIG. 25 – BANK SECTOR: RECONCILIATION OF THE LENDING VOLUME

€ billion			Reconciliation							
Lending volume for internal management accounts			Scope of consolidation		Carrying amount and measurement					
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017		Dec. 31, 2018		Dec. 31, 2017
								79.2		80.6
								79.2		80.6
								-		-
Traditional lending business	289.3	279.8	2.4	1.9	20.3	10.2	312.0	170.3	291.8	170.8
								172.6		173.6
								-2.2		-2.8
								62.4		40.5
								56.6		64.0
								10.8		8.9
Securities business	73.0	81.1	0.3	-	-16.6	-17.2	56.6	0.7	64.0	0.8
								45.1		54.3
								-2.1		-1.6
								0.9		1.1
Derivatives business	13.7	12.7	0.1	-	-15.9	-14.4	-2.1	15.6	-1.6	17.1
								-2.5		-3.0
								-16.1		-16.8
								24.6		51.6
								12.4		39.9
								1.9		0.8
Money market business	3.0	1.5	-	-	21.6	50.1	24.6	0.2	51.6	0.2
								9.6		10.3
								0.5		0.4
Total	378.9	375.2	2.8	2.0	9.4	28.8	391.1		405.9	
								Balance as at Dec. 31, 2018	12.2	3.2%
								Balance as at Dec. 31, 2017	30.7	8.2%

Not relevant

In its role as central institution for the Volksbanken Raiffeisenbanken cooperative financial network, DZ BANK provides funding for the entities in the Bank sector and for the cooperative banks. For this reason, the cooperative banks account for one of the largest receivables items in the DZ BANK Group's credit portfolio. DZ BANK also supports the cooperative banks in the provision of larger-scale funding to corporate customers.

The resulting syndicated business, DZ BANK, DZ HYP and DVB's direct business with corporate customers in Germany and abroad, BSH and DZ HYP's retail real-estate business, and TeamBank's consumer finance business determine the sectoral breakdown of the remainder of the portfolio.

8.6.4 Geographical structure of the credit portfolio

Fig. 27 shows the geographical distribution of the credit portfolio by country group. The lending volume is assigned to the individual country groups using the International Monetary Fund's breakdown, which is updated annually. This also applies to the other country-group breakdowns related to credit risk in this opportunity and risk report.

As at December 31, 2018, 96 percent of the lending in the **Bank sector** (unchanged year on year) and 95 percent of the total lending by **DZ BANK** (December 31, 2017: 96 percent) was concentrated in Germany and other industrialized countries.

Lending volume for the consolidated financial statements	Note
Loans and advances to banks	
of which: loans and advances to banks excluding money market placements	50
of which: loss allowances for loans and advances to banks	59
Loans and advances to customers	
Loans and advances to customers excluding money market placements	51
of which: loss allowances for loans and advances to customers	59
Financial guarantee contracts and loan commitments	87
Bonds and other securities	
of which: financial assets held for trading/bonds excluding money market placements	53
of which: financial assets held for trading/promissory notes, registered bonds, and loans and advances	53
of which: investments/bonds excluding money market placements	54
Derivatives	
of which: derivatives used for hedging (positive fair values)	52
of which: financial assets held for trading/derivatives (positive fair values)	53
of which: derivatives used for hedging (negative fair values)	65
of which: financial liabilities held for trading/derivatives (negative fair values)	66
Money market placements	
of which: loans and advances to banks/money market placements	50
of which: loans and advances to customers/money market placements	51
of which: financial assets held for trading/money market instruments	53
of which: financial assets held for trading/money market placements	53
of which: investments/money market instruments	54

FIG. 26 – BANK SECTOR: LENDING VOLUME, BY SECTOR

	Traditional lending business		Securities business		Derivatives and money market business		Total	
€ billion	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Financial sector	98.3	94.5	25.7	26.1	12.8	10.9	136.8	131.6
Public sector	10.4	10.4	35.9	43.2	0.4	0.5	46.7	54.2
Corporates	114.9	104.5	7.6	7.7	3.0	2.3	125.5	114.4
Retail	57.2	62.9	2.4	2.4	-	-	59.6	65.3
Industry conglomerates	7.8	7.0	1.5	1.6	0.4	0.5	9.7	9.2
Other	0.7	0.5	-	-	-	-	0.7	0.5
Total	**289.3**	**279.8**	**73.0**	**81.1**	**16.6**	**14.2**	**378.9**	**375.2**

FIG. 27 – BANK SECTOR: LENDING VOLUME, BY COUNTRY GROUP

	Traditional lending business		Securities business		Derivatives and money market business		Total	
€ billion	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Germany	254.3	243.6	43.1	50.6	10.1	8.9	307.4	303.1
Other industrialized countries	23.5	25.2	26.1	27.2	5.5	4.7	55.2	57.2
Advanced economies	2.5	2.9	0.8	0.6	0.1	0.1	3.4	3.6
Emerging markets	9.0	8.1	0.9	0.9	0.2	0.2	10.1	9.1
Supranational institutions	-	-	2.1	1.9	0.6	0.3	2.8	2.2
Total	289.3	279.8	73.0	81.1	16.6	14.2	378.9	375.2

8.6.5 Residual maturity structure of the credit portfolio

The breakdown of the **Bank sector** credit portfolio by residual maturity as at December 31, 2018 presented in Fig. 28 shows that the lending volume had increased by €5.6 billion in the short-term maturity band compared with December 31, 2017. This was mainly attributable to DZ BANK. The decrease in the medium-term maturity band amounted to €3.0 billion and was also mainly accounted for by DZ BANK. By contrast, the lending volume in the longer-term maturity band went up by a total of €1.2 billion, primarily attributable to BSH.

8.6.6 Rating structure of the credit portfolio

Fig. 29 shows the Bank sector's consolidated lending volume by rating class according to the VR credit rating master scale.

In the **Bank sector**, the proportion of the total lending volume accounted for by rating classes 1A to 3A (investment grade) as at December 31, 2018 was unchanged year on year at 78 percent. Rating classes 3B to 4E (non-investment grade) represented 20 percent of the total lending volume as at the reporting date, which was also unchanged compared with the end of 2017. Defaults, represented by rating classes 5A to 5E, accounted for 1 percent of the total lending volume in the Bank sector as at December 31, 2018 (December 31, 2017: 2 percent).

Rating classes 1A to 3A (investment grade) also dominated lending at **DZ BANK**, where they accounted for 88 percent of the total lending volume, again unchanged compared with the prior-year reporting date. Rating classes 3B to 4E (non-investment grade) represented 10 percent of the total lending volume as at the reporting date, which was also unchanged compared with the figure as at December 31, 2017. Defaults (rating classes 5A to 5E) accounted for 1 percent of the total lending volume as at December 31, 2018, which was again largely unchanged year on year.

As at December 31, 2018, the 10 counterparties associated with the largest lending volumes accounted for 7 percent of total lending in the **Bank sector** (December 31, 2017: 8 percent). These borrowers were predominantly in the public sector and had investment-grade ratings. The equivalent proportion for **DZ BANK** was 7 percent (December 31, 2017: 8 percent). In this case, these counterparties largely comprised public-sector and financial-sector borrowers with investment-grade ratings.

FIG. 28 – BANK SECTOR: LENDING VOLUME, BY RESIDUAL MATURITY

	Traditional lending business		Securities business		Derivatives and money market business		Total	
€ billion	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
≤ 1 year	53.6	49.4	13.2	13.6	11.6	9.8	78.4	72.8
> 1 year to ≤ 5 years	53.2	53.1	26.3	29.1	1.4	1.8	81.0	84.0
> 5 years	182.4	177.3	33.5	38.4	3.6	2.7	219.5	218.4
Total	289.3	279.8	73.0	81.1	16.6	14.2	378.9	375.2

FIG. 29 – BANK SECTOR: LENDING VOLUME, BY RATING CLASS

€ billion		Traditional lending business		Securities business		Derivatives and money market business		Total	
		Dec. 31, 2018	Dec. 31, 2017	**Dec. 31, 2018**	Dec. 31, 2017	**Dec. 31, 2018**	Dec. 31, 2017	**Dec. 31, 2018**	Dec. 31, 2017
Investment grade	1A	**5.1**	6.3	**30.8**	30.1	**1.2**	1.0	**37.1**	37.4
	1B	**1.6**	2.0	**2.8**	8.1	**2.5**	1.6	**6.9**	11.8
	1C	**91.8**	87.7	**8.2**	8.6	**3.4**	3.6	**103.4**	99.9
	1D	**6.8**	5.1	**2.0**	2.2	**0.2**	0.2	**9.0**	7.5
	1E	**11.5**	7.9	**2.0**	1.9	**1.9**	1.8	**15.4**	11.5
	2A	**9.9**	12.3	**5.8**	3.2	**1.4**	0.9	**17.1**	16.5
	2B	**11.4**	11.4	**6.1**	10.1	**2.1**	1.7	**19.7**	23.2
	2C	**14.9**	14.3	**2.5**	2.5	**1.0**	0.6	**18.4**	17.4
	2D	**17.1**	15.0	**2.9**	3.4	**0.7**	0.5	**20.7**	19.0
	2E	**17.6**	18.7	**2.5**	5.1	**0.8**	0.9	**20.9**	24.8
	3A	**21.8**	20.1	**3.8**	1.8	**0.6**	0.6	**26.2**	22.5
Non-investment grade	3B	**22.9**	19.9	**1.4**	1.4	**0.3**	0.2	**24.7**	21.5
	3C	**16.3**	17.8	**0.3**	0.3	**0.1**	0.1	**16.7**	18.2
	3D	**15.0**	13.9	**0.5**	0.5	**0.1**	0.1	**15.5**	14.5
	3E	**5.7**	4.5	**0.2**	0.6	**-**	-	**6.0**	5.2
	4A	**2.3**	2.5	**-**	-	**-**	-	**2.3**	2.6
	4B	**5.1**	5.3	**-**	-	**-**	-	**5.1**	5.3
	4C	**2.6**	3.5	**0.1**	0.1	**-**	-	**2.7**	3.5
	4D	**0.6**	0.7	**-**	-	**-**	-	**0.6**	0.7
	4E	**2.2**	3.0	**-**	0.1	**-**	-	**2.2**	3.1
Default		**4.8**	6.0	**0.1**	0.2	**-**	-	**5.0**	6.2
Not rated		**2.5**	2.0	**0.8**	0.8	**0.3**	0.3	**3.5**	3.1
Total		**289.3**	279.8	**73.0**	81.1	**16.6**	14.2	**378.9**	375.2

8.6.7 Collateralized lending volume

Fig. 30 shows the breakdown of the collateralized lending volume at overall portfolio level by type of collateral and by risk-bearing instrument.

In the case of **traditional lending business**, lending volume is generally reported as a gross figure before the application of any offsetting agreements, whereas the gross lending volume in the **derivatives and money market business** is shown on a netted basis. In the derivatives and money market business, collateral values are relatively low and are in the form of personal and financial collateral. In the **securities business**, there is generally no further collateralization to supplement the hedging activities already taken into account. For this reason, securities business is not included in the presentation of the collateralized lending volume.

As at December 31, 2018, the collateralized lending volume in the **Bank sector** had risen to €121.5 billion from €116.1 billion as at December 31, 2017. The increase was mainly attributable to the expansion of the real estate finance business. The collateralization rate was 39.7 percent as at the reporting date (December 31, 2017: 39.5 percent). The prior-year figure is different from the figure of 30.9 percent reported in the 2017 opportunity and risk report because the securities business is now no longer included in the analysis.

In the Bank sector's **traditional lending business**, most of the collateralized lending volume (85 percent as at December 31, 2018, which was unchanged compared with the prior-year reporting date) was accounted for by lending secured by charges over physical assets such as land charges, mortgages, and registered ship and aircraft mortgages. These types of collateral are particularly important for BSH, DZ HYP, and DVB. In contrast, charges over physical assets are of lesser importance at DZ BANK because DZ BANK bases its lending decisions primarily on borrower credit quality.

FIG. 30 – BANK SECTOR: COLLATERALIZED LENDING VOLUME, BY TYPE OF COLLATERAL

	Traditional lending business		Derivatives and money market business		Total	
€ billion	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Guarantees, indemnities, risk subparticipation	6.4	6.7	0.3	0.2	6.7	6.9
Credit insurance	3.7	3.1	-	-	3.7	3.1
Land charges, mortgages, registered ship and aircraft mortgages	103.5	98.7	-	-	103.5	98.8
Pledged loans and advances, assignments, other pledged assets	6.0	5.3	-	-	6.0	5.4
Financial collateral	1.3	1.4	0.1	0.2	1.3	1.6
Other collateral	0.2	0.3	-	-	0.2	0.3
Collateralized lending volume	121.1	115.6	0.4	0.5	121.5	116.1
Gross lending volume	289.3	279.8	16.6	14.2	305.9	294.0
Uncollateralized lending volume	168.2	164.2	16.2	13.7	184.4	177.9
Collateralization rate (%)	41.9	41.3	2.4	3.4	39.7	39.5

At €12.6 billion, **DZ BANK's** collateralized lending volume as at December 31, 2018 was marginally up year on year (December 31, 2017: €12.3 billion). The collateralization rate of 7.8 percent at the reporting date was the same as it had been a year earlier. Because the securities business is now no longer included in the analysis, the prior-year figure is again different in this case from the figure of 6.2 percent reported in the 2017 opportunity and risk report.

8.6.8 Securitizations

The Bank sector's asset-backed securities (ABS) portfolio is predominantly held by DZ BANK and DZ HYP. This portfolio at **Bank sector** level had a fair value of €2,644 million as at the reporting date (December 31, 2017: €2,796 million). The fair value for **DZ BANK** as at December 31, 2018 came to €2,141 million (December 31, 2017: €2,048 million).

These figures included the ABS wind-down portfolio from the period before the financial crisis with a fair value of €1,353 million (December 31, 2017: €1,854 million) at **Bank sector** level and €851 million (December 31, 2017: €1,106 million) in respect of **DZ BANK**. The changes in the wind-down portfolio in 2018 were largely within expectations, both in terms of the contraction of the portfolio as a result of redemptions and in terms of the overall performance of the portfolio.

In addition, **DZ BANK** acts as a sponsor in ABCP programs that are funded by issuing money market-linked ABCP or liquidity lines. The ABCP programs are made available for DZ BANK customers who then securitize their own assets via these companies.

As at December 31, 2018, the fair value of the securitization exposures arising from **DZ BANK's** activities in which it acts as a sponsor amounted to €1,398 million (December 31, 2017: €1,022 million). The increase in the exposures was due new business and to fluctuations in the drawdown of liquidity lines.

8.7 Credit portfolios with increased risk content

The credit portfolios with increased risk content are analyzed separately because of their significance for the risk position. The figures presented here are included in the above analyses of the total lending volume.

8.7.1 Loans and advances to borrowers in eurozone periphery countries

As at December 31, 2018, loans and advances to borrowers in the countries directly affected by the **economic divergence in the eurozone** attributable to the **Bank sector** and to **DZ BANK** amounted to €7,355 million (December 31, 2017: €7,949 million) and €2,165 million (December 31, 2017: €2,302 million) respectively. The decrease was attributable to falls in the fair value of Spanish and Italian bonds held by DZ HYP.

As loans and advances to counterparties in Greece have been scaled back, the credit exposure for this country is no longer reported separately. Consequently, the total lending volume in respect of the eurozone periphery countries as at December 31, 2017 disclosed in this opportunity and risk report differs from the corresponding amount in the 2017 opportunity and risk report.

Fig. 31 shows the borrower structures of the entities in the Bank sector for the eurozone periphery countries by credit-risk-bearing instrument.

8.7.2 Loans and advances to borrowers in the UK

Loans and advances from entities in the **Bank sector** to borrowers in the UK amounted to €8,069 million as at December 31, 2018 (December 31, 2017: €8,746 million). As at December 31, 2018, the breakdown of the lending volume by credit-risk-bearing instrument was as follows (corresponding figures as at December 31, 2017 in parentheses):

– Traditional lending business: €3,143 million (€4,251 million)
– Securities business: €2,041 million (€2,266 million)
– Derivatives and money market business: €2,884 million (€2,229 million).

DZ BANK's lending volume in the UK as at December 31, 2018 amounted to €4,470 million (December 31, 2017: €4,632 million).

The principal reason for the increased credit risk is that the quality of the lending volume to individual UK counterparties is adversely impacted by country-specific events (**Brexit**) even though the creditworthiness of the individual counterparties themselves is not impaired. A disorderly, hard ('no deal') Brexit would have more negative consequences than an orderly Brexit (exit with a 'deal').

8.7.3 Shipping finance and offshore finance

Business background

Within the DZ BANK Group's **Bank sector**, the shipping finance business is mainly operated by DVB and, to a much lesser degree, by DZ BANK. DVB also has offshore finance business in its credit portfolio. At DVB and DZ BANK, the lending volume associated with shipping finance comprises loans and advances to customers, guarantees and indemnities, irrevocable loan commitments, and derivatives.

FIG. 31 – BANK SECTOR: LOANS AND ADVANCES TO BORROWERS IN EUROZONE PERIPHERY COUNTRIES

	Traditional lending business[1]		Securities business		Derivatives and money market business		Total	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Portugal	62	80	1,026	1,035	-	-	1,089	1,115
of which: public sector	-	-	925	919	-	-	925	919
of which: non-public sector	62	80	101	116	-	-	164	196
of which: financial sector	1	-	-	-	-	-	1	-
Italy	148	158	2,847	3,158	70	19	3,065	3,336
of which: public sector	-	-	2,599	2,809	-	-	2,599	2,809
of which: non-public sector	148	158	248	349	70	19	465	526
of which: financial sector	32	32	59	121	70	19	161	172
Spain	222	232	2,850	3,200	129	67	3,201	3,499
of which: public sector	13	19	1,859	2,094	-	-	1,872	2,113
of which: non-public sector	210	212	991	1,106	129	67	1,330	1,386
of which: financial sector	28	31	364	380	126	65	518	477
Total	432	470	6,723	7,393	199	87	7,355	7,949
of which: public sector	13	19	5,383	5,821	-	-	5,396	5,841
of which: non-public sector	419	450	1,341	1,571	199	87	1,959	2,108
of which: financial sector	61	63	423	502	196	84	680	649

1 Unlike the other presentations of lending volume, traditional lending business in this case includes long-term equity investments.

At **DVB**, the criteria for granting **shipping loans** include the credit standing of the ship owner and operator, the quality and recoverability of the shipping asset itself, the cash flow that the borrower can generate with the ship concerned to repay the debt, and the extent to which the ship involved can be remarketed. DVB generally only enters into shipping finance arrangements for which the financed ship can be used as collateral.

DVB's offshore credit portfolio consists of various financing arrangements with broad links to the shipping sector. The portfolio includes finance for drilling platforms, drill ships, offshore construction ships, and supply ships for oil platforms.

DZ BANK offers shipping finance as part of its joint credit business with the local cooperative banks. Shipping finance in the narrow sense refers to capital investment in mobile assets involving projects that are separately defined, both legally and in substance, in which the borrower is typically a special-purpose entity whose sole business purpose is the construction and operation of ships. In such arrangements, the debt is serviced from the cash flows generated by the ship. The assessment of the credit risk is therefore based not only on the recoverability of the asset, but also in particular on the capability of the ship to generate earnings.

To reduce risk, finance provided by DZ BANK must normally be secured by a first mortgage on the vessel and the assignment of insurance claims and proceeds. A distinction is made between shipping finance in the narrow sense and finance provided for shipyards and shipping companies. The following disclosures for DZ BANK relate solely to shipping finance in the narrow sense.

Crisis management

In the shipping finance business, an oversupply of tonnage continues to have a detrimental impact on asset values and customer credit quality in some cases. To add to the problems, the low price of oil is adversely affecting global offshore oil production, leading to significantly lower demand for supply ships and other floating offshore equipment. This trend is accompanied by a rising number of laid-up offshore vessels. Although there have been some signs of stabilization and improvement, the market situation remains challenging, above all for **DVB**.

DVB has initiated various corrective measures in response to the crisis. For example, the lending policy for **shipping finance** has been considerably tightened. Non-performing shipping loans have also been classified as no longer consistent with the corporate strategy. This non-core-asset (NCA) portfolio has been transferred to an internal workout unit with the aim of scaling back the assets in a way that preserves value on the basis of the NCA strategy adopted by the DVB Board of Managing Directors.

The **offshore finance** market remains difficult and is not expected to bounce back significantly in the short term. All offshore finance has therefore been moved to the NCA portfolio. No further new business has been taken on in the offshore segment since 2017.

DVB is aiming to continue to scale back the NCA shipping portfolio and the offshore finance portfolio (while preserving value as far as possible) during 2019 and subsequent years. The section below therefore analyzes in detail only the NCA portion of DVB's shipping portfolio that is affected by a greater level of risk. The prior-year figures have been restated accordingly and thus cannot be compared with the lending volume for the entire shipping portfolio presented in the 2017 opportunity and risk report.

At **DZ BANK**, shipping finance is deemed to be non-performing if it has been rated between 5A and 5E on the VR master scale. DZ BANK aims to secure and optimize these non-performing exposures within its management system for handling non-performing loans.

Shipping finance lending volume

As at December 31, 2018, the **Bank sector's** shipping finance portfolio had a total value of €8,692 million (December 31, 2017: €10,180 million). The breakdown of the lending volume between the two management units as at December 31, 2018 was as follows (corresponding figures as at December 31, 2017 in parentheses):

– DVB: €8,084 million (€9,523 million), of which €6,922 million (€9,523 million) is core business not classified as non-performing
– DZ BANK: €608 million (€657 million), of which €313 million (€327 million) is business not classified as non-performing.

The lending volume of **DVB** shipping finance exposed to heightened risk (NCA portfolio) consists solely of traditional lending business. It declined from €2,238 million as at December 31, 2017 to €1,162 million as at December 31, 2018, a year-on-year decrease of 48 percent. This significant decrease was attributable, among other things, to redemptions and (partial) workout of individual large-volume exposures. The breakdown by country group of DVB's NCA shipping finance portfolio as at December 31, 2018 was as follows (corresponding figures as at December 31, 2017 in parentheses):

- Germany: €136 million (€267 million)
- Other industrialized countries: €820 million (€1,414 million)
- Advanced economies: €150 million (€382 million)
- Emerging markets: €56 million (€175 million).

As at December 31, 2018, the NCA shipping finance portfolio included 135 financed vessels (December 31, 2017: 262 vessels). The average exposure as at the reporting date was €25.8 million (December 31, 2017: €28.3 million) and the largest single exposure was €114.6 million (December 31, 2017: €189.2 million).
The largest proportion of the NCA shipping finance portfolio was attributable to the financing of tankers. As at December 31, 2018, this proportion had risen to 40 percent of DVB's total NCA shipping finance volume as a consequence of the disproportionate level of redemptions in other shipping segments. This relative increase related mainly to the crude oil tanker segment and pro rata to all other types of tanker. The portfolio was almost fully collateralized in compliance with DVB strategy.

At **DZ BANK**, shipping loans with a value of €295 million were classified as non-performing as at December 31, 2018 (December 31, 2017: €330 million). This lending consisted almost entirely of traditional lending business. Broken down by type of ship, DZ BANK's non-performing portfolio was focused mainly on multifunctional merchant vessels. In terms of carrying capacity, these ships were almost exclusively small- to medium-sized vessels. As in 2017, DZ BANK's shipping finance portfolio in 2018 was mainly concentrated in Germany but broadly diversified by type of vessel, borrower, charterer, and shipping activity.

Offshore finance lending volume

As at December 31, 2018, the Bank sector's lending volume in the offshore finance business, which is attributable exclusively to **DVB** and is classified as traditional lending business, amounted to €1,335 million (December 31, 2017: €1,766 million).

8.8 Volume of non-performing loans

The fall in the volume of non-performing loans reported for the **Bank sector** from €6.2 billion to €5.0 billion in conjunction with the increase in the total lending volume from €375.2 billion to €378.9 billion caused the NPL ratio to go down year on year to 1.3 percent at the end of 2018 (December 31, 2017: 1.7 percent).

At **DZ BANK**, there was a decline in the volume of non-performing loans, which went down from €2.2 billion as at December 31, 2017 to €1.9 billion as at the 2018 balance sheet date. As this change was accompanied by an increase in the overall lending volume from €197.2 billion to €198.3 billion, the NPL ratio fell slightly to 0.9 percent (December 31, 2017: 1.1 percent).

Fig. 32 shows key figures relating to the volume of non-performing loans.

FIG. 32 – BANK SECTOR: KEY FIGURES FOR THE VOLUME OF NON-PERFORMING LOANS

	Bank sector		DZ BANK	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Total lending volume (€ billion)	378.9	375.2	198.3	197.2
Volume of non-performing loans (€ billion)[1]	5.0	6.2	1.9	2.2
Balance of loss allowances (€ billion)	2.7	3.1	1.2	1.3
Loss allowance ratio (%)[2]	0.7	0.8	0.6	0.6
Coverage ratio (%)[3]	54.5	50.1	65.2	59.1
NPL ratio (%)[4]	1.3	1.7	0.9	1.1

1 Volume of non-performing loans excluding collateral.
2 Balance of loss allowances as a proportion of total lending volume.
3 Balance of loss allowances as a proportion of the volume of non-performing loans.
4 Volume of non-performing loans as a proportion of total lending volume.

8.9 Prior-year disclosures in accordance with IFRS 9

The initial application of IFRS 9 in 2018 has led to changes in the presentation of credit-risk-related disclosures in accordance with IFRS 7. Further details can be found in section 2.2.4. The transitional rules for the initial application of IFRS 9 provide that the prior-year comparative disclosures in 2018 are to be presented in accordance with the requirements of the former IFRS 7 for the last time. This applies to the following credit-risk-related disclosures with figures as at December 31, 2017:

– Lending volume neither impaired nor past due in accordance with IFRS 7.36(c): €369.1 billion
– Lending volume past due but not impaired in accordance with IFRS 7.37(a): €785 million.

8.10 Risk position

The risk capital requirement (including capital buffer requirement) for credit risk is based on a number of factors, including the size of single-borrower exposures, individual ratings, and the industry sector of each exposure.

As at December 31, 2018, the credit value-at-risk including capital buffer in the **Bank sector** was €5,541 million (December 31, 2017: €5,772 million) with an upper loss limit of €8,238 million (December 31, 2017: €7,628 million), which was not exceeded at any time during the year under review.

The decline in the credit value-at-risk including capital buffer stemmed mainly from the merged portfolio account at DZ HYP.

As at December 31, 2018, the credit value-at-risk including capital buffer at **DZ BANK** was €2,166 million (December 31, 2017: €2,152 million) with an upper loss limit of €2,674 million (December 31, 2017: €2,700 million).

The credit values-at-risk including capital buffer for the Bank sector and for DZ BANK were within the applicable upper loss limits at all times during the course of 2018.

Fig. 33 shows the credit value-at-risk together with the average probability of default and expected loss. Because of the breakdown by credit-risk-bearing instrument, the risk capital requirement is presented without the capital buffer requirement.

The risk capital required in the **Bank sector** and at **DZ BANK** for credit portfolios exposed to increased credit risk is shown in Fig. 34, again without the capital buffer requirement.

FIG. 33 – BANK SECTOR: FACTORS DETERMINING THE CREDIT VALUE-AT-RISK

	Average probability of default (%)				Expected loss (€ million)				Credit value-at-risk[1] (€ million)			
	Bank sector		DZ BANK		Bank sector		DZ BANK		Bank sector		DZ BANK	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Traditional lending business	0.5	0.6	0.2	0.2	405	426	122	113	2,568	2,282	950	926
Securities business	0.2	0.2	0.2	0.2	49	66	28	37	1,511	1,636	226	345
Derivatives and money market business	0.1	0.1	0.1	0.1	10	10	9	9	453	327	365	245
Total					464	501	159	159	4,532	4,245	1,541	1,515
Average	0.4	0.4	0.2	0.2								

1 Excluding capital buffer requirement.

Not relevant

FIG. 34 – BANK SECTOR: CREDIT VALUE-AT-RISK[1] FOR CREDIT PORTFOLIOS WITH INCREASED RISK CONTENT

	Bank sector		DZ BANK	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Eurozone periphery countries portfolio	1,079	1,089	14	13
United Kingdom portfolio (Brexit)	265	207	130	126
Shipping finance portfolio[2]	66	59	38	48
Offshore finance portfolio	118	99		

1 Excluding capital buffer requirement.
2 DVB: NCA portion.

Not relevant

As the credit exposure for Greece is no longer reported separately, the total credit value-at-risk in respect of the **eurozone periphery countries** as at December 31, 2017 also differs from the corresponding amount in the 2017 opportunity and risk report.

Compared with December 31, 2017, the credit value-at-risk for the Bank sector entities' exposure in the peripheral countries of the eurozone decreased marginally.

As at December 31, 2018, the credit value-at-risk for the Bank sector entities' exposure in the **UK** remained at a moderate level compared with the position as at the prior-year reporting date because the credit quality of most of the individual exposures did not present any problem.

The total credit value-at-risk reported for the **shipping finance portfolio** as at December 31, 2017 is different from the corresponding figure reported in the 2017 opportunity and risk report because only the NCA portion of DVB's shipping finance portfolio associated with increased risk is now included in the analysis. The credit value-at-risk for the overall shipping finance portfolio in the Bank sector amounted to €194 million as at December 31, 2018 (December 31, 2017: €206 million). These figures consist of the DVB core business and DZ BANK business, in either case not classified as non-performing.

The credit value-at-risk in the Bank sector for shipping finance and offshore finance stemmed primarily from DVB. The year-on-year decline in the credit value-at-risk for the shipping finance portfolio arose mainly because of the fall in the lending volume at DZ BANK.

9 Equity investment risk

9.1 Definition and business background

Equity investment risk is defined as the risk of losses arising from negative changes in the fair value of that portion of the long-term equity investments portfolio for which the risks are not included in other types of risk.

In the Bank sector, equity investment risk arises primarily at DZ BANK, BSH, and DVB.

The long-term equity investments in the banking book are held largely for strategic reasons and normally cover markets, market segments, or parts of the value chain in which the entities of the Bank sector themselves or the cooperative banks are not active. These investments therefore support the sales activities of the cooperative banks or help reduce costs by bundling functions. The investment strategy is continuously aligned with the needs of cooperative financial network policy.

9.2 Risk strategy and responsibility

Risk strategy requirements must be observed in the management of long-term equity investments. Such management is subject to the principle that equity investment risk (measured as risk capital requirement) may be taken on only if this risk is considered together with the associated opportunities and only if the risk remains below the existing upper loss limits.

Decisions on whether to acquire or dispose of **long-term equity investments** are made by the Board of Managing Directors of the entities in the Bank sector in consultation with the relevant committees.

At DZ BANK, the Strategy & Group Development division is responsible for **supporting these investments**, whereas at BSH the task falls within the scope of the Central Services/Policy/International division and the Controlling and Investment Management division. At DVB, the investments are the responsibility of the Accounting and Legal Affairs departments.

Equity investment risk is **measured** and **monitored** at Bank sector level by DZ BANK. Details are reported within the DZ BANK Group's overall risk report.

9.3 Risk management

The carrying amounts of the long-term equity investments are regularly tested for possible impairment in the last quarter of the financial year. If there are any indications during the course of the year of possible impairment, more frequent impairment tests are also carried out. In the impairment tests, the carrying amounts of the long-term equity investments are compared against the amount that could be realized on the market on the same date.

The risk capital requirement for the vast majority of the long-term equity investments in the **Bank sector** including **DZ BANK** is determined using a Monte Carlo simulation. In this method, portfolio concentrations in sectors and individual counterparties are taken into account by simulating industry-wide and individual investment-related risk factors.

The risk capital requirement is influenced, in particular, by the market values of the long-term equity investments, the volatility of the market values, and the correlations between the market values, with market price fluctuations mainly derived from reference prices listed on an exchange.

At **DVB**, the risk capital requirement for long-term equity investments in the transport sector is determined using an earnings-at-risk approach.

The measurement of equity investment risk takes into account both the equity-accounted investments and the fully consolidated investees. As part of acquisition accounting and during the course of preparing the consolidated financial statements, the investment carrying amounts for consolidated subsidiaries are offset against the relevant share of net assets. Consequently, the investment carrying amounts disclosed in the notes to the consolidated financial statements are considerably lower than the carrying amounts used for determining risk.

9.4 Specific risk factors

If a future impairment test determines that the carrying amount of long-term equity investments reported on the balance sheet is significantly impaired, this could have an adverse impact on the financial performance and financial position of the DZ BANK Group and DZ BANK.

In the case of non-controlling interests, there is a risk that key information may not be available or cannot be obtained promptly by virtue of the fact that the investment is a minority stake; this would lead to an increase in the impairment risk.

9.5 Risk position

The **carrying amounts of long-term equity investments** in the **Bank sector** relevant for the measurement of equity investment risk amounted to €2,776 million as at December 31, 2018 (December 31, 2017: €2,714 million). As at December 31, 2018, the carrying amounts of the long-term equity investments of **DZ BANK** totaled €1,697 million (December 31, 2017: €1,588 million).

As at the reporting date, the **risk capital requirement including capital buffer requirement** for equity investment risk in the **Bank sector** was measured at €1,091 million, which was lower than the corresponding figure at the end of 2017 of €1,093 million. The upper loss limit was €1,341 million (December 31, 2017: €1,422 million). The upper loss limit was not exceeded at any time in 2018.

As at December 31, 2018, the **risk capital requirement including capital buffer requirement** for equity investment risk at **DZ BANK** amounted to €685 million (December 31, 2017: €618 million). The upper loss limit at December 31, 2018 was €800 million (December 31, 2017: €650 million). The upper loss limit was exceeded for a short time in the first quarter of 2018 when the enterprise value of one long-term equity investment was updated. The breach of the limit was rectified in the second quarter by reallocating upper loss limits.

10 Market risk

10.1 Definition and business background

Market risk in the Bank sector including DZ BANK comprises market risk in the narrow sense of the term, and market liquidity risk. Market risk arises mainly in connection with BSH, DVB, DZ HYP, and UMH in addition to DZ BANK.

Market risk in the narrow sense of the term – referred to below as market risk – is the risk of losses on financial instruments or other assets arising from changes in market prices or in the parameters that influence prices. Depending on the underlying influences, market risk can be broken down for the most part into interest-rate risk, spread risk and migration risk, equity risk, fund price risk, currency risk, and asset-management risk. Commodity risk is not material for the entities in the Bank sector. This type of market risk is therefore not covered below.

Market risks arise in particular from DZ BANK's customer-account trading activities, DZ BANK's cash-pooling function for the cooperative financial network, and from the lending business, real-estate finance business, building society operations, funds business, capital markets business, investments, and issuing activities of the various management units. Spread risk, including migration risk, is the most significant type of market risk for the Bank sector. Market risk also arises from the assets and liabilities in connection with direct pension commitments.

Market liquidity risk is the risk of loss arising from adverse changes in market liquidity, for example as a result of a reduction in market depth or of market disruption. The consequences are that assets can only be liquidated in markets if they are discounted and that it is only possible to carry out active risk management on a limited basis. Market liquidity risk arises primarily in connection with securities already held in the portfolio as well as funding and money market business.

10.2 Risk strategy

10.2.1 General market risk strategy in the Bank sector

The following principles for managing market risk apply to DZ BANK and its subsidiaries:

- Market risk is only taken on to the extent that it is necessary to facilitate attainment of business policy objectives.
- The assumption of market risk is only permitted within the existing limits and only provided that it is considered together with the associated opportunities.
- Statutory restrictions, provisions in the Articles of Association, or other limitations enshrined in the risk strategy that prohibit the assumption of certain types of market risk for individual management units are observed.
- Market liquidity risk is consciously assumed following an analysis that takes into account the prevailing market liquidity.

10.2.2 Market risk strategy at DZ BANK

For regulatory purposes, DZ BANK is classed as a trading book institution. It conducts trading activities as part of its role as the central institution in the cooperative financial network and – on this basis – as a corporate bank for customers outside the cooperative financial network. As part of a range of services for the cooperative financial network, DZ BANK provides investment and risk management products, platforms, research, and expertise, and acts as an intermediary transforming small deposits into larger-scale lending. DZ BANK also provides facilities ensuring risk transfer from the cooperative financial network and cash pooling within the cooperative financial network. DZ BANK's trading strategy is aimed at generating profits primarily from customer margins and structuring margins.

Unmatched market-risk positions from primary business activities arise principally in connection with customer business and from holding securities portfolios for trading on behalf of customers. The risks predominantly comprise **spread risk and migration risk**. To support its liquidity management function as a central institution and corporate bank, and on behalf of the DZ BANK Group, DZ BANK also maintains liquidity portfolios in which it holds – within the relevant limits – bonds eligible for central bank borrowing. It also holds portfolios of bonds and credit derivatives for the purposes of managing credit risk.

DZ BANK manages market risk arising from its lending business, own issues, and from holding issues from the cooperative banks and subsidiaries.

The risks arising in connection with the assets and liabilities associated with direct **pension commitments** form part of the daily risk management process and are also regularly assessed by a DZ BANK investment committee. Corrective action to eliminate risk is taken where necessary. Changes in legislation, decisions by the courts, or accounting standards may make it necessary to adjust existing provisions for pensions and other post-employment benefits.

10.2.3 Market risk strategy at BSH

For regulatory purposes, BSH is classed as an institution with a banking book and is exposed to market risk primarily in the form of interest-rate risk, spread risk, migration risk, and fund price risk. **Interest-rate risk** arises mainly from its customer business (in particular building society operations). Interest-rate risk comprises traditional interest-rate risk, for example as a result of interest rates in building society operations for which BSH has given a firm commitment, and the risk from customer rights enshrined in home savings contracts, the exercise of which may partly depend on interest rates. Traditional interest-rate risk is managed mainly through the maturities in the investment portfolio. The risk from customer rights is controlled through the design of home savings rates. The objective is to manage the interest-rate risk within the existing limits, which are rising slightly.

Spread risk and migration risk arise at BSH from investing surplus home savings deposits in securities. These risks are consciously assumed within the framework of a conservative investment policy and it is planned to keep them at a similar level, even following further diversification in the range of investments.

10.2.4 Market risk strategy at DVB

For regulatory purposes, DVB is classified as a trading book institution, although the exposures in the trading book are effectively closed and are therefore deemed not significant. DVB is not entering into any new business in its trading book. The main risks in the banking book are interest-rate risk and currency risk. Generally speaking, DVB avoids taking on market risk exposures as far as possible, provided that this can be justified from an economic perspective.

10.2.5 Market risk strategy at DZ HYP

For regulatory purposes, DZ HYP is also classed as an institution with a banking book. DZ HYP's business model means that the main risks relevant to its management of market risk are spread risk and migration risk.

DZ HYP consciously takes on **spread risk and migration risk**. As DZ HYP is classed as a banking book institution, it does not engage in own-account trading in the sense of exploiting short-term fluctuations in interest rates and prices.

10.2.6 Market risk strategy at UMH

The main market risks faced by UMH are fund price risk and asset-management risk.

Fund price risk arises if UMH or its subsidiaries acquire their own investment funds for investment purposes. UMH and its subsidiaries also acquire units in their own newly launched funds in order to provide initial funding for the funds, but not with the intention of generating short-term trading profits. In addition, pledged employee investments are invested in Union Investment funds in order to cover pension entitlements. Fund price risk is not broken down into other subtypes of market risk for management purposes.

Asset-management risk occurs if UMH enters into obligations to pay additional capital in connection with products offering long-term guarantees. Any shortfall in a contractually agreed minimum capital value on a maturity date triggers a payment obligation on the part of the fund provider, giving rise to these obligations to pay additional capital.

10.3 Organization, responsibility, and risk reporting

10.3.1 Organization and responsibility

As a trading book institution, **DZ BANK** generally manages market risk on a decentralized, portfolio basis. The traders responsible for managing a portfolio bear responsibility for its risk and performance.

Market risk arising at **BSH** is managed at overall bank level and exclusively in the banking book. Market risk arising at **DVB**, **DZ HYP**, and **UMH** is managed centrally by specialist committees at each institution. The committees provide guidance for treasury activities based on market risk reporting. Committee decisions are implemented operationally by the portfolio managers and treasury departments at each entity.

10.3.2 Risk reporting

Key figures for **market risk** are submitted at **sector level** to the Group Risk and Finance Committee within the overall risk report for the DZ BANK Group. DZ BANK is informed of any limit overruns at management unit level by means of an ad-hoc reporting system.

At **DZ BANK**, **BSH**, **DVB**, and **DZ HYP**, Risk Controlling uses the internal reporting system to provide the portfolio managers and the senior managers or relevant committees responsible for risk management and risk control with daily, weekly, or monthly market risk updates. Twice a month, **UMH** calculates the risk attaching to its own-account investing activities and reports this risk to its Board of Managing Directors and the committee responsible for managing own-account investing. The other key figures relating to market risk are reported in UMH's quarterly risk report.

10.4 Management of market risk

10.4.1 Measurement of market risk

Measurement of value-at-risk

DZ BANK, BSH, DVB, DZ HYP, and UMH determine market risk from the short-term (operating) perspective using the **value-at-risk** method.

Value-at-risk is a key performance indicator that describes the maximum expected loss for a given probability (confidence level) and within a specified holding period for the positions under normal market conditions. The model does not reflect the maximum potential loss that could be incurred in extreme market situations, but is based on observed historical market scenarios over periods of 250 trading days (DZ BANK, DVB, and DZ HYP), 1,500 trading days (BSH), and 1 year (own-account investments of UMH).

DZ BANK, **BSH**, DVB, and **DZ HYP** generate market scenarios using a **historical simulation**. Holding periods of 1 day and 10 days are used.

UMH uses **Monte Carlo simulation** to determine the market risk arising from its own-account investing.

This measurement method provides a 'look through' to the individual securities in the funds. The methods used to quantify asset-management risk take into account the special features of the products concerned. Contractually agreed obligations to make additional capital payments may arise in connection with subsidized pension products (Riester products) or guarantee funds. The economic capital requirement is calculated as value-at-risk with an assumed holding period of 1 year and a confidence level of 99.9 percent.

The risk arising from pension products is quantified using Monte-Carlo simulation of any anticipated obligation to provide additional capital in connection with contracts maturing over the next year and in connection with any impending loss from the difference between investment assets and the present value of guarantees.

A distinction is made between two types of guarantee fund: dynamic and static. Dynamic guarantee funds are actively managed using a dynamic capital preservation strategy. This management mechanism is reproduced to a large degree in the Monte Carlo simulation used to quantify risk. In the case of static guarantee funds, the economic capital requirement is calculated using the IRB approach on the basis of the credit risk contained in the funds.

For **DZ BANK**, **BSH**, **DVB**, and **DZ HYP**, calculations are carried out to determine an overall value-at-risk and – where relevant – separate values-at-risk for interest-rate risk, spread risk, equity risk, and currency risk, broken down into trading portfolios and non-trading portfolios. The risk in the banking book is included in the value-at-risk for the non-trading portfolios. Migration risk does not represent a separate type of risk in the short-term perspective. The risk arising from changes in credit ratings is covered by spread risk in this case.

An overall value-at-risk is calculated for the own-account investing activities carried out by **UMH**. To determine risk values at the level of the Bank sector, DZ BANK also uses a central, sector-wide risk model, which quantifies market risk for the Bank sector taking into account the effects of concentration and diversification.

Measurement of the risk capital requirement

To quantify market risk from a longer-term (strategic) perspective of 1 year, the **credit institutions** in the Bank sector regularly calculate the capital requirement for market risk and compare it with the associated upper loss limit. Migration risk is also included in this process.

Refinement of risk measurement

DZ BANK fine-tuned the central, sector-wide market-risk model in the year under review as planned and then put it into operation in February 2018. Following completion of a period up the end of the year under review when systems were operated in parallel, the key figures determined with this model have been used since the beginning of 2019 to manage market risk in the Bank sector and at DZ BANK.

10.4.2 Backtesting and stress tests

The methods used by the entities in the Bank sector to quantify market risk on a continuous basis are subjected to **backtesting**, the purpose of which is to check the predictive quality of these methods. Changes in the value of portfolios on each trading day are usually compared against the value-at-risk calculated using risk modeling.

Risks arising from extreme market situations are primarily recorded using **stress tests**. The crisis scenarios underlying the stress tests include the simulation of significant fluctuations in risk factors and serve to highlight potential losses not generally recognized in the value-at-risk approach. Stress tests are based on extreme market fluctuations that have actually occurred in the past together with crisis scenarios that – regardless of market data history – are considered to be economically relevant. The crisis scenarios used in this case are regularly reviewed to ensure they are appropriate. The following are deemed to be risk factors: interest-rate risk, spread risk, migration risk, equity risk, and currency risk.

10.4.3 Management of limits for market risk

Value-at-risk is managed at **DZ BANK**, **BSH**, **DVB**, and **DZ HYP** using a limit system appropriate to the portfolio structure. This system limits the risks assumed in parts of the group as well as any losses that may arise during the year.

Within the trading divisions of **DZ BANK** and the treasury at **DZ HYP**, the management of risk based on value-at-risk is supported by a limit system structured around sensitivities and scenarios, and by stress test limits. At DZ HYP, the treasury's system of limits is based on value-at-risk and sensitivities.

Market risk incurred by **UMH** is managed and limited directly at the level of its risk capital requirement.

10.4.4 Mitigating market risk

Market risk hedging

As part of the decentralized management of portfolios, market risk at **DZ BANK** is hedged by portfolio managers. At **DVB** and **DZ HYP**, it is hedged by treasury.

Risks are hedged at **DZ BANK** either through internal transactions with the front-office trading unit responsible for the relevant product or through external exchange-based and OTC transactions.

At **BSH**, the asset-liability committee decides whether to hedge market risk via OTC transactions.

DVB and **DZ HYP** exclusively use external exchange-based and OTC transactions to hedge against market risk, although the OTC transactions used for hedging are primarily with counterparties within the Bank sector.

As soon as action is required to reduce the market risk arising from own-account investing at **UMH**, changes are made to the composition of the fund positions in its own-account investments. For this reason, UMH is only exposed to fund price risk.

Hedge effectiveness

The measurement of market risk at **DZ BANK** is based on the inclusion of the individual positions subject to market risk. There is therefore no need to monitor the economic effectiveness of hedges.

At **DVB** and **DZ HYP**, the effectiveness of any hedging is reviewed and reported daily in terms of both risk and performance. The report covers the entire DVB or DZ HYP book. Derivatives in various forms are used to mitigate market risk. These are predominantly plain vanilla products.

10.4.5 Managing the different types of market risk

Management of interest-rate risk

At **DZ BANK**, interest-rate risk arises from trading in interest-rate-sensitive products on behalf of customers, from structuring its own issues for trading on behalf of customers, and from exposures in connection with liquidity management. The risks arising from trading on behalf of customers are dynamically hedged within the set limits and the risks from liquidity management are generally minimized. At DZ BANK, interest-rate risk also arises from the assets and liabilities in connection with direct pension commitments.

BSH is subject to particular interest-rate risks arising from its collective home savings business since it gives customers a binding interest-rate guarantee both for savings and for the loan element that may be drawn down in the future. BSH uses a simulation model based on the behavior of building society customers to measure interest-rate risk. The model forecasts the volume of collective assets held, taking into consideration planned new business and different customer options.

Interest-rate risk at **DVB** is generally eliminated by the use of interest-rate swaps. In this process, fixed-interest asset and liability portfolios are transformed into floating-rate portfolios. There are no plans to change this strategy going forward. It is therefore reasonable to assume that interest-rate risk will remain largely steady. However, the introduction of the multi-yield-curve approach adds further risk factors to the measurement of interest-rate risk. These factors could lead to somewhat greater fluctuations than before, for example in the event of a widening of basis spreads.

Management of spread risk and migration risk

Spread risk and migration risk on all financial instruments subject to credit spread risk are incorporated into risk capital management. An upper loss limit and operational limits together with a process for monitoring them were introduced in order to ensure that the risk capital for these two forms of market risk is managed effectively.

At **DZ BANK**, spread risk and migration risk arise from holding securities portfolios for trading on behalf of customers, from trading in its own issues on behalf of customers, and from the liquidity management function that the bank carries out for the Bank sector. The risks taken on as part of the trading on behalf of customers are proactively managed, although migration risk forms part of the management of the strategic risk capital requirement rather than the management of the short-term, operating value-at-risk. In liquidity management, the risk tends to be limited to that which is absolutely necessary to allow DZ BANK to carry out its responsibilities as a central institution and in connection with the liquidity management function.

Spread risk and migration risk arise at **BSH** from investing surplus home savings deposits in securities.

The resulting risk is managed in accordance with a conservative investment policy.

Spread risk and migration risk arise at **DZ HYP** largely from holding securities. The risks are included in an internal reporting system and are monitored on a daily basis. Migration risk is not covered by this daily monitoring. Following the merger that created DZ HYP, the entity has continued the policy of not taking on new spread risk or migration risk and of only incurring these risks if it is necessary as part of the management of cover assets.

Management of equity risk

Equity risk is only of minor significance at **DZ BANK**. It essentially arises from transactions on behalf of customers involving equities, equity and equity-index derivatives, investment funds and alternative investments, warrants, and investment certificates. It is managed by using equities, exchange-traded futures and options, and OTC derivatives.

At **DVB**, equities exposures arise only to a small degree as part of restructuring. There is no active trading in equities exposures at DVB.

Management of currency risk

Likewise, currency risk is only of minor significance at **DZ BANK**. It mainly arises from funding transactions, issuing activities, the investment book, ABS exposures, the management of Tier 1 and Tier 2 capital, customer business involving currency products and derivatives, securities portfolios in foreign currency, and the underwriting and onward placement of third-party issuances. Currency risk is managed by using derivatives within the allotted limits.

At **DVB**, currency risk arises from the credit portfolio, which consists for the most part of US dollar loans. The treasury manages the open foreign exchange positions and therefore the currency risk.

Management of fund price risk

Fund price risk largely arises at **DZ BANK** in connection with business conducted on behalf of customers. Funds are also used to cover defined benefit obligations. These funds are broken down into their constituent parts for the purposes of calculating risk and are therefore no longer treated as fund exposures. The interest-rate risk, spread risk, and currency risk determined for the constituent parts is managed within existing limits.

Fund price risk arises at **BSH** from the funds used to cover defined benefit obligations. The resulting risk is consciously accepted and limited by means of investment guidelines. In addition, surplus home savings deposits are invested in special funds. These funds are broken down into their constituent parts for risk management purposes and not treated as fund exposures. The determined risk is managed within existing limits in the same way as other types of risk.

UMH is exposed to fund price risk because it invests its own resources in funds and also invests pledged employee investments in order to cover pension entitlements. While market risk arising from the funds it holds is measured by ‘looking through’ to individual-security level, the risk incurred by own-account investing is measured at fund level. For this reason, UMH is only exposed to fund price risk. The management of fund price risk focuses on the liquidity requirements of UMH’s subsidiaries and the need to acquire fund units when providing initial funding for investment funds. The requirements for a conservative investment policy are also observed.

Management of asset-management risk

Asset-management risk arises from minimum payment commitments given by **UMH** and/or its subsidiaries for guarantee products. The risks arising from these guarantee products are managed conservatively.

The launch of new guarantee products is governed by the guidelines for medium-term planning that apply to UMH and takes into account the risk capital required and the available internal capital. Before new products are launched, the risks associated with them are analyzed and assessed. Management mechanisms embedded in the products aim to prevent the value of an individual product from falling below its guaranteed level during its lifetime.

Asset-management risk is reported using a separate internal system and is monitored regularly at individual product level by UMH.

10.5 Management of market liquidity risk

At **Bank sector** level, excluding DZ BANK, market liquidity effects are taken into account centrally when determining the risk capital requirement for spread risk and migration risk. Market liquidity risk is included in this risk management in the form of special stress test scenarios in which it is assumed that it is not possible to liquidate financial instruments in the short term.

BSH takes market liquidity risk into account in its day-to-day calculation of liquidity by means of changes in interest rates and credit spreads. At **DZ HYP**, market liquidity risk is factored into the calculation of the risk capital requirement. It is managed operationally as part of the management of market risk and liquidity. **UMH** could be exposed to market liquidity risk as a result of its own-account investing in funds. Market liquidity risk is measured at individual fund level and by carrying out additional stress tests.

10.6 Specific risk factors

Interest-rate risk, spread risk, migration risk, equity risk, fund price risk, currency risk, and asset-management risk are caused by changes in the yield curve, credit spreads, exchange rates, and share prices. Credit spreads and market liquidity squeezes are the critical risk factors for the overall market risk in the Bank sector, including DZ BANK.

The uncertainty associated with **Brexit** could depress earnings temporarily, or even over the long term. As regards market risk, there is a particular risk that credit spreads on European government and corporate bonds could widen. A widening of credit spreads on government bonds could occur if the UK's exit from the EU led to a fundamental crisis of confidence in the political stability of the EU. The prices of corporate bonds could fall if a disorderly Brexit also led to disruption in the movement of people, goods, or services between the UK and the EU. This could impact equity prices too. Brexit could also be accompanied by heightened volatility in interest-rate and currency markets.

A market-wide liquidity squeeze could be detrimental to the business activities of the entities in the Bank sector and therefore also to the financial position and financial performance of the DZ BANK Group and DZ BANK. **Tighter market liquidity** arises particularly in stressed market conditions.

10.7 Risk position

10.7.1 Risk capital requirement

As at December 31, 2018, the risk capital requirement (including capital buffer requirement) for market risk used to determine the risk-bearing capacity of the **Bank sector** amounted to €4,030 million (December 31, 2017: €4,097 million) with an upper loss limit of €6,768 million (December 31, 2017: €6,863 million). The small decrease in the risk was mainly attributable to lower spread and migration risk arising on bonds from countries affected by the European sovereign debt crisis. In turn, this was mainly due to a sharp fall in market values.

The Bank sector's risk capital requirement (including capital buffer requirement) encompasses the **asset-management risk** of UMH. The asset-management risk for guarantee funds was measured at €33 million as at December 31, 2018 (December 31, 2017: €36 million). The asset-management risk for pension products as at the reporting date amounted to €193 million (December 31, 2017: €34 million). The rise in the asset-management risk for pension products was due to the movement of yields on German government bonds, trends in equity prices, and improvements in the measurement of risk.

As at December 31, 2018, **DZ BANK's** risk capital requirement (including capital buffer requirement) for market risk amounted to €1,150 million (December 31, 2017: €1,059 million) with an upper loss limit of €2,000 million (December 31, 2017: €2,270 million). DZ BANK is not exposed to any asset-management risk.

Throughout the year under review, the risk capital requirement (including capital buffer requirement) remained below the upper loss limit at the levels of both the Bank sector and DZ BANK.

10.7.2 Value-at-risk

Fig. 35 shows the change in the value-at-risk in the trading and non-trading portfolios and the change in the aggregate risk for the Bank sector in the year under review.

In addition, Fig. 36 shows the daily changes in risk and the results of daily backtesting of trading portfolios. As the Bank sector's trading portfolios consist exclusively of the trading portfolios of DZ BANK, the associated figures for the Bank sector are the same as those for DZ BANK.

As at December 31, 2018, the **aggregate market risk** in the **Bank sector** was measured at €88 million (December 31, 2017: €51 million). This increase was largely explained by higher spread risk resulting from the widening of spreads in the market. A notable development took place in May 2018 when political uncertainty surrounding the formation of a government in Italy led to a substantial widening of the spreads on bonds issued by the Republic of Italy and other southern European countries. The aggregate

FIG. 35 – BANK SECTOR: VALUE-AT-RISK FOR MARKET RISK IN THE TRADING AND NON-TRADING PORTFOLIOS[1 2]

	Bank sector		DZ BANK	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Trading portfolios	3	2	3	2
Interest-rate risk	1	2	1	2
Spread risk	3	1	3	1
Equity risk[2]	1	1	1	1
Currency risk	-	-	-	-
Diversification effect[3]	-2	-2	-2	-2
Non-trading portfolios	88	49	22	13
Interest-rate risk	23	22	8	5
Spread risk	75	42	16	12
Equity risk[2]	8	5	2	1
Currency risk	1	4	2	3
Diversification effect[3]	-19	-23	-6	-9
Total[4]	88	51	23	14
Interest-rate risk	23	22	7	6
Spread risk	76	43	19	13
Equity risk[2]	7	5	1	2
Currency risk	1	4	2	3
Diversification effect[3]	-19	-23	-6	-11

1 Value-at-risk with 99.00% confidence level, 1-day holding period, 1-year observation period, based on a central market risk model for the Bank sector.
Concentrations and effects of diversification were taken fully into account when calculating the risks. Constituent parts of fund portfolios are included in interest-rate risk, spread risk, and currency risk.
2 Including funds, if not broken down into constituent parts.
3 Total effects of diversification between the types of market risk for all consolidated management units.
4 Owing to the effects of diversification between trading portfolios and non-trading portfolios, the mathematical total of the risks for these two parts of the overall portfolio are different from the figure for aggregate risk.

risk for **DZ BANK** as at December 31, 2018 was calculated at €23 million (December 31, 2017: €14 million). The year-on-year increase was primarily attributable to greater spread changes within the period relevant to the risk calculation.

The value-at-risk for the **trading portfolios** in the Bank sector as at December 31, 2018 was €3 million (December 31, 2017: €2 million) and therefore remained at the low prior-year level. There were intermittent increases in risk in connection with normal trading activities, mainly caused by new scenarios relevant to the historical simulation.
In the year under review, the hypothetical changes in fair value exceeded the forecast risk value on 6 trading days. The overruns predominantly arose from market movements.

As at December 31, 2018, the value-at-risk for the **Bank sector's non-trading portfolios** was calculated at €88 million (December 31, 2017: €49 million). This rise was largely due to increased spread risk on the back of changed market data.

11 Technical risk of a home savings and loan company

11.1 Definition and business background

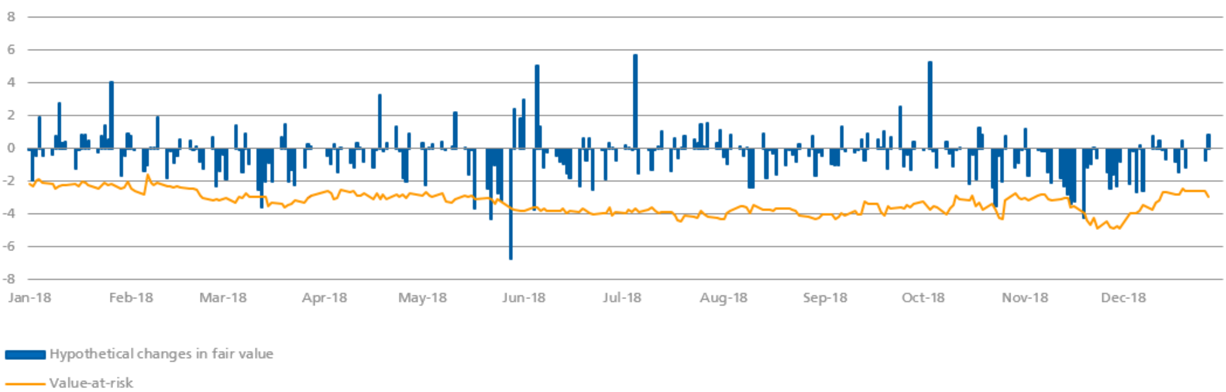
Technical risk of a home savings and loan company is subdivided into two components: new business risk and collective risk.

New business risk is the risk of a negative impact from possible variances compared with the planned new business volume.

Collective risk refers to the risk of a negative impact that could arise from variances between the actual and forecast performance of the collective building society operations caused by significant long-term changes in customer behavior unrelated to changes in interest rates. It can be distinguished from interest-rate risk by incorporating a change in customer behavior unrelated

FIG. 36 – BANK SECTOR: VALUE-AT-RISK FOR MARKET RISK AND HYPOTHETICAL CHANGES IN FAIR VALUE IN THE TRADING PORTFOLIOS

€ million, value-at-risk with 99.00% confidence level, 1-day holding period, 1-year observation period



to interest rates in the collective simulation. Conversely, only changes in customer behavior induced by changes in interest rates are relevant to interest-rate risk.

Technical risk of a home savings and loan company arises in the Bank sector in connection with the business activities of BSH. This risk represents the entity-specific business risk of BSH. A home savings arrangement is a system in which the customer accumulates savings earmarked for a specific purpose. The customer enters into a home savings contract with fixed credit balance and loan interest rates, so that when the savings phase is completed at a later point and a loan is allocated under the contract, he/she can receive a home savings loan at a favorable interest rate. A home savings agreement is therefore a combined asset/liability product with a very long maturity.

11.2 Risk strategy and responsibility

Technical risk of a home savings and loan company is closely linked with the BSH business model and cannot therefore be avoided. Against this backdrop, the **risk strategy** aims to prevent an uncontrolled increase in risk. The risk is managed in particular through a forward-looking policy for products and scales of rates and charges, and through appropriate marketing activities and sales management.

BSH is **responsible** for managing the technical risk of a home savings and loan company within the Bank sector. This includes measuring the risk and communicating risk information to the risk management committees at BSH and to the Board of Managing Directors and Supervisory Board of BSH. Technical risk of a home savings and loan company forms an integral part of the DZ BANK Group's internal risk reporting system.

11.3 Risk management

A special collective simulation, which includes the integrated effects of a (negative) change in customer behavior and a drop in new business, is used to **measure the technical risk of a home savings and loan company**. The results from the collective simulation for the technical risk of a home savings and loan company are fed into a long-term forecast of earnings. The variance between the actual earnings in the risk scenario and the earnings in a base forecast with the same reference date is used as a risk measure. The variance is discounted to produce a present value. The total present value of the variances represents the technical risk of a home savings and loan company and therefore the risk capital requirement for this type of risk.

In order to determine the technical risk of a home savings and loan company in a **stress scenario**, the stress parameters (customer behavior and new business) are severely impaired. An appropriate collective simulation is then generated on this basis and is analyzed using the same methodology used for the measurement of current risk. Stress tests are carried out quarterly.

For the present value perspective in the liquidation approach within BSH's **overall bank limit system**, the technical risk of a home savings and loan company is backed by risk capital.

11.4 Specific risk factors

A variance between the actual and planned new business volume (**new business risk**) could lead to lower deposits from banks and customers over the short to medium term. Over the medium to long term, the lower level of new business could also lead to a decrease in loans and advances to banks and customers.

Variances between the actual and forecast performance of the collective building society business caused by significant long-term changes in customer behavior unrelated to changes in interest rates (**collective risk**) could also lead to lower loans and advances to banks and customers and to lower deposits from banks and customers.

Over the medium to long term, there is a risk that a lower level of new business and change in customer behavior could cause net interest income to taper off with an adverse impact on the financial position and financial performance of the DZ BANK Group.

11.5 Risk position

As at December 31, 2018, the capital requirement for the technical risk of a home savings and loan company amounted to €553 million (December 31, 2017: €558 million) with an upper loss limit of €667 million (December 31, 2017: €558 million). A capital buffer requirement was not calculated for the technical risk of a home savings and loan company as at the reporting date.

The capital requirement for the year under review in respect of the technical risk of a home savings and loan company was calculated on November 30 of the previous year and, due to the nature of building society operations, remained constant throughout the reporting year. As a result, it did not fluctuate during the year.

12 Business risk

12.1 Definition and business background

Business risk denotes the risk of losses arising from earnings volatility for a given business strategy and not covered by other types of risk. In particular, this comprises the risk that, as a result of changes in material circumstances (for example, the regulatory environment, economic conditions, product environment, customer behavior, market competitors) corrective action cannot be taken at an operational level to prevent the losses.

DZ BANK's core functions as a central institution, corporate bank, and holding company mean that it focuses closely on the local cooperative banks, which are its customers and owners. In this context, business risk can arise from corporate banking, retail banking, capital markets business, and transaction banking.

The key entities incurring business risk in the Bank sector in addition to DZ BANK are the management units DVB and DZ PRIVATBANK.

12.2 Organization and risk management

The management of business risk is a primary responsibility of the **Board of Managing Directors of DZ BANK** and is carried out in consultation with the senior management of the main subsidiaries and the heads of the DZ BANK divisions involved. Group management is integrated into a committee structure, headed by the **Group Coordination Committee**. The Group Strategy and Controlling division supports the Board of Managing Directors as part of its role in supervising the activities of the subsidiaries.

The **Central Advisory Council** plays a key role in providing ideas and advice for the members of the Group Coordination Committee and the Board of Managing Directors of DZ BANK. The council facilitates in-depth discussion of key strategic issues in the DZ BANK Group. These issues include the fundamental ongoing development of the entities in the DZ BANK Group, strategic planning considerations, and current business performance. The Central Advisory Council also addresses key questions relating to the design of new products and services, and their marketing to cooperative banks and their customers. It commenced its activities in March 2018 and meets twice a year.

The management of business risk is closely linked with the **management of opportunities** and the tools used in the strategic planning process. It is based on setting targets for the subsidiaries involved in active management and for the divisions of DZ BANK. **Risk is quantified** using a risk model based on an earnings-at-risk approach.

To identify strategic regulatory initiatives with an impact on the DZ BANK Group and the individual management units, a centralized **regulation management** office has been set up at DZ BANK. This office establishes direct contact with the relevant units at DZ BANK and in the other management units, organizes regular bank-wide and groupwide dialog on identified and new strategic regulatory initiatives, and uses a 'regulatory map' to report to the responsible steering committees, the Board of Managing Directors, and the Supervisory Board of DZ BANK.

12.3 Specific risk factors

Costs of regulation

Over the next few years, the DZ BANK Group is likely to continue to face **increased costs**, and thus reduced profits, in connection with implementing the requirements resulting from the commercial-law and regulatory initiatives currently being planned by legislators (see sections 5.1.1 and 5.1.2).

Competition based on pricing and terms

One of the features of the German banking sector is the fierce competition, frequently centered on pricing and terms. This can lead to margins that are not attractive from an economic perspective or are inadequate given the risk involved. The earnings situation is under particular pressure in the **retail banking business**. Competitors are giving greater focus to retail banking than to their core businesses – and increasingly with new, digital business models – so this situation could become even tougher in the future.

Corporate banking is also subject to competition that is becoming increasingly international in nature. A number of foreign providers have already expanded their presence in the German market. The intensity of the competition could therefore continue to increase in the future, with the result that it could be difficult to generate attractive margins, fees and commissions in individual segments or subsegments of the market.

In the event of a renewed economic downturn, this trend could become even worse. For example, a contraction in capital spending by businesses, and an associated drop in demand for bank finance, would add to the competitive pressure. Again, this could give rise to margins that are economically unattractive or that do not adequately cover the risk arising from the corresponding transactions.

Greater competition in capital markets business

DZ BANK's capital markets business is faced with the ongoing challenges presented by **low interest rates**, accompanied by a fall in market liquidity and historically low risk premiums.

Furthermore, the implementation of the revised Markets in Financial Instruments Directive (MiFID II) and Markets in Financial Instruments Regulation (MiFIR) will step up the pressure on **margins in the customer business** because of the enhanced transparency requirements.

In DZ BANK's **own-account investing activities with the local cooperative banks**, it is exposed to rising price sensitivity caused by a contraction in operating profits and increases in the size of the banks resulting from mergers.

In addition, DZ BANK increasingly offers its customers the option of conducting transactions in selected financial instruments using **electronic trading platforms**. Depending also on product demand from market players, European regulation relating to the trading and settlement of financial instruments is expected to lead to a transfer of the trading volume in certain products to electronic trading platforms. It is predicted that this will bring about a change in competitor structure, with competition becoming fiercer in the trading of certain financial instruments for customer account, resulting in the risk of a reduction in margins and revenue going forward.

The trends referred to above could have an adverse impact on future financial performance at both DZ BANK Group and DZ BANK levels.

Digitalization and new competitors in transaction banking

The prevalence of mobile devices and internet-based services (**digitalization**) is encouraging the intermediation of new competitors at the interface between customers and banking services. No more so than in **transaction banking**, where banks are frequently finding themselves up against less regulated global competitors, often from outside the banking sector and offering innovative solutions to meet the changes in customer needs. The situation will become even tougher with the implementation of the requirements under Directive (EU) 2015/2366, the revised Payment Services Directive (PSD2), as a result of which third-party providers will be granted access to account data on behalf of customers. These developments are increasingly changing the role played by banks as product providers and are likely to reduce fee and commission income from transaction banking, thereby diminishing the income prospects for entities in the Bank sector.

The **opportunities** presented by digitalization are described in section 4.2.2.

12.4 Risk position

As at December 31, 2018, the **Bank sector's** risk capital requirement (including capital buffer requirement) for business risk (including reputational risk) amounted to €857 million (December 31, 2017: €781 million). This rise was mainly a reflection of costs at DZ BANK. The upper loss limit was €1,118 million as at the reporting date (December 31, 2017: €1,040 million).

As at December 31, 2018, the economic capital requirement for **DZ BANK** was calculated at €686 million (December 31, 2017: €579 million). The upper loss limit as at December 31, 2018 was €800 million (December 31, 2017: €790 million).

The upper loss limits for the Bank sector and for DZ BANK were not exceeded at any time during 2018.

13 Reputational risk

13.1 Definition and business background

Reputational risk refers to the risk of losses from events that damage confidence, mainly among customers (including the local cooperative banks), shareholders, employees, the labor market, the general public, and the supervisory authority, in the entities in the Bank sector or in the products and services that they offer.

Reputational risk can arise as an independent risk (primary reputational risk) or as an indirect or direct consequence of other types of risk, such as business risk, liquidity risk, and operational risk (secondary reputational risk).

13.2 Risk strategy and responsibility
Reputational risk is incorporated into the risk strategy by pursuing the following objectives:

- Avoiding loss resulting from reputation-damaging incidents by taking preventive action
- Mitigating reputational risk by taking preventive and responsive action
- Raising awareness of reputational risk within the Bank sector, e.g. by defining the people responsible for risk and establishing a sector-wide reporting system and set of rules for reputational risk.

These objectives are applicable both at the Bank sector level and in the management units. The management units are responsible for complying with the rules and for deciding what suitable preventive and responsive action to take.

The reputational risk strategy is based on the business strategies in each management unit and to this end is reviewed at least once a year and adjusted as necessary.

Each management unit is responsible for managing its reputational risk and must comply with the requirements laid down in the set of rules for reputational risk. The principle of **decentralized** responsibility applies equally within all the management units, including DZ BANK. Based on this approach, responsibility for managing reputational risk lies with each division with the involvement of other functions such as communications, marketing, corporate security, and compliance.

13.3 Risk management
Reputational risk in the Bank sector is generally taken into account within business risk and is therefore implicitly included in the measurement of risk and assessment of capital adequacy. At BSH, reputational risk is measured and the capital requirement determined mainly as part of the technical risk of a home savings and loan company. In addition, the risk that obtaining funding may become more difficult as a consequence of reputational damage is specifically taken into account in liquidity risk management.

Crisis communications aimed at mitigating reputational risk are designed to prevent greater damage to the entities in the Bank sector if a critical event occurs. The management units therefore follow a stakeholder-based approach in which reputational risk is identified and evaluated from a qualitative perspective depending on the stakeholder concerned.

13.4 Specific risk factors
If the Bank sector as a whole or the individual management units acquire a negative reputation, there is a risk that existing or potential customers will be unsettled with the result that existing business relationships might be terminated or it might not be possible to carry out planned transactions. There is also a risk that it will no longer be possible to guarantee the backing of stakeholders, such as shareholders and employees, necessary to conduct business operations.

14 Operational risk

14.1 Definition and business background
DZ BANK defines operational risk – also referred to below as OpRisk – as the risk of loss from human behavior, technological failure, weaknesses in process or project management, or external events. This closely resembles the regulatory definition. Legal risk is included in this definition. It follows then that operational risk could arise in any division of the entities in the Bank sector. The activities of DZ BANK and those of DVB, DZ HYP, DZ PRIVATBANK, and VR LEASING have a particularly significant impact on operational risk for the Bank sector.

14.2 Risk strategy
The Bank sector entities aim to manage operational risk efficiently. They apply the following principles:

- Reinforce risk awareness
- Handle operational risk openly and largely without penalties
- Avoid, reduce, transfer, or accept risk as optional courses of action
- Ensure that the impact of decisions on operational risk is taken into account
- Manage operational risk on a decentralized basis but within the limits set out in the framework for operational risk.

14.3 Organization, responsibility, and risk reporting

Each management unit is responsible for managing its operational risk. The principle of **decentralized** responsibility applies equally within all the management units, including DZ BANK.

One of the purposes of the **framework for operational risk** is to harmonize organizational structures throughout the sector. The sector-wide coordinated approach to operational risk is also managed by a **committee** assigned to the Group Risk Management working group and comprising representatives from DZ BANK and its main subsidiaries.

A **DZ BANK** unit responsible for controlling operational risk located within the Group Risk Controlling division develops the management and control methods based on regulatory requirements and business needs applicable to the Bank sector. The unit ensures that operational risk is monitored independently and it is responsible for central reporting.

Corresponding organizational units are also in place at the other main entities in the **Bank sector**.

In most of the management units in the **Bank sector**, including **DZ BANK**, specialist divisions with central risk management functions manage some operational risk tasks. As part of their overarching responsibility, these specialist divisions in each entity also perform an advisory and guiding function for the matters within their remit, such as IT risk.

Because operational risk can affect all divisions, local operational risk coordinators are located in each division of the main **management units** and they act as interfaces with Central Risk Controlling. This also applies to **DZ BANK**.

Regular **reports** on loss data, risk self-assessments, risk indicators, and risk capital are submitted to the Board of Managing Directors, the Group Risk and Finance Committee, the Risk Committee, and operational management, facilitating effective management of operational risk on a timely basis.

14.4 Central risk management

14.4.1 Measurement of operational risk

The calculation of the risk capital requirement for operational risk in the Bank sector is based on an economic portfolio model, in which losses are monitored on the basis of the expected loss calculated by the model. The results from the model, combined with the tools used to identify risk, enable the efficient, centralized management of operational risk.

In the year under review, the analytical capability of this portfolio model underwent further expansion so that enhanced analyses of risk concentrations and risk drivers can be carried out.

14.4.2 Identifying operational risk

Loss database

The groupwide collation of loss data in a central database allows the Bank sector to identify, analyze, and evaluate loss events, highlighting patterns, trends, and concentrations of operational risk. This data-gathering covers a number of areas but focuses particularly on data for gross losses with a value of €1,000 or more related to risks that have been incurred, for example in connection with the risk factors specified in section 14.5. The assembled data history also forms the basis for the calculation of economic capital using a portfolio model. Net losses are used to determine the risk capital requirement. In addition, gross losses upward from a defined threshold value are managed as part of the corrective action management process.

Risk self-assessment

Senior managers from all management units assess operational risk using a scenario-supported risk self-assessment process in order to identify and evaluate all material operational risks and ensure maximum possible transparency regarding the risk position. The main potential risks for all first-level risk categories as defined by the CRR are calculated and described using risk scenarios. The scenarios also enable risk concentrations to be identified.

Risk indicators

In addition to the loss database and risk self-assessment, risk indicators help the Bank sector to identify risk trends and concentrations at an early stage and detect weaknesses in business processes. A system of warning lights is used to indicate risk situations based on specified threshold values. Risk indicators within the Bank sector are collected systematically and regularly on a wide scale.

14.4.3 Limiting operational risk

The upper loss limit for operational risk is used as the basis for central monitoring of the risk capital requirement at the Bank sector level. The risk capital requirement for the Bank sector is broken down into risk contributions for each management unit using a risk-sensitive allocation procedure so that the management units in the Bank sector can be monitored centrally. These risk contributions are then monitored centrally using upper loss limits for each management unit.

14.4.4 Mitigating and avoiding operational risk

Continuous improvement of business processes is one of the methods used with the aim of **mitigating** operational risk. The transfer of risk by means of insurance or outsourcing as permitted by liability regulations provides further protection.

Operational risk is **avoided**, for example, by rejecting products that can be identified during the new product process as entailing too much risk.

In all relevant management units, a comprehensive **contingency and crisis management system** (with business continuity plans covering critical processes) has been established to ensure the continuation of business in the event of process disruption or system breakdown. These business continuity plans are regularly reviewed and simulated to ensure they are fully functional. The contingency and crisis management system at DZ BANK has been certified in accordance with ISO 22301, which applies worldwide.

14.5 Management of special risks

Risks that affect specific matters or areas are called special risks. Special risks primarily impact operational risk but also affect business risk and reputational risk. This particularly applies to aspects of HR risk, IT risk, outsourcing risk, and tax risk. The scope and level of detail for the risk management system described below varies between the management units because of their different business and risk profiles.

Special risks are mostly, but not always, managed and monitored by the generally eponymous specialist divisions. This applies to the majority of the management units in the Bank sector, including DZ BANK.

14.5.1 HR risk

Risk management

The entities in the Bank sector have developed a mechanism known as a **Human Resources KPI cockpit** with standardized KPIs. The Human Resources KPI cockpit is intended to integrate HR strategies between the management units, increase transparency, and ensure comparability between the HR management systems in the Bank sector as well as help the management units to manage their HR activities. To this end, the cockpit specifies 21 KPIs across the following four categories: value added/finance, employer appeal, organization/efficiency, and innovation/learning.

The entities in the Bank sector pursue the objective of preventing or minimizing HR risk by identifying negative trends and abnormalities, and then initiating suitable corrective action. HR risk is monitored using the following 4 risk factors: exit risk, availability risk, skills and qualifications risk, motivational risk.

Compliance functions and a comprehensive internal control system are used to counter fraud and negligence. Examples include internal rules on the minimum absence for employees with responsibility for trading positions.

Risk Controlling at DZ BANK has specified relevant KPIs for HR management as risk indicators. The key figures are collated on a monthly basis as part of the risk indicator process and include training days per employee, employee workload, resignation rate, total staff turnover rate, and the percentage of vacant positions.

The HR division of DZ BANK is involved in designing the standard scenarios relating to HR risk and validates the scenario assessment of the other entities in the Bank sector, particularly with regard to basis of calculation, frequency of occurrence, and loss level.

Specific risk factors

The majority of employees at the German offices of the entities in the Bank sector fall within the scope of collective pay agreements or other collective arrangements, such as company agreements. The entities in the Bank sector could be hit by strikes called by labor unions.

Other HR measures, such as job cuts in response to a permanent fall in demand or to increase efficiency, could lead to industrial disputes between the workforce (or the employee representatives/labor unions) and the entities in the Bank sector.

In accordance with their contingency and crisis management systems, the entities in the Bank sector have initiated a range of measures to maintain business continuity in the event of **strikes and other business interruptions**. However, the possibility cannot be ruled out that simultaneous industrial action at all sites over several days could cause lasting disruption to processes and workflows. Moreover, sensitive internal and external interfaces could be jeopardized by long-term business interruptions.

The future success of the entities in the Bank sector is dependent upon **capable managers and employees with the necessary skills and qualifications**. Given the current challenges presented by the regulatory environment, this particularly applies in the areas of regulatory reporting, external (consolidated) financial reporting, and risk control. In the labor market, there is fierce competition for managers and employees in these areas of activity driven by high demand and insufficient numbers of suitable individuals.

Unless the necessary number of suitable managers and employees can be attracted to the entities in the Bank sector within the required timeframe, and/or existing managers and employees can be retained by the entities in the sector, there will be a heightened risk that the sector will be unable or insufficiently able to satisfy the statutory requirements regarding regulatory reporting, external (consolidated) financial reporting, and risk control as a result of inadequate expertise in terms of either quality or quantity.

This could lead to sanctions from the banking supervisor and a qualified audit opinion in the consolidated and separate financial statements and group management reports and management reports prepared by the entities in the Bank sector, which would impact negatively on the reputation of the DZ BANK Group overall and of individual entities in the Bank sector.

14.5.2 IT risk

Risk management

The entities in the Bank sector use computers and data processing systems to carry out their operating activities. Practically all business transactions and activities are processed electronically using appropriate IT systems. These systems are networked with each other and are operationally interdependent.

Processes in the IT units of the entities in the Bank sector are designed with risk issues in mind and are monitored using a variety of control activities in order to ensure that IT risk is appropriately managed. The starting point is to determine which risks are unavoidable in certain aspects of IT. Detailed requirements can then be specified. These requirements determine the extent to which checks need to be carried out and are intended to ensure that all activities are conducted in compliance with the previously defined risk appetite.

IT units apply comprehensive physical and logical precautionary measures to guarantee the security of data and applications and to ensure that day-to-day operations are maintained. Measures used by the Bank sector to counter the risk of a partial or complete loss of IT systems include segregated data processing centers in which the data and systems are mirrored, special access security, fire control systems, and an uninterruptible power supply supported by emergency power generators. Regular exercises are carried out to test defined restart procedures to be used in emergency or crisis situations with the aim of checking the efficacy of these procedures. Data is backed up and held within highly secure environments in different buildings.

DZ BANK's risk assessment methodology for IT risk is made available centrally by information security management and applied locally by the managers responsible for the various applications using tool-supported control processes. All variances identified in these processes are assessed from the perspective of the associated risks. All IT risks classified as material are included in regular information security reports to the Board of Managing Directors.

The risks identified in the information security control processes are also taken into account by the IT division, information security management, and the locally based OpRisk coordinators for the purposes of evaluating the risk self-assessment scenarios as part of the management of operational risk. The IT risk groups, comprising IT operating risk, IT outsourcing risk, IT security risk, and IT project risk, are each allocated one or more scenarios in the risk self-assessment. When the risk self-assessment is completed, the results of the decentralized risk assessment are compared with internal IT estimates and then analyzed. The results of the risk self-assessment process are also used as parameters for assessing IT risk events in the following year.

Specific risk factors

Malfunctions or breakdowns in data processing systems or in the programs used on these systems, including attacks from external sources – such as hackers or malware –, could have an adverse impact on the ability of the entities in the Bank sector to efficiently maintain the processes necessary to carry out operating activities, protect saved data, ensure sufficient control, or continue to develop products and services. Furthermore, such malfunctions or breakdowns could lead to temporary or permanent loss of data, or cause additional costs because the original capability would need to be restored and/or preventive measures introduced to provide protection against similar events in the future.

Events outside the control of the entities of the Bank sector could also disrupt operational procedures. For example, when executing forward, currency, or commodities trades a risk arises that a system breakdown at a clearing agent, exchange, clearing house, or other financial intermediary could prevent the transactions in question from being settled at the agreed time and thus could also prevent the entities of the Bank sector from meeting their obligations. This could, for example, result in the withdrawal of counterparties from agreements entered into with entities in the Bank sector or lead to claims for damages against those entities.

14.5.3 Outsourcing risk

Risk management

The entities in the Bank sector have outsourced activities and processes to third-party service providers to a considerable extent.

The process of assessing the risk and determining the degree to which an outsourcing arrangement is material is mostly carried out as part of the risk analysis for the outsourcing arrangement by the division responsible for the outsourcing with the involvement of a number of corporate and functional units, including internal audit, legal affairs, business continuity management, and compliance, and in consultation with the local coordinators for operational risk.

The Central Outsourcing Management (COM) unit has been set up at DZ BANK to coordinate outsourcing activities. COM acts as a central point of contact for outsourcing matters at DZ BANK and lays down standards for handling outsourcing activities and their operational management. The RSA Archer outsourcing management tool is used within COM as the central application for recording outsourcing projects at DZ BANK and for managing outsourcing partners.

At DZ BANK, outsourcing partners are managed by the department responsible for the outsourcing in accordance with the currently applicable guidelines for insourcing and outsourcing. Service meetings are regularly held with service providers to facilitate communication and coordinate the IT services and other services to be provided by the third parties concerned. Compliance with contractually specified service level agreements is monitored by means of status reports and uptime statistics. The outsourcing partners submit annual audit reports in which they evaluate and confirm the effectiveness of the general controls and procedures.

Specific risk factors

The risk arising in connection with the outsourcing of business activities is limited to the extent required by the supervisory authority. Nevertheless, there is a risk that a service provider could fail or cease to be available as a result of insurmountable technical or financial difficulties. There is also a risk that the services performed by the service provider might not meet the contractually agreed requirements. The consequences could be that only some of the outsourced processes or services can be provided, or even that the outsourced processes or services cannot be provided at all. This could lead to a loss of business and to claims for damages from customers. There are contingency plans, explicit liability provisions in contracts, and exit strategies for this eventuality, including action to reduce this risk.

14.5.4 Risks in connection with the (consolidated) financial reporting process

Risk management

In order to limit operational risk in this area of activity, DZ BANK and the other entities in the Bank sector have set up internal control systems for the (consolidated) financial reporting process as an integral component of the control systems put in place for the general risk management process. The functionality of these control systems is described in section 3.5.7.

Specific risk factors

An internal control system relating to the (consolidated) financial reporting process needs to provide reasonable assurance that the financial statements are free from misstatements. The main risks in the (consolidated) financial reporting process are that, as a result of unintended misstatements or deliberate action, the consolidated financial statements and group management report of the DZ BANK Group as well as the consolidated financial statements, group management reports, separate financial statements, and management reports of DZ BANK and the other entities in the Bank sector might not provide a true and fair view of financial position and financial performance and/or that publication might be delayed. These risks could then have an adverse impact on investors' confidence in the DZ BANK Group and the individual entities in the Bank sector or on their reputation. Furthermore, sanctions could be imposed, for example by the banking supervisor.

The (consolidated) financial statements do not provide a true and fair view of financial position and financial performance if the disclosures in the statements are materially different from what they should be. Differences are classified as material if, individually or as a whole, they could influence economic decisions made by the users of the financial statements on the basis of the financial statements. The internal control system related to the (consolidated) financial reporting process aims to reduce these risks.

14.5.5 Legal risk

Risk management

Tax risk with legal risk implications is not included in this section; it is described in section 14.5.6 below.

In the entities of the Bank sector, responsibility for managing legal disputes normally lies with their organizational units responsible for dealing with legal issues.

The entities in the Bank sector pursue a strategy of avoiding legal risk. The organizational units responsible for assessing legal issues therefore continuously monitor proposed legislation and regulatory requirements that are legally relevant, as well as developments in decisions by the courts. On this basis, these units identify legal risk and are involved in informing the departments concerned as soon as possible and implementing any necessary changes. The legal affairs units are responsible for reviewing and assessing circumstances from a legal perspective and also for coordinating any legal proceedings. The latter consists of both defending claims pursued against the entities in the Bank sector and enforcing claims by the management units against third parties.

If any legal risk is identified, the management unit concerned assesses the risk parameters in terms of their probability of occurrence and possible impact. In addition, the amounts in dispute in the divisions are calculated quarterly as part of the assessment of risk indicators and, if they exceed certain thresholds, the affected divisions must prepare a report. As part of the annual risk self-assessment in the management and control of operational risk, the legal affairs divisions of the management units help to assess the standard scenarios for legal risk. The results are taken into account when determining the economic capital.

Identified risks are limited and mitigated by organizational measures, either legal or procedural, or are taken into account by recognizing appropriate loss allowances.

The legal affairs divisions in the Bank sector entities also submit reports on risk-related issues to the member(s) of the Board of Managing Directors with relevant responsibility, independently of the established regular reports on cases pending before the courts.

Provisions recognized on the balance sheet

The entities in the Bank sector report potential losses arising from legal risk in accordance with the relevant (consolidated) financial reporting standards, which includes recognizing any provisions that may be required. This also encompasses potential risk in connection with cases pending before the courts. Disclosures covering the provisions recognized for risks arising from ongoing legal disputes are included in note 67 of the notes to the consolidated financial statements.

Any concentrations of risk owing to similarities between individual cases are taken into consideration. Comparable cases are aggregated to form a group.

The entities in the Bank sector have recognized provisions for legal risk arising in connection with capital market and credit products.

Specific risk factors

Legal risk could arise, in particular, from changes in the legal environment, changes in official interpretations of relevant regulations, government interventions, court or arbitration proceedings, and changes in the business environment.

14.5.6 Tax risk

Risk management

The entities in the Bank sector have decentralized systems for managing tax risk. Within the management units, responsibility for managing tax risk normally lies with the organizational units responsible for dealing with tax issues.

The entities in the Bank sector pursue a strategy of avoiding tax risk. The starting point for managing tax risk is the ongoing process of identifying, recording, and monitoring risk. If any tax risk is identified, the risk parameters are assessed in terms of their probability of occurrence and possible impact in quantitative and qualitative terms. Identified risks are limited and mitigated by means of tax organizational measures.

The tax department at DZ BANK reports the groupwide data relevant to risk to the head of the Group Finance division and to the member of the Board of Managing Directors with relevant responsibility. Separately, and depending on materiality thresholds, ad hoc risk reports are also submitted to the above individuals.

Specific risk factors

Tax risk can arise, in particular, from adverse changes in tax circumstances (tax legislation, decisions by the courts), adverse changes in the interpretation by tax authorities of existing tax legislation, and changes in non-tax regulations.

As a result of tax audits, an alternative assessment of the tax risk or, in some cases, other information could give rise to **retrospective tax liabilities** for periods that have already been assessed. As there are still outstanding audits by the tax authorities relating to a number of financial years, there is a risk that retrospective tax payments could be required and these payments would be subject to interest charges.

Business transactions are assessed for tax purposes on the basis of current tax legislation, taking into account the latest decisions by the courts and interpretations by the authorities. The outcome is factored into the measurement of the loss allowances. Further risks could arise as a result of **changes in tax law or in decisions by the courts**, which could also have retroactive implications.

14.5.7 Compliance risk

Risk management

In the context of their operating activities, the entities in the Bank sector must comply with various legal requirements in a large number of countries. These include prohibitions on accepting or granting benefits in connection with efforts to attract business, and prohibitions on other unfair business practices.

The management of risk arising from non-compliance with applicable laws, regulatory requirements, and internal rules and regulations is described in section 3.5.4.

Specific risk factors

The compliance and risk management systems in the Bank sector are generally appropriate. Nevertheless, there is a risk that these systems could be inadequate for completely preventing or uncovering violations of legal provisions, for identifying and assessing all relevant risks for the entities in the Bank sector, or for initiating appropriate corrective measures.

The entities in the Bank sector cannot rule out the possibility of the existing compliance system proving to be inadequate, or of their employees violating domestic or foreign legal provisions regardless of the existing legal requirements, internal compliance guidelines and organizational requirements, and despite appropriate training and reviews, or of such activities remaining undiscovered.

A violation of legal provisions may have legal implications for the entity concerned, for the members of its decision-making bodies, or for its employees. It may give rise, for example, to fines, penalties, retrospective tax payments, or claims for damages by third parties. The reputation of the DZ BANK Group as a whole and of the individual entities in the Bank sector may also suffer as a result.

14.6 Loss events

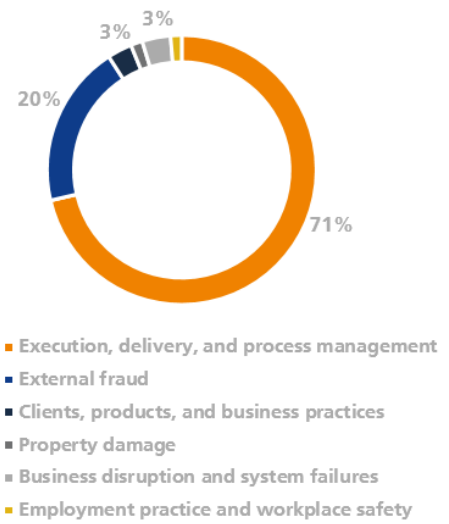
Losses from operational risk do not follow a consistent pattern. Instead, the overall risk profile can be seen from the total losses incurred over the long term and is shaped by a small number of large losses.

Consequently, comparisons between net losses in a reporting period and those in a prior-year period are not meaningful. Prior-year figures are therefore not disclosed.

Over the course of time, there are regular fluctuations in the pattern of losses as the frequency of relatively large losses in each individual case is very low. Presenting the change in losses meaningfully therefore requires a sufficiently long and unchanging time horizon for reporting purposes. The data is therefore selected from the loss history for the past 4 quarters and on the basis of the date on which the expense results in a cash outflow.

Fig. 37 shows the losses reported in the past 4 quarters, classified by loss event category.

FIG. 37 – BANK SECTOR: NET LOSSES BY EVENT CATEGORY IN 2018[1]



1 In accordance with the CRR, losses caused by operational risks that are associated with risks such as credit risk are also shown.

In the **Bank sector**, the 'Clients, products, and business practices' event category accounted for the majority (71 percent) of net losses. The net loss in this event category was attributable to 21 loss events, broken down as follows: 17 loss events resulted from failures in process implementation or in process design; a further 3 loss events were due to project management weaknesses; 1 loss event was in connection with tax matters.

Accounting for 92 percent of total net losses, the largest event category at **DZ BANK** was 'Execution, delivery, and process management'. The loss amount was attributable to some of the loss events referred to above.

Losses did not reach a critical level relative to the expected loss from operational risk at any point during 2018, either in the Bank sector or at DZ BANK.

14.7 Risk position

Using the internal portfolio model, the **Bank sector's** risk capital requirement (including capital buffer requirement) for operational risk as at December 31, 2018 was calculated at €804 million (December 31, 2017: €821 million) with an upper loss limit of €1,030 million (December 31, 2017: €1,147 million).

As at December 31, 2018, the corresponding requirement at **DZ BANK** was €417 million (December 31, 2017: €390 million). The upper loss limit as at December 31, 2018 was €499 million (December 31, 2017: €565 million). The risk capital requirements (including capital buffer requirements) for the Bank sector and for DZ BANK were within the applicable upper loss limits at all times during 2018.

Insurance sector

15 Basic principles of risk management in the Insurance sector

15.1 Risk strategy

The principles of risk management in the Insurance sector are based on the risk strategy of the DZ BANK Group for the Insurance sector. The risk strategy is derived from the business strategies, taking into account the strategic 4-year plan approved by the R+V Board of Managing Directors.

Life actuarial risk is managed with the objectives of holding a broadly diversified product portfolio and of developing existing products while structuring new, innovative products. Pension, endowment and risk insurance, working life and semi-retirement products, and index-linked products are underwritten in order to diversify the life insurance and pension provision portfolios. The actuarial assumptions are designed so as to build in adequate safety margins and address changes in the latest findings in order to withstand both the current risk situation as well as potential changes in this situation. Where products have policyholder participation, this represents the main instrument for mitigating risk. Policyholder participation is set appropriately. Underwriting guidelines and risk audits are used to prevent anti-selection. The risk exposure in the case of large individual risks may be limited by taking out appropriate reinsurance.

The objectives of managing **health actuarial risk** are a risk-conscious underwriting policy, rigorous cost/benefit management, the development of existing products, and the structuring of new, innovative products. In this case too, the actuarial assumptions are designed so as to build in adequate safety margins and address changes in the latest findings in order to withstand both the current risk situation as well as potential changes in this situation. The risk exposure in the case of large individual risks may be limited by taking out appropriate reinsurance.

The management of **non-life actuarial risk in direct business** aims to optimize portfolios in terms of risk and reward. R+V focuses on business in Germany, offering a full range of non-life insurance products. The assumption of risk in connection with expanding its market share is accepted subject to the proviso that the business is profitable. Underwriting guidelines and size restrictions ensure targeted risk selection. Depending on its risk-bearing capacity, R+V reviews whether to purchase reinsurance cover to reduce earnings volatility, insure against major and cumulative claims, and protect and boost existing financial strength and earnings power.

In **inward non-life business**, R+V also aims to optimize the portfolio from a risk/reward perspective. Risk selection is based on binding underwriting guidelines and the exclusions of liability defined in those guidelines. The assumption of reinsurance risk is managed by using individual liability and aggregate limits in the sales and underwriting policy.

R+V's investments particularly give rise to interest-rate risk, spread risk, and equity risk. R+V's **market risk strategy** is determined by the regulatory investment principles specified in section 124 VAG and by internal rules.

Insurance companies must invest all assets so as to ensure the security, quality, liquidity, and profitability of the portfolio as a whole; the location of the assets must also ensure that they are available. In addition, well-established collaboration arrangements between R+V's underwriting and investment departments as part of the management of assets and liabilities ensure that insurance contract benefit obligations on the balance sheet are matched with investment opportunities.

The market risk assumed by R+V reflects the investment portfolio structure developed as part of strategic asset allocation taking into account the individual risk-bearing capacity and long-term income requirements of R+V subsidiaries. The risk is managed in compliance with the upper loss limits specified at DZ BANK Group level.

The management of market risk is connected with the following fundamental objectives of risk policy: ensuring competitive returns on investments taking into account individual risk-bearing capacities, achieving defined minimum investment returns in stress scenarios, and securing a hidden asset level sufficient to ensure consistent earnings. The aim is also to guarantee that there is a sufficient proportion of fungible investments. The methods used to limit life insurance risk include policyholder participation set at a responsible and reasonable level, an appropriate discount rate, and recognition of supplementary change-in-discount-rate reserves.

In line with the risk strategy for **counterparty default risk**, R+V aims to maintain a high average credit rating for its portfolios, avoid concentrations of issuers at portfolio level, and comply with the limits that have been set for counterparties and debtors of insurance and reinsurance companies.

The risk strategy for **operational risk** aims to further raise awareness of operational risk.

The objective of the reputational risk strategy is to promote the positive image of the R+V brand with due regard to the need for transparency and credibility.

15.2 Organization, responsibility, and risk reporting

The risk management process, which is implemented across all entities in the R+V subgroup, defines rules for the way in which risks are identified, analyzed, assessed, managed and monitored, and the way in which they are reported and communicated. These rules form the basis for a central **early-warning system**.

Participations are also included in the R+V subgroup's risk management system. Risk-bearing capacity is reviewed and measured at least once a quarter and the process includes a review of binding key performance indicators and threshold values. Corrective action must be initiated if a specified index value is exceeded. Risk-bearing capacity and all material risks are then finally evaluated each quarter by the Risk Committee.

The central **reporting of risk** at R+V is intended to provide transparent reporting. Reports are submitted to the Board of Managing Directors of R+V in the event of material changes in risk. Company information that has a bearing on risk exposure is passed to the relevant supervisory bodies, both regularly and on an ad hoc basis.

16 Actuarial risk

16.1 Definition and business background

16.1.1 Definition

Actuarial risk is the risk that the actual cost of claims and benefits deviates from the expected cost as a result of chance, error or change. It is broken down into the following categories defined by Solvency II:

- Life actuarial risk
- Health actuarial risk
- Non-life actuarial risk

Life actuarial risk

Life actuarial risk refers to the risk arising from the assumption of life insurance obligations, in relation to the risks covered and the processes used in the conduct of this business. Life actuarial risk is calculated as the combination of capital requirements for, as a minimum, the following sub-modules:

- **Mortality risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where an increase in the mortality rate leads to an increase in the value of insurance liabilities.

- **Longevity risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where a decrease in the mortality rate leads to an increase in the value of insurance liabilities.

- **Disability-morbidity risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of disability, sickness, or morbidity rates.

- **Life catastrophe risk** describes the risk of loss or adverse change in the value of insurance liabilities, resulting from the significant uncertainty of pricing and assumptions when recognizing provisions related to extreme or unusual events.

- **Lapse risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level or volatility of the rates of policy lapses, cancellations, renewals, and surrenders.

- **Life expense risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of the expenses incurred in servicing insurance or reinsurance contracts.

Health actuarial risk

Health actuarial risk refers to the risk arising from the assumption of health and casualty insurance obligations, in relation to the risks covered and the processes used in the conduct of this business.

Non-life actuarial risk

Non-life actuarial risk refers to the risk arising from the assumption of non-life insurance obligations, in relation to the risks covered and the processes used in the conduct of this business. It is calculated as the combination of capital requirements for the following submodules:

- **Premium and reserve risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from fluctuations in the timing, frequency, and severity of insured events, and in the timing and amount of claim settlements.

- **Non-life catastrophe risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from the significant uncertainty of pricing and assumptions when recognizing provisions related to extreme or unusual events.

- **Lapse risk** describes uncertainty about the continuation of the direct insurance and reinsurance contracts. It results from the fact that the lapse of contracts that are profitable for the insurance company will lead to a reduction in own funds.

16.1.2 Business background

In the DZ BANK Group, actuarial risk arises from the business activities of the insurance subsidiary R+V and its subsidiaries. The risk arises from the direct life insurance and health insurance business, the direct non-life insurance business, and the inward reinsurance business.

Actuarial risk arises in the form of variances from the expected level of losses resulting from the random nature of the timing, frequency, and amount of claims. The risk may also arise from unpredictable changes in insured risks, claim distributions, expected values and mean variations due, for example, to changes in climatic and geological conditions or technological, economic or social changes. Incomplete information about the true degree of regularity in the distribution of claims due to incorrect statistical analysis, or incomplete information about the future validity of the degree of regularity in the distribution of claims in the past could be other causes.

The actuarial risk situation in life insurance companies is also characterized to a large extent by fixed premiums and the long-term nature of the guaranteed benefits in the event of a claim.

The actuarial risk situation of a health insurance company is characterized to a large extent by a rise in the cost of claims, caused both by the performance of its portfolio and by the behavior of policyholders and service providers.

16.2 Management of life actuarial risk

16.2.1 Risk measurement

The risk for insurance contracts subject to **mortality risk** is modeled as a 15 percent increase in mortality.

The risk for insurance contracts subject to **longevity risk** is modeled as a 20 percent increase in longevity.

The overall solvency requirement for **disability-morbidity risk** is analyzed on the basis of a permanent 35 percent rise in the disability rates expected for the next 12 months, a permanent 25 percent rise in the disability rates expected for the period after those 12 months, and a permanent 20 percent decrease in all expected likely cases of policyholders being able to return to work.

The risk for insurance contracts affected by **life catastrophe risk** is modeled as an immediate increase of 0.15 percentage points in mortality rates in the next 12 months.

The risk for insurance contracts subject to **lapse risk** is modeled for the following scenarios: for an increase in lapses, a 50 percent rise in the lapse rate; for a decrease in lapses, a 50 percent reduction in the lapse rate; for a mass lapse event, lapse of 40 percent of the contracts.

The overall solvency requirement for **life expense risk** is based on the following stress scenarios: a permanent 10 percent rise in the costs reflected in the measurement of the insurance liabilities; an increase of 1 percentage point in the cost inflation rate.

16.2.2 Risk management in direct life insurance business

Actuarial risk is minimized by carrying out a careful, prudent cost calculation while products are still in development. This applies to the development of existing products as well as the design of innovative new types of insurance and is carried out by incorporating adequate safety margins into actuarial assumptions in compliance with legislation. The assumptions are structured in such a way that they not only withstand the current risk situation, but also accommodate potential changes in the risk position. Actuarial control systems are used on a regular basis to decide whether the cost calculation for future new business needs to be changed. The calculation is also adjusted on an ongoing basis in line with the latest actuarial findings. The appointed actuary carries out reviews as part of product development and during the course of the term of contracts to verify that the actuarial assumptions used are appropriate.

A number of measures are taken to prevent a concentration of risks in the portfolio. Before contracts are signed, extensive risk reviews are carried out to limit **mortality and disability-morbidity risks**. In general, risk is only assumed in compliance with fixed underwriting guidelines. High levels of individual or cumulative risk are limited by an appropriate degree of reinsurance.

In principle, the broad diversification of insured risks within R+V has the effect of mitigating risk. For example, an increase in mortality has an adverse impact on endowment life and risk insurance policies, but at the same time has a positive impact on the longevity risk associated with pension insurance.

Life expense risk is mitigated by cutting costs as far as possible and operating sustainably.

Lapse risk is mitigated by structuring life insurance contracts to provide maximum flexibility should policyholders' circumstances change. A range of different options during the term of an insurance contract enables customers to maintain their contract instead of canceling it. Designing policyholder participation with an attractive final bonus also counteracts lapse risk.

Advance notice of **policyholder participation** in the form of declarations of future bonuses is also an important instrument with which to reduce actuarial risk relating to life insurance.

16.3 Management of health actuarial risk

16.3.1 Risk measurement

Health actuarial risk is calculated by combining the capital requirements for the subcategories 'similar to life techniques, health actuarial risk' (risk on health insurance pursued on a similar technical basis to that of life insurance), 'non-similar to life techniques, health actuarial risk' (risk on health insurance pursued on a similar technical basis to that of non-life insurance), and 'health catastrophe risk'.

The methods described in the sections on life actuarial risk and non-life actuarial risk are used to measure risk in the subcategories.

Health actuarial risk also includes significant parts of the group's casualty insurance business as well as its health and occupational disability insurance business.

16.3.2 Risk management in health and casualty insurance

Risk management in health insurance business

In the health insurance business, actuarial risk is managed by means of a **risk-conscious underwriting policy**, the features of which are binding underwriting guidelines, careful selection of risk, and targeted management of benefits and costs. In many of the health insurance rate scales, deductibles are one of the specific mechanisms used to control the extent of claims. Provisions are recognized to ensure that all benefit obligations under insurance contracts can be met. The appointed actuary carries out monitoring as part of product development and over the course of time to verify that the actuarial assumptions used are appropriate.

In accordance with VAG provisions, R+V carries out an annual comparison of its calculations with the insurance benefits it is required to pay. If this comparison of claims for an observation unit within a particular scale of insurance rates reveals a variance that is other than temporary, the relevant **premiums** are adjusted. An independent trustee is consulted to ensure that the actuarial assumptions are sufficiently sound. A safety margin factored into premiums also ensures that obligations can be met if claims are higher than the level provided for in cost calculations.

In the health insurance business, the **decrement tables** include assumptions regarding mortality and the probability of other relevant withdrawal factors. Under the requirements set out in the German Health Insurance Supervision Regulation (KVAV), these assumptions must be specified and regularly reviewed from the perspective of prudent risk assessment. It is for this reason that a new mortality table is developed annually by the Verband der privaten Krankenversicherung e.V. (PKV) [Association of German private healthcare insurers] in consultation with BaFin. In accordance with statutory provisions, R+V carries out an annual comparison of its calculations with the most recently published mortality tables.

When determining **lapse probabilities** for the purposes of its calculations, R+V uses both its own observations and the latest figures published by BaFin.

Where premiums were adjusted on January 1, 2018, R+V used the new PKV mortality table valid for 2018 to determine both new business premiums and those **premium adjustments** in existing business.

Unisex insurance rate scales are offered in R+V's **new business**. The cost calculation for these rates is not only based on the existing gender breakdown, but also takes into account the expected pattern of switching by existing policyholders to the new rates. The appropriateness of the composition of the portfolio resulting from the calculations is reviewed by actuaries using comparable calculations.

Risk management in casualty insurance business

The risk situation in the casualty insurance division is characterized by the fact that it is fixed-sum insurance and not indemnity insurance. Consequently, the maximum benefit per insured person is restricted to the sum insured.

A risk-conscious underwriting policy is adopted for casualty insurance. Premiums are reviewed on an ongoing basis to ensure that they remain appropriate. Claims are assessed on a case-by-case basis. Experts and assessors are selected very carefully in order to obtain assessments that are realistic and appropriate.

16.4 Management of non-life actuarial risk

16.4.1 Risk measurement

The capital requirements for **premium and reserve risk** are calculated on the basis of risk factors and volume measures for all branches of insurance in which business is conducted. The volume measures take account of geographical diversification. The risk factors (e.g. the standard deviation as a percentage of the volume measure) describe the degree of threat posed by the risk. The volume measure for the **premium risk** is essentially the net premium income earned in the financial year and in the first and second years after that. The net claims provisions in the form of a best-estimate valuation constitute the volume measure for the **reserve risk**.

The capital requirement for **catastrophe risk** is calculated as an aggregation of four risk modules. These are natural catastrophe risk (broken down into the following natural hazards: hail, storm, flood, earthquake, and subsidence), the catastrophe risk of non-proportional reinsurance in non-life insurance, risk of man-made catastrophe, and other catastrophe risk in non-life insurance. Catastrophe risk is calculated using the volume measures of sums insured and premiums. Risk mitigation through reinsurance is taken into consideration.

To determine the overall solvency requirement as part of internal risk assessment, empirical distributions are generated for the relevant parameters for parts of the **direct insurance portfolio**, such as the claim amount and the number of claims per sector and claim type (e.g. basic claims, major claims, catastrophe claims). The value-at-risk can then be determined with the required confidence level directly from the underwriting result modeled in this way, recorded as a loss function. The parameterization of the distributions taken into account uses historical portfolio data and their planning data and reflects the entity's actual risk position.

The risk modeling for calculating basic claims relating to the natural hazard earthquake and basic claims and minor cumulative events relating to the natural hazards hail, storm, and flood is based on mathematical/statistical methods. The minimum and maximum claim amounts for minor cumulative events are derived from the group's own claims history. Modeling is based on the group's own claims data.

The risk modeling for major cumulative events relating to the natural hazards hail, storm, flood, and earthquake uses probability-based natural hazard models. To this end, catastrophe claims are used that have been modeled by external providers for each natural hazard and take account of the specific risk profile.

In its **inward reinsurance business**, R+V deploys a simulation tool for stochastic risk modeling of catastrophe risk. To model the natural catastrophe risk on an individual contract basis, event catalogs from external providers containing predefined scenarios based on historical observations are used. The event catalogs cover the main countries and natural hazards related to the underwritten risk in the inward reinsurance concerned. In the case of countries and natural hazards for which there is no event catalog, modeling is based on R+V's own claims history. This involves generating scenarios for the current portfolio on the basis of historical major claims.

For inward reinsurance purposes, modeling based on the group's own claims history is also used to determine the overall solvency requirement for the risk of **man-made catastrophe**. This involves generating scenarios for the current portfolio on the basis of the historical major claims.

The overall solvency requirement for **lapse risk** is determined on the basis of a stress scenario involving the lapse of 40 percent of those insurance contracts whose lapse would lead to an increase in the best-estimate valuation for the premium provision.

16.4.2 Risk management in direct non-life insurance business

Premium and reserve risk is managed through targeted risk selection, risk-oriented premiums and products, and profit-oriented underwriting guidelines. In order to maintain a balanced risk profile, R+V ensures it has adequate reinsurance cover for major individual risks. Managers use planning and control tools to ensure they are in a position at an early stage to identify unexpected or adverse portfolio or claim trends and to initiate appropriate corrective action in response to the changes in the risk situation. To make these risks manageable, pricing is based on a precise calculation with the help of mathematical/statistical modeling.

Market monitoring and ongoing checks on the action taken provide further options for managing the business at an early stage, taking into account the prevailing risk appetite.

The measurement of the overall solvency requirement for **natural catastrophe risk** is supplemented by regular analysis of the policy portfolio. This analysis carried out with the aid of tools such as the ZÜRS Geo information system (zoning system for flooding, backwater flooding, and heavy rainfall) investigates risk concentrations and changes in these concentrations over time. The use of geographical diversification and the deployment of underwriting guidelines form the basis for managing risks arising from natural disasters.

To reduce actuarial risk, R+V purchases facultative and obligatory reinsurance cover, formulates risk exclusions, and designs risk-appropriate deductible models. Risk-bearing capacity is regularly reviewed as part of the reinsurance decision-making process. This is used as the basis for reinsurance structures and liability layers.

In order to prevent or limit losses, R+V provides a network of different subsidiaries that offer specialist services to help customers and sales partners with contract, risk prevention, or restructuring issues.

In compliance with Solvency II requirements, mathematical/statistical methods are used to calculate future payment obligations for the purpose of measuring insurance liabilities. Insurance liabilities are measured separately for premium and claims provisions. R+V's own experience, actuarial statistics, and additional sources of information are used for the calculations. The methods deployed are based on generally accepted principles of actuarial practice.

16.4.3 Risk management in inward non-life business

R+V counters **premium and reserve risk** by continuously monitoring the market as well as the economic and political situation, by managing risk in accordance with its corporate strategy, and by setting insurance rates appropriate to the risk involved. Risk management is conducted via a clearly structured and earnings-driven underwriting policy. The assumption of risk is circumscribed by mandatory underwriting guidelines and limits that restrict potential liability arising from both individual and cumulative claims. R+V takes account of economic capital costs when underwriting risk. Compliance with these requirements is regularly monitored.

The material actuarial risks in the inward reinsurance portfolio are **catastrophe risk**, long tail risk, reserve risk and also far-reaching changes in the trends underlying the main markets. The actual and potential losses arising from the level and frequency of claims under natural disaster insurance are recorded and assessed using industry-standard software and R+V's own additional verification systems. The portfolio is continuously monitored for possible concentrations of natural disaster risk.

The objective in managing natural disaster risk is to ensure that there is a broad balance of risk across all categories and that the risk is diversified geographically around the globe.

Limits are set to support central management and limitation of cumulative risks arising from individual natural hazards. One of the key mechanisms for managing risk is a systematic check on the cumulative authorized limits for natural disaster risks. The monitoring and management of limits may include the reallocation or adjustment of capacities. The modeled exposures remained within the authorized limits.

Action that can be taken to mitigate the risk includes management of deductibles and retrocession taking into account risk-bearing capacity and the effective costs of retrocession. Minimum requirements apply in relation to the credit rating of retrocessionaires. To minimize peak risk in connection with natural disasters in Europe, R+V has entered into a retrocession agreement as part of its inward reinsurance business.

R+V monitors the claims rate trend promptly and continuously, allowing it to initiate preventive measures so that it always has a sufficient level of reserves. The reserves position is monitored in a number of ways, including by means of an expert report, which is prepared once a year.

16.5 Specific risk factors

In the case of products with long-term guarantees, which constitute the bulk of the **direct life insurance business**, there is a risk of negative variances over the term of the contracts compared with calculation assumptions because of the length of time covered by the contracts. The relevant risk factors include changes in life expectancy, increasing rates of disability-morbidity, and disproportionately sharp cost increases.

In **health insurance**, which accounts for a substantial proportion of health actuarial risk, there is a risk of higher claims caused by the behavior of the policyholders and service providers.

R+V's **direct non-life insurance and inward non-life reinsurance business** involves the provision of cover for a range of disasters. This includes both natural disasters, such as earthquakes, storms, and floods, and man-made disasters. These events cannot be predicted. Generally speaking, there is both the risk of particularly significant individual loss events and also the risk of a large number of loss events that are each not necessarily significant in themselves. In any one year, the actual impact from the size and frequency of losses could therefore substantially exceed the forecast impact. Climate change represents an additional risk factor in connection with the occurrence of natural disasters. It is reasonable to expect that climate change will lead to an increase in weather-related natural disasters over the long term.

16.6 Claims rate trend in non-life insurance

In the **direct non-life insurance business**, earnings in the reporting period were adversely impacted by storms Friederike and Burglind, which gave rise to claims of €90 million. Storms Wilma and Yvonne led to claims of €50 million. Overall, the level of natural peril losses in 2018 was within the anticipated claims budget.

The claims rate in the **inward reinsurance business** fell significantly year on year. Notable natural disaster events included the Camp Fire in California, Typhoons Jebi and Trami in Japan, and Hurricane Michael in Florida, which together gave rise to a total expense of €149 million.

Changes in claims rates and settlements (net of reinsurance) in direct non-life insurance and inward non-life reinsurance business are shown in Fig. 38.

16.7 Risk position

As at December 31, 2018, the **overall solvency requirement** for **life actuarial risk** amounted to €884 million (December 31, 2017: €868 million). The **upper loss limit** was set at €1,100 million as at the balance sheet date (December 31, 2017: €1,200 million) and was not exceeded at any time during 2018.

As at December 31, 2018, the **overall solvency requirement for health actuarial risk** was measured at €312 million (December 31, 2017: €219 million) with an **upper loss limit** of €350 million (December 31, 2017: €370 million). Again, the risk capital requirement was below the upper loss limit at all times during the course of 2018.

As at December 31, 2018, the **overall solvency requirement** for **non-life actuarial risk** amounted to €3,247 million (December 31, 2017: €3,001 million). The **upper loss limit** was set at €3,650 million as at the balance sheet date (December 31, 2017: €3,580 million). It was not exceeded at any time in the year under review.

The overall solvency requirement for the various types of non-life actuarial risk is shown in Fig. 39. The rise in the overall solvency requirement compared with the prior year resulted first and foremost from business growth. This applied particularly to premium and reserve risk.

FIG. 38 – INSURANCE SECTOR: CLAIMS RATE AND SETTLEMENTS (NET OF REINSURANCE)[1]

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Claims rate (net) as percentage of premiums earned										
Including major/natural disaster claims	76.2	76.6	76.1	76.2	75.5	78.2	75.6	77.7	77.3	73.0
Excluding major/natural disaster claims	71.1	72.8	72.3	74.0	73.8	69.1	72.7	71.4	75.0	73.0
Settlements (net) as percentage of provision for incoming claims										
Non-life	1.1	3.1	3.6	1.6	2.1	0.5	0.3	1.9	4.8	4.8

1 Direct non-life insurance business and inward non-life reinsurance.

FIG. 39 – INSURANCE SECTOR: OVERALL SOLVENCY REQUIREMENT FOR NON-LIFE ACTUARIAL RISK

€ million	Dec. 31, 2018	Dec. 31, 2017
Premium and reserve risk	2,059	1,778
Non-life catastrophe risk	2,047	2,013
Lapse risk	98	91
Total (after diversification)	3,247	3,001

The changes in actuarial risk in direct non-life insurance in 2019 will continue to be shaped by the strategy of achieving long-term profitable growth in all segments of R+V.

In its inward reinsurance business, R+V intends to expand its portfolio, which is well diversified in terms of geography and sector, by continuing the earnings-driven underwriting policy it has pursued in previous years.

R+V has examined the implications of Brexit in a working group and in consultation with consultants in the UK. The outcome is that R+V will continue to operate its inward reinsurance business in the current form.

17 Market risk

17.1 Definition and business background

Market risk describes the risk arising from fluctuation in the level or volatility of market prices of assets, liabilities, and financial instruments that have an impact on the value of the assets and liabilities of the entity. It suitably reflects the structural mismatch between assets and liabilities, in particular with respect to their maturities.

Market risk is broken down into the following subcategories:

– **Interest-rate risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the term structure of interest rates or to the volatility of interest rates.

– **Spread risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of credit spreads above the risk-free interest rate term structure. Default risk and migration risk are also included in this subcategory. The credit spread is the difference in interest rates between a high-risk and a risk-free fixed-income investment. Changes in the credit risk premiums lead to changes in the market value of the corresponding securities.

– **Equity risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of the market prices of equities. Equity investment risk is also a part of equity risk. Equity risk arises from existing equity exposures as a result of market volatility.

– **Currency risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of exchange rates. Currency risk arises as a result of exchange rate volatility either from investments held in a foreign currency or the existence of a currency imbalance between insurance liabilities and investments.

– **Real-estate risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of the market prices of real estate. Real-estate risk can arise as a result of negative changes in the fair value of real estate held directly or indirectly. This may be the result of a deterioration in the specific characteristics of the real estate or a general change in market prices (for example in connection with a real-estate crash).

– **Concentration risk** represents the additional risk for an insurance or reinsurance company stemming either from lack of diversification in the asset portfolio or from a large exposure to the risk of default by a single issuer of securities or a group of related issuers.

According to the Solvency II definition, the bulk of credit risk within market risk is assigned to spread risk. The other parts of credit risk are measured within counterparty default risk and other risk types.

17.2 Risk management

17.2.1 Market risk measurement

The measurement of market risk involves analyzing shock scenarios specified in **Solvency II** requirements, in some cases supplemented by the group's own parameterization.

The capital requirements for **interest-rate risk** are determined on the basis of shock scenarios calculated for an increase in interest rates and a decrease in interest rates. R+V uses the shock factors in the standard formula to calculate the overall solvency requirement for interest-rate risk.

The capital requirements for **spread risk** are calculated using a factor approach based on the relevant lending volume. The level of the shock factor is determined by the security's rating and the modified duration of the investment. With loan securitizations, a distinction is made between single, double, and multiple securitization structures. Depending on which is applicable, different rating-dependent shock factors are used. R+V uses its own shock factors, based on a portfolio model and with particular regard to concentration risk, to calculate the overall solvency requirement.

The capital requirements for **equity risk** are determined on the basis of stress scenarios calculated for a decrease in market value. The stress amounts depend on the equity type, e.g. whether it is listed on a regulated market in a member state of the European Economic Area or Organisation for Economic Co-operation and Development (OECD). The capital requirement for equity risk is based on the relevant equity exposure. It is determined using modeling and risk quantification based on observable data. The parameters are increased in order to take account of default risk and concentration risk. Default risk describes the risk of loss resulting from issuer insolvency.

Currency risk is calculated using a scenario approach that reflects the impact of a decrease or increase in the exchange rate for a foreign currency. The shock factor for determining the overall solvency requirement is based on the individual currency portfolio of R+V. Lower factors are applied for currencies that are pegged to the euro than for those that are not pegged to the euro.

The calculation of **real-estate risk** looks at both property held directly (e.g. land and buildings) and real-estate funds. The shock factor for determining the overall solvency requirement for real-estate risk is a stress scenario adapted from the standard formula and reflects the fact that direct holdings consist overwhelmingly of investments in German real estate and fund holdings consist primarily of European real estate.

The overall solvency requirement for **concentration risk** is not calculated separately because this risk is taken into account in the calculations for equity risk, spread risk, and counterparty default risk.

17.2.2 Principles of market risk management

The management of market risk is a significant element in the management of overall risk at R+V. Market risk at R+V is limited in part by the upper loss limits that are set at the level of the DZ BANK Group.

The risk attaching to investments is managed in accordance with the guidelines specified by EIOPA, the stipulations in the VAG, the information provided in regulatory circulars, and internal investment guidelines (for details, see 'Market risk strategy' in section 15.1). Compliance with the internal provisions in the risk management guidelines for investment risk and with other regulatory investment principles and regulations at R+V is ensured by means of highly skilled investment management, appropriate internal control procedures, a forward-looking investment policy, and other organizational measures. The management of risk encompasses both economic and accounting aspects.

R+V continuously expands and refines the range of instruments used to identify, assess, and analyze the risk attaching to new investments and to monitor risk in the investment portfolio, in order to be able to respond to any changes in the capital markets and to detect, limit, or avoid risk at an early stage.
R+V counters investment risk by observing the principle of achieving the greatest possible security and profitability while ensuring liquidity at all times. By maintaining an appropriate mix and diversification of investments, the investment policy of R+V takes particular account of the objective of risk reduction.

R+V monitors changes in all types of market risk through constant measurement and a process of reporting to the relevant bodies. Risk in all subcategories is quantified through specific economic calculations. Stress tests represent an important early-warning system. In addition to natural diversification via maturity dates, issuers, countries, counterparties and asset classes, limits are also applied in order to mitigate risk.

Regular asset/liability management investigations are carried out at R+V. The necessary capital requirement to maintain solvency is reviewed on an ongoing basis with the support of stress tests and scenario analyses. Specifically, a systematic review is carried out to assess the effects of a long period of low interest rates and volatile capital markets. R+V uses derivatives to manage market risk.

17.2.3 Management of individual market risk categories

In the management of **interest-rate risk**, R+V adheres to the principle of a broad mixture and diversification of investments, combined with balanced risk-taking in selected asset classes and duration management that takes account of the structure of obligations. Furthermore, the use of pre-emptive purchases helps to provide a constant return from investments and to manage changes in interest rates and duration. A portion of the fixed-income investment portfolio has also been protected against a fall in prices.

In the management of **spread risk**, R+V pays particular attention to high credit ratings for investments, with the overwhelming majority of its fixed-income portfolio being held in investment-grade paper (see also Fig. 45 in section 17.5). A significant proportion of the portfolio is also backed by further collateral. The use of third-party credit risk evaluations and internal expert assessments, which are often more rigorous than the credit ratings available in the market, serves to further minimize risk.

Mortgage lending is also subject to strict internal rules that help to limit default risk. Analysis has shown that accounting considerations do not require any loan loss allowances to be recognized at portfolio level.

The management of **equity risk** is based on a core-satellite approach in which the core comprises shares in large, stable companies in indices that can be hedged to which satellite equities are added to improve the risk/return profile. Asymmetric strategies are also used to reduce or increase equity exposure under a rules-based approach. At R+V, equities are used as part of a long-term investment strategy to guarantee that obligations to policyholders can be satisfied; generating profits by exploiting short-term fluctuations to sell shares is not its objective. The risk of having to sell equities at an inopportune moment is mitigated by its broadly diversified portfolio of investments.

Currency risk is controlled by systematic foreign-exchange management. Virtually all reinsurance assets and liabilities are denominated in the same currency.

Real-estate risk is mitigated by diversifying holdings across different locations and types of use. The prudent investment strategy means that these risks are of secondary importance for R+V.

Concentration risk is of minor relevance to R+V and is reduced by maintaining an appropriate mixture and diversification of investments. This is particularly apparent from the granular structure of the issuers in the portfolio.

17.2.4 Distinctive features of managing market risk in personal insurance business

Due to the persistently low level of interest rates, there is a heightened risk that the guaranteed minimum return agreed for certain products when contracts are signed cannot be generated on the capital markets over the long term. This particularly applies to life insurance contracts and casualty insurance contracts with premium refund clauses that guarantee minimum returns. In the case of products with long-term guarantees, there is a risk of negative variances over the term of the contracts compared with calculation assumptions because of the length of time covered by the contracts. The main reasons for variances are the change in the capital market environment and maturity mismatches between investments and insurance contracts. A protracted period of low interest rates increases the market risk arising from investments.

Market risk can be countered by writing new business that takes into account the current capital market situation and by taking the following action to boost the portfolio's risk-bearing capacity. It is crucial to ensure that there is enough free capital that can be made available even in adverse capital market scenarios. The necessary capital requirement to maintain solvency is reviewed on an ongoing basis with the aid of stress tests and scenario analyses as integral components of asset/liability management.

Risk is essentially mitigated by recognizing a supplementary change-in-discount-rate reserve as specified in the Regulation on the Principles Underlying the Calculation of the Premium Reserve (DeckRV) and adding to the discount rate reserves for existing contracts, thereby reducing the average interest liabilities. In 2018, R+V added a total of €305 million to these supplementary reserves in its life insurance business, bringing the overall amount to €3,272 million. The addition to these reserves for casualty insurance with premium refund was €2 million, bringing the total to €34 million. Following the amendment to the

DeckRV toward the end of 2018, there will be a further increase in the supplementary change-in-discount-rate reserve, although this will be in smaller steps over a longer period (using the 'corridor method').

Policyholder participation in the form of future declarations of bonuses is also an important instrument with which to reduce market risk attaching to life insurance.

The breakdown of benefit reserves by discount rate for the main life and casualty insurance portfolios is shown in Fig. 40.

FIG. 40 – INSURANCE SECTOR: BENEFIT RESERVES BY DISCOUNT RATE FOR THE MAIN INSURANCE PORTFOLIOS[1]

Discount rate	Proportion of total benefit reserve in 2018[2]		Proportion of total benefit reserve in 2017[2]	
	(€ million)	(%)	(€ million)	(%)
0.00%	5,713	9.3	5,213	8.9
0.08%	1	-	-	-
0.10%	-	-	-	-
0.25%	853	1.4	729	1.2
0.50%	59	0.1	17	-
0.75%	41	0.1	58	0.1
0.90%	2,720	4.4	1,088	1.9
1.00%	8	-	12	-
1.25%	2,266	3.7	2,119	3.6
1.50%	29	-	41	0.1
1.75%	5,292	8.6	5,067	8.6
1.80%	36	-	15	-
2.00%	445	0.7	352	0.6
2.25%	10,536	17.1	9,837	16.8
2.50%	87	0.1	88	0.1
2.75%	7,876	12.8	7,510	12.8
3.00%	2,798	4.5	3,213	5.5
3.25%	7,000	11.3	6,940	11.8
3.50%	3,857	6.2	4,122	7.0
3.75%	258	0.4	293	0.5
4.00%	7,346	11.9	7,476	12.7

1 The table covers the following insurance products that include a guaranteed rate of return:
- Casualty insurance policies with premium refund
- Casualty insurance policies with premium refund as pension insurance
- Pension insurance policies
- Endowment insurance policies, including capital accumulation, risk and credit insurance policies, pension plans with guaranteed insurance-based benefits
- Capital deposit products.

2 The share of the total benefit reserve attributable to supplementary insurance policies is listed under the relevant basis of calculation for the associated main insurance policy.

A summary of the actuarial assumptions for calculating the benefit reserves for the main life and casualty insurance portfolios is presented in note 11 of the notes to the consolidated financial statements. It forms part of the notes on the accounting policies applicable to the 'Benefit reserve' line item on the balance sheet.

The company actuarial discount rate calculated in accordance with the procedure developed by the Deutsche Aktuarvereinigung e.V. (DAV) [German Actuarial Association] is used in determining the health insurance discount rate. This procedure is based on a fundamental professional principle issued by the DAV for determining an appropriate discount rate. As a result of these calculations, the discount rate was reduced in 2018 for observation units with a premium adjustment effective January 1, 2018. The reason for this action was the persistently low level of interest rates.

17.2.5 Managing risk arising from defined benefit pension obligations

The R+V entities have pension obligations (defined benefit obligations) to their current and former employees. By entering into such direct defined benefit obligations, they assume a number of risks, including risks associated with the measurement of the amounts recognized on the balance sheet, in particular risk arising from a change in the discount rate, risk of longevity, inflation risk, and risk in connection with salary and pension increases. A requirement may arise to adjust the existing provisions for pensions and other post-employment benefits as a result of decisions by the courts, legislation, or changes in the (consolidated) financial reporting. All the plan assets at R+V without exception are assets in reinsured pension schemes and are subject to interest-rate risk. The strategy adopted for the pension assets is predominantly driven by the defined benefit obligations.

17.3 Specific risk factors

Generating the guaranteed return required in its life insurance business may present R+V with additional challenges if interest rates remain low or turn negative and **credit spreads** remain narrow. Compared with actuarial risk, interest-rate risk plays a fairly minor role in non-life insurance business. A rise in interest rates or widening of credit spreads on bonds in the market would lead to a drop in fair values. Falls in fair value of this nature could have a temporary impact on operating profit, or a permanent impact if bonds have to be sold. Given that cash flows in connection with insurance liabilities in the area of life insurance can be readily forecast and the fact that R+V's investments are well diversified, the risk that bonds might have to be sold at a loss before their maturity date is low.

Default risk arises if there is a deterioration in the financial circumstances of issuers or borrowers, resulting in the risk of partial or complete default on receivables or in ratings-related impairment losses. The credit quality of R+V's investments is generally high with a sound collateralization structure. In the dominant public and financial sectors, they are largely loans and advances in the form of government bonds and German and European Pfandbriefe backed by collateral in accordance with statutory requirements.

17.4 Lending volume

17.4.1 Reconciliation of the lending volume

The amount and structure of the lending volume are key factors for the aspects of credit risk reflected in market risk and counterparty default risk. To identify possible risk concentrations, the volume liable to credit risk is broken down by sector, country group, and rating class.

In the Insurance sector, counterparty default risk is of secondary importance compared with market risk and actuarial risk.

Fig. 41 shows a reconciliation of the lending volume on which the risk management is based to individual balance sheet items in order to provide a transparent illustration of the link between the consolidated financial statements and risk management. There are discrepancies between the internal management and external (consolidated) financial reporting measurements for some portfolios owing to the focus on the risk content of the items. Other main reasons for the discrepancies between the two sets of figures are differences in the scope of consolidation, differences in the definition of lending volume, and various differences in recognition and measurement methods.

17.4.2 Change in lending volume

As at December 31, 2018, the total lending volume of R+V had increased by 2 percent to €86.9 billion (December 31, 2017: €84.8 billion). This increase was attributable to the expansion of the investment portfolios in connection with the growth in the insurance business.

The volume of lending in the home finance business totaled €9.9 billion as at December 31, 2018 (December 31, 2017: €9.5 billion). Of this amount, 90 percent was accounted for by loans for less than 60 percent of the value of the property (December 31, 2017: 91 percent). The volume of home finance was broken down by finance type as at the reporting date as follows (figures as at December 31, 2017 shown in parentheses):

- Consumer home finance: €9.3 billion (€9.1 billion)
- Commercial home finance: €0.1 billion (€0.1 billion)
- Commercial finance: €0.5 billion (€0.3 billion).

FIG. 41 – INSURANCE SECTOR: RECONCILIATION OF THE LENDING VOLUME

€ billion

Lending volume for internal management accounts		Reconciliation: Scope of consolidation		Reconciliation: Definition of the lending volume		Reconciliation: Carrying amount and measurement		Lending volume for the consolidated financial statements		
Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	(note 55 to the consolidated financial statements)
								9.3	9.1	of which: mortgage loans
								7.4	7.8	of which: promissory notes and loans
								9.6	9.1	of which: registered bonds
								-	0.6	of which: other loans
								9.2	9.3	of which: variable-yield securities
								49.0	44.6	of which: fixed-income securities
								0.2	0.3	of which: derivatives (positive fair values)
								0.3	0.2	of which: deposits with ceding insurers
86.9	84.8	-1.9	-0.9	0.2	0.2	-0.3	-3.2	84.9	81.0	Total
				Balance as at Dec. 31, 2018				-2.0	-2.3%	
				Balance as at Dec. 31, 2017				-3.8	-4.5%	

Not relevant

In the home finance business, the entire volume disbursed is usually backed by traditional **loan collateral**.

The financial sector and the public sector, which are the dominant **sectors**, together accounted for 71 percent of the total lending volume as at December 31, 2018 (December 31, 2017: 72 percent). This lending mainly comprised loans and advances in the form of German and European Pfandbriefe backed by collateral in accordance with statutory requirements. Loans and advances to the public sector and consumer home finance (retail) highlight the safety of this investment.

Fig. 42 shows the sectoral breakdown of the lending volume in the Insurance sector.

An analysis of the **geographical breakdown** of the lending volume in Fig. 43 reveals that Germany and other industrialized countries accounted for the lion's share – 90 percent – of the lending volume as at the balance sheet date (December 31, 2017: 91 percent). European countries dominated within the broadly diversified exposure in industrialized countries.

The high proportion of obligations in connection with the life insurance business requires investments with longer maturities. This is also reflected in the breakdown of **residual maturities** shown in Fig. 44.

As at December 31, 2018, 83 percent (December 31, 2017: 81 percent) of the total lending volume had a residual maturity of more than 5 years. The increase in long residual maturities was mainly the result of investments in bonds.

By contrast, just 2 percent of the total lending volume was due to mature within 1 year as at December 31, 2018 (December 31, 2017: 4 percent).

The **rating structure** of the lending volume in the Insurance sector is shown in Fig. 45. Of the total lending volume as at December 31, 2018, 80 percent continued to be attributable to investment-grade borrowers (December 31, 2017: 80 percent). This reflects the regulatory requirements and the safety-oriented risk strategy of R+V. The lending volume that is not rated, which remained unchanged year on year at 17 percent of the total lending volume, essentially comprised low-risk consumer home finance for which external ratings were not available.

FIG. 42 – INSURANCE SECTOR: LENDING VOLUME, BY SECTOR

€ billion	Dec. 31, 2018	Dec. 31, 2017
Financial sector	40.0	39.2
Public sector	21.3	21.9
Corporates	15.6	14.4
Retail	9.3	9.0
Industry conglomerates	0.6	0.4
Total	**86.9**	**84.8**

FIG. 43 – INSURANCE SECTOR: LENDING VOLUME, BY COUNTRY GROUP

€ billion	Dec. 31, 2018	Dec. 31, 2017
Germany	31.9	32.1
Other industrialized countries	46.6	44.8
Advanced economies	1.1	1.1
Emerging markets	4.2	3.7
Supranational institutions	3.1	3.1
Total	**86.9**	**84.8**

FIG. 44 – INSURANCE SECTOR: LENDING VOLUME, BY RESIDUAL MATURITY

€ billion	Dec. 31, 2018	Dec. 31, 2017
≤ 1 year	2.1	3.0
> 1 year to ≤ 5 years	12.9	13.1
> 5 years	71.9	68.7
Total	**86.9**	**84.8**

To rate the creditworthiness of the lending volume, R+V uses external ratings that have received general approval. It also applies its own expert ratings in accordance with the provisions of Credit Rating Agency Regulation III to validate the external credit ratings. R+V has defined the external credit rating as the maximum, even in cases where its own rating is better. The ratings calculated in this way are matched to the DZ BANK credit rating master scale using the methodology shown in Fig. 24 (section 8.4.1).

As at the reporting date, the 10 counterparties associated with the largest lending volumes accounted for 21 percent of R+V's total lending volume (December 31, 2017: 22 percent).

17.4.3 Credit portfolios with increased risk content

The credit portfolios with increased risk content are analyzed separately because of their significance for the risk position. The figures presented here are included in the above analyses of the total lending volume.

R+V continuously reviews its credit portfolio with regard to emerging crises. The risks identified are observed, analyzed, and managed with the aid of a regular reporting system and discussions in the operational decision-making committees at R+V. Adjustments are made to the portfolio if necessary.

In 2018, analysis focused particularly on country risk in **Italy** following the formation of the new government and the restructuring in the Italian banking industry. This analysis was used as the basis for determining the implications for the investment portfolio and R+V's Italian subsidiary before specific management action was then initiated.

Investments in **eurozone periphery countries** totaled €6,158 million as at December 31, 2018 (December 31, 2017: €7,574 million), which constituted a decrease of 18 percent. Fig. 46 shows the country breakdown of the exposure.

R+V has also carried out an analysis of all divisions in view of the anticipated **UK exit from the EU**. No material change in the risk position was identified. The principal reason for the continued increased credit risk is that the quality of the investments with individual UK counterparties is adversely impacted by country-specific events even though the creditworthiness of the individual counterparties themselves is not impaired. A disorderly, hard (i.e. 'no deal') Brexit would have more negative consequences than an orderly Brexit (exit with a 'deal').

R+V's investments in the **UK** totaled €3,721 million as at December 31, 2018 (December 31, 2017: €3,741 million). R+V has taken action to mitigate the risk so that it is prepared even if there is a hard Brexit.

17.5 Risk position

As in prior years, market risks were manageable in 2018 and did not have any detrimental impact on the risk position or financial performance of the DZ BANK Group.

In addition to the indebtedness of certain countries and protectionist trends, the currently anticipated change in ECB monetary policy represents a potential risk. This is being countered, particularly with regard to interest-rate risk, by proactive and rigorous asset/liability management and by careful management of risks and investments.

As at December 31, 2018, the **overall solvency requirement for market risk** amounted to €4,343 million (December 31, 2017: €3,240 million) with an **upper loss limit** of €4,350 million (December 31, 2017: €3,800 million). This increase in market risk was attributable to the expansion of the investment portfolios in connection with the growth in the insurance business. It was also due to the fall in the potential for risk mitigation arising from the lower future policyholder participation, which in turn was caused by the fall in interest rates in 2018.

FIG. 45 – INSURANCE SECTOR: LENDING VOLUME, BY RATING CLASS

€ billion		Dec. 31, 2018	Dec. 31, 2017
Investment grade	1A	25.1	22.5
	1B	11.9	8.9
	1C	-	-
	1D	7.7	10.1
	1E	-	-
	2A	7.4	5.7
	2B	5.5	5.1
	2C	5.5	5.4
	2D	2.7	8.3
	2E	-	-
	3A	4.1	2.2
Non-investment grade	3B	0.8	0.6
	3C	0.4	0.3
	3D	-	-
	3E	0.4	0.5
	4A	0.1	0.1
	4B	0.1	0.1
	4C	0.2	0.2
	4D	-	-
	4E	-	-
Default		-	-
Not rated		15.0	14.7
Total		86.9	84.8

FIG. 46 – INSURANCE SECTOR: EXPOSURE IN EUROZONE PERIPHERY COUNTRIES

€ million	Dec. 31, 2018	Dec. 31, 2017
Italy	4,081	5,569
of which: public sector	2,983	4,174
of which: non-public sector	1,099	1,395
of which: financial sector	836	896
Spain	2,077	2,005
of which: public sector	1,402	1,322
of which: non-public sector	675	682
of which: financial sector	468	431
Total	6,158	7,574
of which: public sector	4,384	5,496
of which: non-public sector	1,773	2,078
of which: financial sector	1,304	1,327

Fig. 47 shows the overall solvency requirement for the various types of market risk.

FIG. 47 – INSURANCE SECTOR: OVERALL SOLVENCY REQUIREMENT FOR MARKET RISK

€ million	Dec. 31, 2018	Dec. 31, 2017
Interest-rate risk	1,161	1,475
Spread risk	2,146	1,571
Equity risk	2,289	1,447
Currency risk	249	201
Real-estate risk	425	319
Total (after diversification)	**4,343**	**3,240**

In addition to the overall solvency requirement, a **capital buffer requirement** is calculated for R+V's market risk. This capital buffer requirement partly covers the spread and migration risk arising from sub-portfolios of Italian government bonds. Since the recalculation of the overall solvency requirement as at December 31, 2017, it has also taken account of the increase in market risk stemming from a further refinement of the method for measuring interest-rate risk. Working with DZ BANK, R+V is currently examining what further changes need to be made as a result of the review process conducted by EIOPA under Delegated Regulation (EU) No. 2015/35 (Solvency II Regulation). The capital buffer relating to the refinement of the measurement of interest-rate risk will be removed again once the new methodology has been implemented.

As at December 31, 2018, the capital buffer requirement for market risk totaled €278 million (December 31, 2017 after recalculation: €457 million).

18 Counterparty default risk

18.1 Definition and business background

Counterparty default risk reflects possible losses due to unexpected default or deterioration in the credit standing of counterparties and debtors of insurance and reinsurance companies over the following 12 months. It covers risk-mitigating contracts, such as reinsurance arrangements, securitizations and derivatives, and receivables from intermediaries, as well as any other credit risk that is not otherwise covered by risk measurement.

Counterparty default risk takes account of collateral or other security that is held by the insurance or reinsurance company and any associated risks.

At R+V, risks of this nature particularly relate to counterparties in derivatives transactions, reinsurance counterparties, and defaults on receivables from policyholders and insurance brokers.

18.2 Risk management

18.2.1 Measurement of counterparty default risk and management of limits

The capital requirements for counterparty default risk are determined on the basis of the relevant exposure and the expected losses per counterparty.

R+V manages counterparty default risk at individual entity level.

Transactions involving derivatives are subject to explicit internal guidelines, particularly those regarding volume and counterparty limits. A comprehensive, real-time reporting system enables the various risks to be monitored regularly and presented transparently. Only economic hedges are used and they are not reported on a net basis in the consolidated financial statements.

R+V uses the views expressed by the international rating agencies in conjunction with its own credit ratings to help it to assess counterparty and issuer risk. Compliance with the limits for major counterparties is reviewed on an ongoing basis, with regular checks on limit utilization and compliance with investment guidelines.

18.2.2 Mitigating counterparty default risk

Effective default management mitigates the risks arising from defaults on receivables relating to direct insurance operations with policyholders and insurance brokers. The risk of default on receivables is also addressed by recognizing general loan loss allowances that are deemed to be adequate on the basis of past experience. The average ratio of defaults to gross premiums written over the past 3 years came to 0.1 percent (December 31, 2017: 0.1 percent).

The default risk for receivables arising from inward and ceded reinsurance business is limited by constantly monitoring credit ratings and making use of other sources of information in the market. As was the case at the end of 2017, virtually all receivables arising from ceded reinsurance, which amounted to €23 million as at December 31, 2018 (December 31, 2017: €10 million), were due from entities with a rating of A or higher. In 2018, receivables arising from reinsurance did not represent a material risk due to the excellent credit quality of the reinsurers. There were no material defaults in 2018 or in previous years.

18.3 Specific risk factors

Risk factors in connection with counterparty default risk include unexpected defaults or deterioration in the credit quality of mortgage borrowers, counterparties of derivatives, reinsurance counterparties or policyholders, or insurance brokers.

18.4 Risk position

As at December 31, 2018, the **overall solvency requirement for counterparty default risk** amounted to €79 million (December 31, 2017: €57 million) with an **upper loss limit** of €100 million (December 31, 2017: €130 million). The upper loss limit was not exceeded at any point during 2018.

19 Operational risk

19.1 Definition and business background

Operational risk is defined as the risk of loss arising from inadequate or failed internal processes, personnel, or systems, or from external events; it includes legal risk. Legal risk could arise, in particular, from changes in the legal environment (legislation and decisions by the courts), changes in official interpretations, and changes in the business environment. It follows then that operational risk could arise in any division of R+V.

19.2 Risk management

The **risk capital requirement** for operational risk in the Insurance sector is determined in accordance with the standard formula in Solvency II. The risk calculation uses a factor approach, taking account of premiums, provisions and, in the case of unit-linked business, costs.

R+V uses scenario-based risk self-assessments and risk indicators to manage and control operational risk. In the **risk self-assessments**, operational risk is assessed in terms of the probability of occurrence and the level of loss. Qualitative assessments can be used in exceptional cases.

Risk indicators help the Insurance sector to identify risk trends and concentrations at an early stage and to detect weaknesses in business processes. A system of warning lights is used to indicate risk situations based on specified threshold values. Risk indicators are collected systematically and regularly.

To support the management of operational risk, all R+V's business processes are structured in accordance with the requirements of the **framework guidelines** for employee authority and power of attorney in R+V companies. Divisions not covered by these guidelines are subject to other policy documents, including policies on new business and underwriting.

The **internal control system** is a key instrument used by R+V to **limit operational risk**. Rules and controls in each specialist division and reviews of the use and effectiveness of the internal control system carried out by Group Internal Audit avert the risk of errors and fraud. Payments are largely automated. Powers of attorney and authorizations stored in user profiles, as well as automated submissions for approval based on a random generator, provide additional security. Manual payments are always approved by a second member of staff.

To ensure that it is operational at all times, R+V has a fully integrated **business continuity management system** (BCM system) with a central coordination function. This also includes the contingency and crisis management system and is documented in the business continuity, contingency, and crisis management guidelines. The security and BCM conference with representatives from all divisions provides specialist support and helps to coordinate activities within the R+V subgroup. Reports on significant findings relevant to risk and on any exercises and tests that have been carried out are also submitted to the Risk Committee.

BCM ensures that R+V's operating activities can be maintained in the event of an emergency or crisis. To this end, time-critical business processes are recorded with the necessary resources. Any necessary documentation (such as business continuity planning) is prepared and regularly reviewed. Special organizational structures, such as the R+V crisis management team and the individual business continuity teams in the divisions, have also been set up to deal with emergency and crisis situations. The entire BCM system is subject to ongoing further development in a process of continuous improvement.

For information on the management of significant special operational risks, i.e. HR risk, IT risk, legal risk, and tax risk, please refer to the details on the management of these special risks in the Bank sector, which also apply to the Insurance sector (sections 14.5.1, 14.5.2, 14.5.5, and 14.5.6).

19.3 Specific risk factors

19.3.1 HR risk

The future success of R+V is dependent upon capable managers and employees with the necessary skills and qualifications. There is fierce competition for managerial and administrative staff in the labor market, driven by high demand and insufficient numbers of suitable individuals. Unless the necessary number of suitable managerial and administrative staff can be attracted within the required timeframe, and/or existing managers and employees can be retained, there will be a heightened risk that tasks will not be performed or will not be performed satisfactorily as a result of inadequate expertise in terms of either quality or quantity.

R+V provides long-term professional development and enhanced talent-management activities to ensure that staff members undergo the continuous development and training that will also make it possible to meet future staffing requirements from within the organization. The tools it uses for this purpose include a system for assessing high-potential employees, systematic succession planning, and skills upgrading programs.

In the interest of long-term staff retention, R+V runs programs to establish and enhance its appeal as a place to work, such as corporate health management, support for achieving a work-life balance, and regular staff surveys.

R+V counters operational risk in sales and distribution by providing continuous professional development courses for field sales staff. R+V applies the code of conduct for sales and distribution of the Gesamtverband der Deutschen Versicherungswirtschaft e.V. (GDV) [German Insurance Association]. This code focuses on a relationship between customers, insurance companies, and brokers that is defined by fairness and trust. The requirements set out in the code of conduct are reflected in the principles, policies, and processes of each company.

19.3.2 IT risk

Malfunctions or breakdowns in data processing systems or in the programs used on these systems, including attacks from external sources – such as hackers or malware –, could have an adverse impact on the ability of the Insurance sector to efficiently maintain the processes necessary to carry out operating activities, protect saved data, ensure sufficient control, or continue to develop products and services. Furthermore, such malfunctions or breakdowns could lead to temporary or permanent loss of data, or cause additional costs because the original capability would need to be restored and/or preventive measures introduced to provide protection against similar events in the future.

Quality assurance in IT is based on well-established processes that follow best practice. A meeting is held every working day to discuss current topics and assign people to work on them. In addition, appropriate measures relating to adherence to service level agreements (e.g. system availability) are decided upon at monthly meetings attended by the IT divisional managers.

Comprehensive physical and logical precautionary measures guarantee the security of data and applications and ensure that day-to-day operations are maintained. A particular risk would be a partial or total breakdown in data processing systems.

R+V counters this risk by using two segregated data processing centers in which the data and systems are mirrored, special access security, fire control systems, and an uninterruptible power supply supported by emergency power generators. Regular exercises are carried out to test a defined restart procedure to be used in disaster situations with the aim of checking the efficacy of this procedure. Data is backed up and held within highly secure environments in various buildings. Furthermore, data is mirrored to a tape library at a remote, off-site location. This means that data will still be available, even if all of the data processing centers in Wiesbaden are completely destroyed.

As part of contingency and crisis management systems, R+V has initiated a range of measures to cope with business interruptions. However, the possibility cannot be ruled out that disruption to processes and workflows could be sustained over several days. Moreover, sensitive internal and external interfaces could be jeopardized by long-term business interruptions.

Various IT security management procedures are used to identify, assess, and document cyber risks on an ongoing basis and then to systematically allocate these risks for processing. The processing status and risk treatment are tracked and reported centrally each month.

19.3.3 Legal risk

Legal disputes arising from the processing of insurance claims or benefit payments are covered by insurance liabilities, and therefore do not form part of operational risk. In the year under review, no significant operational risks from non-underwriting legal disputes arose at R+V.

Legal risk could arise, in particular, from changes in the legal environment, changes in official interpretations of relevant regulations, government interventions, court or arbitration proceedings, and changes in the business environment.

R+V monitors and analyzes relevant decisions by the courts with a view to mitigating legal risk by identifying any need for action in good time and implementing specific corrective measures.

19.3.4 Tax risk

Tax risk can arise, in particular, from adverse changes in tax circumstances (tax legislation, decisions by the courts), adverse changes in the interpretation by tax authorities of existing tax legislation, and changes in non-tax regulations.

As a result of tax audits, an alternative assessment of the tax risk or, in some cases, other information could give rise to **retrospective tax liabilities** for periods that have already been assessed. As there are still outstanding audits by the tax authorities relating to a number of financial years, there is a risk that retrospective tax payments could be required and these payments would be subject to interest charges. Business transactions are assessed for tax purposes on the basis of current tax legislation, taking into account the latest decisions by the courts and interpretations by the authorities. The outcome is factored into the measurement of loss allowances. Further risks could arise as a result of **changes in tax law or in decisions by the courts**, which could also have retroactive implications.

19.4 Risk position

As at December 31, 2018, the **overall solvency requirement for operational risk** amounted to €558 million (December 31, 2017: €528 million). The rise in the overall solvency requirement compared with the prior year resulted first and foremost from business growth. The **upper loss limit** applicable at the reporting date was set at €640 million (December 31, 2017: €650 million). The upper loss limit was not exceeded at any time during 2018.

20 Reputational risk

20.1 Definition and business background

Reputational risk is defined as the risk of losses that could arise from possible damage to the reputation of R+V or of the entire industry as a result of a negative perception among the general public (for example, customers, business partners, shareholders, authorities, media).

Reputational risk can arise as an independent risk (primary reputational risk) or as an indirect or direct consequence of other types of risk, such as operational risk (secondary reputational risk).

20.2 Risk management

One of the main objectives of R+V is to ensure that the R+V brand enjoys a positive image in the cooperative financial network and among the public at large. To prevent any damage to this image, R+V ensures that high quality standards are adhered to in product development and in all other parts of the value chain. In addition, R+V's corporate communications are coordinated centrally within the Chief Executive Officer's area of responsibility so that any inaccurate presentation of circumstances can be countered effectively and conclusively. Media reports about the insurance industry in general and R+V in particular are monitored and continuously analyzed across all R+V departments. A continuous improvement process pays close attention to ratings and market comparisons covering service, product quality, and advisory expertise, which are key parameters as far as customer satisfaction is concerned.

For the purposes of managing reputational risk, R+V uses risk indicators that facilitate early identification of risk trends and increase the transparency of risk exposures. A system of warning lights is used to indicate risk situations based on qualitative and quantitative threshold values. Risk indicators are collected systematically and regularly.

R+V's reputational risk is not specifically quantified within the Solvency II framework. However, it is implicitly included in the overall solvency requirement for life actuarial risk (lapse risk).

20.3 Specific risk factors

If R+V acquires a negative reputation, there is a risk that existing or potential customers will be unsettled with the result that existing business relationships might be terminated or it might not be possible to carry out planned transactions. There is also a risk that it will no longer be possible to guarantee the backing of stakeholders, such as network partners and employees, necessary to conduct business operations.

21 Risks from entities in other financial sectors

All entities that form part of the regulatory R+V Versicherung AG insurance group are generally included in the calculation of group solvency. This also applies to non-controlling interests in insurance companies and to entities in other financial sectors.

The **non-controlling interests in insurance companies** mainly relate to reinsurance and insurance companies over which R+V can exercise significant influence but without having complete control. In contrast to the position as at December 31, 2017, there were no non-controlling interests in insurance companies included in the risk measurement as at the reporting date because the previously included long-term equity investment in a Spanish insurance company was sold during 2018.

At R+V, the **entities in other financial sectors** mainly consist of pension funds and occupational pension schemes.

Risk is quantified for the pension funds and occupational pension schemes in accordance with the requirements currently specified by the insurance supervisor. This means applying the capital requirements in Solvency I, which are essentially calculated as a factor of the volume measures of benefit reserves and capital at risk.

R+V Pensionskasse AG is exposed to risks comparable with those faced by the life insurance entities in the R+V subgroup. The main risk management activities applicable in this case are those relating to life actuarial risk (section 16.2.2), market risk (section 17.2), counterparty default risk (section 18.2), and operational risk (section 19.2).

The risk situation in a pension fund is determined to a significant degree by the nature of the pension plans offered. In pension plans offered by R+V involving defined contributions with a minimum benefit, it must be ensured that at least the sum of the contributions paid into the plan (net of any contributions covering biometric risk assumed by R+V) is available on the agreed pension start date.

R+V also offers pension plans that include guaranteed insurance-based occupational incapacity cover as well as pension benefits and benefits for surviving dependants. Market risk and all the risk types covered by actuarial risk are relevant as far as occupational pension provision is concerned. Longevity risk is also important in relation to pensions because of the guaranteed benefits involved. Again, the risk management activities relating to life actuarial risk, market risk, counterparty default risk, and operational risk apply in this case. The ongoing pension plan contributions and the benefit reserve include sufficient amounts to cover the costs of managing pension fund contracts.

In the pension plans involving a benefit commitment without any insurance-based guarantees, R+V does not assume responsibility for any of the pension fund risk or investment risk because the benefits promised by the pension fund are subject to the proviso that the employer will also make up any difference required. This also applies to the period in which pensions are drawn. If the employer fails to make up the difference required, R+V's commitment is reduced to insurance-based guaranteed benefits based on the amount of capital still available.

As at December 31, 2018, the overall solvency requirement for risks in connection with non-controlling interests in insurance companies and entities in other financial sectors stood at €104 million (December 31, 2017: €127 million) with an **upper loss limit** of €145 million (December 31, 2017: €140 million). The upper loss limit was not exceeded at any point during 2018.

Consolidated financial statements

Income statement
for the period January 1 to December 31, 2018

€ million	(Note)	2018	2017
Net interest income	(34)	2,799	2,941
Interest income		5,785	6,252 [1]
Interest income calculated using the effective interest method		3,846	
Interest income not calculated using the effective interest method		1,939	
Current income and expense		73	25
Interest expense		-3,059	-3,336 [1]
Net fee and commission income	(35)	1,955	1,864
Fee and commission income		3,760	3,585
Fee and commission expenses		-1,805	-1,721
Gains and losses on trading activities	(36)	285	506
Gains and losses on investments	(37)	150	10
Other gains and losses on valuation of financial instruments	(38)	-120	289
Premiums earned	(39)	15,997	15,181
Gains and losses on investments held by insurance companies and other insurance company gains and losses	(40)	1,273	3,474
Insurance benefit payments	(41)	-14,208	-15,312
Insurance business operating expenses	(42)	-2,572	-2,436
Loss allowances	(43)	-21	-786
Administrative expenses	(44)	-4,059	-3,959 [1]
Other net operating income	(45)	-109	38
Profit before taxes		1,370	1,810
Income taxes	(46)	-452	-712
Net profit		**918**	**1,098**
Attributable to:			
Shareholders of DZ BANK		824	957
Non-controlling interests		94	141

1 Amount restated (see note 2).

Gains of €7 million within net interest income, gains of €126 million within gains and losses on investments, and losses of €1 million within gains and losses on investments held by insurance companies and other insurance company gains and losses were attributable to gains and losses from the derecognition of financial assets measured at amortized cost (see note 80).

APPROPRIATION OF PROFITS

€ million	2018	2017
Net profit	918	1,098
Non-controlling interests	-94	-141
Appropriation to retained earnings	-500	-633
Unappropriated earnings	**324**	**324**

Statement of comprehensive income for the period January 1 to December 31, 2018

€ million	(Note)	2018
Net profit		918
Other comprehensive income/loss		-483
Items that may be reclassified to the income statement		**-445**
Gains and losses on debt instruments measured at fair value through other comprehensive income	(47)	-654
Gains and losses on cash flow hedges	(47)	-6
Exchange differences on currency translation of foreign operations	(47)	24
Gains and losses on hedges of net investments in foreign operations	(47)	-6
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	(47)	-
Income taxes	(48)	197
Items that will not be reclassified to the income statement		**-38**
Gains and losses on equity instruments for which the fair value OCI option has been exercised		-8
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk		35
Gains and losses arising from remeasurement of defined benefit plans		-84
Income taxes	(48)	19
Total comprehensive income		**435**
Attributable to:		
Shareholders of DZ BANK		417
Non-controlling interests		18

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	2017
Net profit	1,098
Other comprehensive income/loss	23
Items that may be reclassified to the income statement	**1**
Gains and losses on available-for-sale financial assets	28
Gains and losses on cash flow hedges	20
Exchange differences on currency translation of foreign operations	-43
Gains and losses on hedges of net investments in foreign operations	23
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-12
Income taxes	-15
Items that will not be reclassified to the income statement	**22**
Gains and losses arising from remeasurement of defined benefit plans	29
Income taxes	-7
Total comprehensive income	**1,121**
Attributable to:	
Shareholders of DZ BANK	977
Non-controlling interests	144

Balance sheet as at December 31, 2018

ASSETS

€ million	(Note)	Dec. 31, 2018	Dec. 31, 2017
Cash and cash equivalents	(14, 49)	51,845	43,910[1]
Loans and advances to banks	(15, 50)	91,627	89,414[1]
Loans and advances to customers	(15, 51)	174,438	174,376
Hedging instruments (positive fair values)	(16, 52)	883	1,096
Financial assets held for trading	(17, 53)	37,942	38,709
Investments	(18, 54)	48,262	57,486
Investments held by insurance companies	(55, 60)	100,840	96,416
Property, plant and equipment, and investment property	(19, 56, 60)	1,423	1,498
Income tax assets	(20, 57)	1,457	1,127
Other assets	(21, 58, 60)	4,655	4,546
Loss allowances	(22, 59)	-2,305	-2,794
Non-current assets and disposal groups classified as held for sale	(23, 61)	7,133	84
Fair value changes of the hedged items in portfolio hedges of interest-rate risk		533	-274
Total assets		**518,733**	**505,594**

1 Amount restated (see note 2).

EQUITY AND LIABILITIES

€ million	(Note)	Dec. 31, 2018	Dec. 31, 2017
Deposits from banks	(24, 62)	142,486	136,122
Deposits from customers	(24, 63)	132,548	126,319
Debt certificates issued including bonds	(25, 64)	63,909	67,327
Hedging instruments (negative fair values)	(16, 65)	2,516	2,962
Financial liabilities held for trading	(17, 66)	44,979	44,280
Provisions	(26, 67)	3,380	3,372
Insurance liabilities	(11, 68)	93,252	89,324
Income tax liabilities	(20, 57)	920	848
Other liabilities	(69)	7,919	7,523
Subordinated capital	(27, 70)	2,897	3,899
Liabilities included in disposal groups classified as held for sale	(23, 61)	281	-
Fair value changes of the hedged items in portfolio hedges of interest-rate risk		134	113
Equity	(71)	23,512	23,505
Shareholders’ equity		20,775	20,690
Subscribed capital		4,926	4,926
Capital reserve		5,551	5,551
Retained earnings		8,530	7,597
Reserve from other comprehensive income		599	1,444
Additional equity components		845	848
Unappropriated earnings		324	324
Non-controlling interests		2,737	2,815
Total equity and liabilities		**518,733**	**505,594**

Statement of changes in equity

€ million	Sub-scribed capital	Capital reserve	Equity earned by the group	Reserve from other comprehensive income	Addi-tional equity compo-nents	**Share-holders' equity**	Non-controlling interests	**Total equity**
Equity as at Jan. 1, 2017	4,657	4,904	8,148	1,460	848	20,017	2,819	22,836
Net profit	-	-	957	-	-	957	141	1,098
Other comprehensive income/loss	-	-	22	-2	-	20	3	23
Total comprehensive income/loss	**-**	**-**	**979**	**-2**	**-**	**977**	**144**	**1,121**
Capital increase/capital repaid	269	647	-916	-	-	-	-1	-1
Changes in scope of consolidation	-	-	14	-14	-	-	-	-
Acquisition/disposal of non-controlling interests	-	-	41	-	-	41	-60	-19
Dividends paid	-	-	-322	-	-	-322	-87	-409
Distribution of dividend on additional equity components	-	-	-23	-	-	-23	-	-23
Equity as at Dec. 31, 2017	4,926	5,551	7,921	1,444	848	20,690	2,815	23,505
Adjustments due to first-time adoption of IFRS 9	-	-	529	-479	-	50	-5	45
Equity restated as at Jan. 1, 2018	4,926	5,551	8,450	965	848	20,740	2,810	23,550
Net profit	-	-	824	-	-	824	94	918
Other comprehensive income/loss	-	-	-53	-354	-	-407	-76	-483
Total comprehensive income/loss	**-**	**-**	**771**	**-354**	**-**	**417**	**18**	**435**
Capital increase/capital repaid	-	-	-1	-	-3	-4	-9	-13
Changes in scope of consolidation	-	-	-12	13	-	1	4	5
Acquisition/disposal of non-controlling interests	-	-	-41	7	-	-34	-36	-70
Reclassifications within equity	-	-	32	-32	-	-	-	-
Dividends paid	-	-	-322	-	-	-322	-50	-372
Distribution of dividend on additional equity components	-	-	-23	-	-	-23	-	-23
Equity as at Dec. 31, 2018	**4,926**	**5,551**	**8,854**	**599**	**845**	**20,775**	**2,737**	**23,512**

The composition of equity is explained in note 71.

Statement of cash flows

€ million	2018	2017
Net profit	**918**	**1,098**
Non-cash items included in net profit and reconciliation to cash flows from operating activities		
Depreciation, amortization, impairment losses, reversals of impairment losses on assets, and other non-cash changes in financial assets and liabilities	1,706	465
Non-cash changes in provisions	297	-348
Changes in insurance liabilities	4,366	4,435
Other non-cash income and expenses	125	717
Gains and losses on the disposal of assets and liabilities	-77	-1,152
Other adjustments (net)	-2,609	-2,619
Subtotal	4,726	2,596
Cash changes in assets and liabilities arising from operating activities		
Loans and advances to banks	-2,264	1,534[1]
Loans and advances to customers	-8,340	827
Other assets from operating activities	-895	-37
Hedging instruments (positive and negative fair values)	-1,550	27
Financial assets and financial liabilities held for trading	2,284	5,860
Deposits from banks	6,428	6,946
Deposits from customers	6,773	2,799
Debt certificates issued including bonds	-3,448	-10,599
Other liabilities from operating activities	-329	1,235
Interest, dividends, and operating lease payments received	7,653	7,751
Interest paid	-3,746	-4,670
Income taxes paid	-379	-397
Cash flows from operating activities	**6,913**	**13,872**
Proceeds from the sale of investments	19,219	21,090
Proceeds from the sale of investments held by insurance companies	23,566	20,298
Proceeds from the sale of property, plant and equipment, and investment property (excluding assets subject to operating leases)	3	29
Proceeds from the sale of intangible non-current assets	12	6
Payments for the acquisition of investments	-10,583	-8,983
Payments for the acquisition of investments held by insurance companies	-30,487	-25,912
Payments for the acquisition of property, plant and equipment, and investment property (excluding assets subject to operating leases)	-49	-81
Payments for the acquisition of intangible non-current assets	-147	-147
Changes in scope of consolidation	2	7
of which: proceeds from the sale of investments in consolidated subsidiaries net of cash divested	-	4
Cash flows from investing activities	**1,536**	**6,307**
Dividends paid to shareholders of DZ BANK	-322	-322
Dividends paid to non-controlling interests	-50	-87
Distribution of dividend on additional equity components	-23	-23
Other payments to shareholders of DZ BANK	-4	-
Other payments to non-controlling interests	-9	-1
Net change in cash and cash equivalents from other financing activities (including subordinated capital)	-106	-513
Cash flows from financing activities	**-514**	**-946**

1 Amount restated (see note 2).

€ million	2018	2017
Cash and cash equivalents as at January 1	43,910	24,677[1]
Cash flows from operating activities	6,913	13,872[1]
Cash flows from investing activities	1,536	6,307
Cash flows from financing activities	-514	-946
Cash and cash equivalents as at December 31	**51,845**	**43,910**

1 Amount restated (see note 2).

The statement of cash flows shows the changes in cash and cash equivalents during the financial year. Cash and cash equivalents consist of cash on hand, balances with central banks, treasury bills, and non-interest-bearing treasury notes. The cash and cash equivalents do not include any financial investments with maturities of more than 3 months at the date of acquisition. Changes in cash and cash equivalents are broken down into operating, investing, and financing activities.

Cash flows from operating activities comprise cash flows mainly arising in connection with the revenue-producing activities of the group and other activities that cannot be classified as investing or financing activities. Cash flows related to the acquisition and disposal of non-current assets are allocated to investing activities. Cash flows from financing activities include cash flows arising from transactions with equity owners and from other borrowing to finance business activities.

The first-time consolidation of subsidiaries generated a cash inflow of €2 million (2017: €3 million). The deconsolidation of subsidiaries led to a cash outflow of €1 million. In 2017, there had been no impact on cash and cash equivalents from the deconsolidation of subsidiaries.

Notes

A General disclosures

>> 01 Basis of preparation

Pursuant to *Regulation (EC) 1606/2002 of the European Parliament and of the Council of July 19, 2002*, the consolidated financial statements of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK) for the 2018 financial year have been prepared in accordance with the provisions of the International Financial Reporting Standards (IFRS), as adopted by the European Union (EU).

The provisions specified in section 315e (1) of the German Commercial Code (HGB) for companies whose securities are admitted to trading on a regulated market in the EU have also been applied in the consolidated financial statements of DZ BANK. In addition, further standards adopted by Deutsches Rechnungslegungs Standards Committee e.V. [German Accounting Standards Committee] have generally been taken into account where such standards have been published in the German Federal Gazette by the Bundesministerium der Justiz und für Verbraucherschutz [Federal Ministry of Justice and Consumer Protection] pursuant to section 342 (2) HGB.

The DZ BANK Group's financial year is the same as the calendar year. In the interest of clarity, some items on the income statement, the statement of comprehensive income, and the balance sheet have been aggregated and are explained by additional disclosures in the notes. Unless stated otherwise, all amounts are shown in millions of euros (€ million). All figures are rounded to the nearest whole number. This may result in very small discrepancies in the calculation of totals and percentages.

The consolidated financial statements of DZ BANK have been released for publication by the Board of Managing Directors following approval by the Supervisory Board on March 28, 2019.

>> 02 Accounting policies and estimates

Changes in accounting policies

The financial statements of the entities consolidated in the DZ BANK Group have been prepared using uniform accounting policies.

First-time application in 2018 of changes in IFRS

The following new accounting standards, amendments to and clarifications of IFRS, interpretations from the IFRS Interpretations Committee (IFRIC interpretations), and the specified improvements to IFRS are applied for the first time in DZ BANK's consolidated financial statements for the 2018 financial year:

– IFRS 9 *Financial Instruments*,
– IFRS 15 *Revenue from Contracts with Customers*,
– Clarifications to IFRS 15 *Revenue from Contracts with Customers*,
– *Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts* (Amendments to IFRS 4),
– *Classification and Measurement of Share-based Payment Transactions* (Amendments to IFRS 2),
– *Transfers of Investment Property* (Amendments to IAS 40),
– IFRIC 22 *Foreign Currency Transactions and Advance Consideration*,
– *Annual Improvements to IFRSs 2014–2016 Cycle.*

The provisions of IFRS 9 *Financial Instruments* superseded the content of IAS 39 *Financial Instruments: Recognition and Measurement* on January 1, 2018. IFRS 9 includes requirements relating to the following areas, which have been fundamentally revised: classification and measurement of financial instruments, the impairment model for financial assets, and hedge accounting.

As a result of the classification and measurement rules in IFRS 9, financial assets need to be recategorized. In the case of debt instruments, both the business models of the portfolios and the characteristics of the contracted cash flows for the individual financial assets must be taken into account for the purposes of the recategorization. This analysis is carried out by the individual group entities in line with their individual business models and in compliance with group rules laid down centrally. As a result of the analysis, the financial assets are classified as 'financial assets measured at fair value through profit or loss' (fair value PL), 'financial assets measured at fair value through other comprehensive income' (fair value OCI), or 'financial assets measured at amortized cost' (AC). If individual financial assets are classified as 'financial assets measured at fair value through other comprehensive income' or 'financial assets measured at amortized cost', the standard also allows the reporting entity the option of classifying the financial assets concerned as 'financial assets designated as at fair value through profit or loss' (fair value option) to avoid accounting mismatches. The DZ BANK Group uses the fair value option. Equity instruments that are held for trading must be assigned to the category 'financial assets measured at fair value through profit or loss'. For equity instruments not held for trading that would normally have been measured at fair value through profit or loss, reporting entities have the option of recognizing the changes in the fair values of these equity instruments irrevocably in other comprehensive income in subsequent measurement (fair value OCI option). The DZ BANK Group uses this option.

Unlike IAS 39, IFRS 9 specifies that any changes in the value of financial liabilities measured at fair value through profit or loss resulting from a change in the reporting entity's own credit risk must be recognized in other comprehensive income. The other requirements relating to financial liabilities have been carried over from IAS 39 unchanged.

The new impairment model requirements for financial assets measured at amortized cost or at fair value through other comprehensive income have resulted in a fundamental change in the recognition of loss allowances, because losses that are expected to occur now have to be recognized in addition to losses that have actually been incurred. The amount at which expected losses must be recognized depends on whether the credit risk attaching to the financial assets has increased significantly since their initial recognition. If there has been a significant increase, all expected losses over the entire lifetime of the asset concerned must be recognized from this point. Otherwise, the only expected losses that need to be recognized are those that result from possible loss events within the next 12 months. To identify whether there has been a significant increase in credit risk, the current probability of default over the maturity of the instrument (as determined at the reporting date) is generally compared with the probability of default originally expected for the same period. This test can be extended to look at qualitative criteria that increase credit risk. A particular qualitative criterion used to indicate a significant increase in credit risk is if payments are 30 days past due. However, such 30-day past-due payments are generally factored directly into the probability of default by means of a re-rating. In the case of securities, the DZ BANK Group makes use of the exemption provided for in IFRS 9 whereby the requirement to test for a significant increase in credit risk can be disregarded for instruments with low credit risk.

IFRS 9's new hedge accounting model is intended to improve the presentation of internal risk management and entails numerous disclosure requirements. The changes to hedge accounting in IFRS 9 do not apply to the rules on applying portfolio fair value hedge accounting, which continue to be governed by the provisions of IAS 39. The particular risk management strategy and risk management objectives must be documented at the inception of the hedging relationship, as was previously the case. But under IFRS 9, the ratio between the hedged item and the hedging instrument must now also, as a rule, adhere to the stipulations in the risk management strategy. If this ratio changes during a hedging relationship but the risk management objective remains the same, the quantity of the hedged item and the quantity of the hedging instrument in the hedging relationship must be brought into line without the hedge being terminated. Under IFRS 9, it is not possible to discontinue a hedging relationship if the risk management objective continues to be pursued and all other relevant designation criteria continue to be met. The requirements relating to evidence of hedge effectiveness have also changed. Under IFRS 9, retrospective evidence and the previous effectiveness threshold have been eliminated. Evidence of countervailing changes in fair value owing to the economic relationship between the hedged item and the hedging instrument can, under IFRS 9, also be provided on an entirely qualitative basis in certain circumstances without being bound by quantitative thresholds.

Exercising the option provided for in IFRS 9, the DZ BANK Group did not retrospectively restate the figures for the comparative period of 2017 when it adopted IFRS 9 for the first time on January 1, 2018. Instead, either the retained earnings or the reserve from other comprehensive income have been adjusted on the opening balance sheet as at January 1, 2018 by the difference between the previous carrying amount under IAS 39 and the carrying amount under IFRS 9. Because the amounts for 2017 have not been restated retrospectively in accordance with the rules of IFRS 9, the rules of IFRS 9 that apply to the 2018 reporting period always take precedence for disclosures in the consolidated financial statements. Where the presentation for the reporting period does not differ from that of the comparative period, the relevant disclosures in accordance with IAS 39 have been made for the comparative period. However, where the presentation for the reporting period differs from that of the comparative period, the relevant disclosures in accordance with IAS 39, if available, have been shown separately under the heading 'Comparative information in accordance with IAS 39'. If no relevant disclosures in accordance with IAS 39 are available for the comparative period of 2017, no such comparative information has been provided. The approach outlined above has not been applied to the following sections and notes in the financial statements. Equity and liabilities and statement of changes in equity: The revaluation reserve, the cash flow hedge reserve, and the currency translation reserve that existed under IAS 39 have been transferred to the 'Reserve from other comprehensive income' under IFRS 9. The revaluation reserve previously reported in accordance with IAS 39 has been transferred in accordance with IFRS 9 to the reserve from debt instruments measured at fair value through other comprehensive income and the reserve from equity instruments for which the fair value OCI option has been exercised.

The transition to IFRS 9 has resulted in presentation changes at various points in the consolidated financial statements that are also included, where relevant, in the reconciliation tables in the column 'Effects of transition from IAS 39 to IFRS 9'. The main presentation changes are described below in the order in which they appear in the consolidated financial statements.

As a consequence of the application of the new provisions in IAS 1.82 (a) in connection with the switch to IFRS 9, the interest income and current income and expense line item in the income statement will be broken down into 3 separate lines going forward, as follows: interest income calculated using the effective interest method, interest income not calculated using the effective interest method, and current income and expense.

Under IFRS 9, the carrying amounts of line items on the balance sheet must be shown inclusive of the interest entitlement attributable to the line items (gross interest entitlement). Consequently, the recategorization amounts are shown after the gross interest entitlement in the following reconciliation tables and thus, in some cases, differ by a total of €137 million from the amounts recognized as at December 31, 2017. The restatements are indicated by a footnote.

Contrary to the previous approach under IAS 39, IFRS 9 requires the loss allowances for financial instruments in the category ‘financial assets measured at amortized cost’ to be presented as a gross amount in all balance sheet line items. As a result, financial instruments within investments and within other assets are presented as gross amounts under IFRS 9. Consequently, the loss allowances for financial assets measured at amortized cost are now presented under the other assets line item on the balance sheet. In the income statement, therefore, loss allowances now come after the insurance business operating expenses line item. Loss allowances for financial instruments in the category ‘financial assets measured at fair value through other comprehensive income’ are recognized in equity within the change to the reserve from other comprehensive income.

Under IAS 39, impairment losses on financial assets within the investments held by insurance companies and the other assets held by insurance companies line items were immediately netted with the carrying amounts of the corresponding financial assets, both on the balance sheet and in the notes; the carrying amounts were therefore presented as net amounts. Under IFRS 9, investments held by insurance companies and the other assets held by insurance companies continue to be presented on a net basis on the balance sheet. In the disclosures in the notes on investments held by insurance companies (note 55) and in the disclosures on other assets (note 58), the relevant financial assets are presented before deduction of loss allowances (gross presentation) and the level of loss allowances is shown separately.

To reduce the increased complexity of the presentation of the components of the reserve from other comprehensive income that has resulted from the introduction of IFRS 9, these components are aggregated in one column in the statement of changes in equity. The individual components of equity are presented in the disclosures on equity in note 71.

Due to the new presentation rules of IFRS 7.B8E introduced in connection with IFRS 9, the loss allowances recognized for financial guarantee contracts are presented in the consolidated financial statements in note 67 (provisions) as provisions for financial guarantee contracts for the first time, and no longer as liabilities from financial guarantee contracts in note 69 (other liabilities).

As a result of the first-time adoption of the rules of IFRS 9, equity after taxes rose by €45 million. This comprised a €529 million increase attributable to retained earnings, a €479 million decrease attributable to the reserve from other comprehensive income, and a €5 million decrease attributable to non-controlling interests.

In the following tables, the asset line items and the equity and liability line items on the balance sheet, the loss allowances, and the classes pursuant to IFRS 7 have been reconciled from the categories applicable under IAS 39 as at December 31, 2017 – ‘financial instruments held for trading’ (HfT), ‘financial instruments designated as at fair value through profit or loss’ (FVO), ‘held-to-maturity investments’ (HtM), and ‘available-for-sale financial assets’ (AfS) – to the IFRS 9 categories that have applied since January 1, 2018.

The gross carrying amounts of the asset line items on the balance sheet and their categories pursuant to IFRS 9 are derived from the line items and categories pursuant to IAS 39 reconciled to IFRS 9 in the following table:

€ million	IAS 39 carrying amount as at Dec. 31, 2017	Recategorization amount with IAS 39 carrying amount as at Dec. 31, 2017 after gross interest entitlement	Effect of transition from IAS 39 to IFRS 9	IFRS 9 carrying amount as at Jan. 1, 2018
CASH AND CASH EQUIVALENTS	43,910	43,910	-	43,910
AC		43,637	-	43,637
from cash and cash equivalents – LaR		43,637	-	43,637
Further cash and cash equivalents		273	-	273
LOANS AND ADVANCES TO BANKS	89,414	90,017	-437	89,580
Fair value PL		22	-	22
from loans and advances to banks – LaR		22	-	22
Fair value option		1,910	-	1,910
from loans and advances to banks – FVO		1,910	-	1,910
Fair value OCI		386	2	388
from loans and advances to banks – LaR		386	2	388
AC		87,389	-424	86,965
from financial assets held for trading – HfT		680	-	680
from loans and advances to banks – LaR		86,709	-424	86,285
AC due to mandatory de-designation FVO		289	-16	273
from loans and advances to banks – FVO		289	-16	273
Further loans and advances to banks		22	-	22
LOANS AND ADVANCES TO CUSTOMERS	174,376	174,764	327	175,091
Fair value PL		537	-61	476
from loans and advances to customers – FVO		14	-	14
from loans and advances to customers – AfS		22	-	22
from loans and advances to customers – LaR		501	-61	440
Fair value option		2,056	105	2,161
from loans and advances to customers – FVO		1,629	-	1,629
from loans and advances to customers – LaR		427	105	532
Fair value OCI		3,885	-22	3,864
from loans and advances to customers – FVO		1,578	-	1,578
from loans and advances to customers – LaR		2,307	-22	2,285
AC		164,441	293	164,734
from financial assets held for trading – HfT		251	-	251
from loans and advances to customers – LaR		164,190[1]	293	164,484
AC due to voluntary de-designation FVO		398	17	415
from loans and advances to customers – FVO		398	17	415
AC due to mandatory de-designation FVO		529	-15	514
from loans and advances to customers – FVO		529	-15	514
Further loans and advances to customers		2,918	10	2,928

€ million	IAS 39 carrying amount as at Dec. 31, 2017	Recategorization amount with IAS 39 carrying amount as at Dec. 31, 2017 after gross interest entitlement	Effect of transition from IAS 39 to IFRS 9	IFRS 9 carrying amount as at Jan. 1, 2018
LOSS ALLOWANCES	-2,794	-2,931[1]	69	-2,862
HEDGING INSTRUMENTS (POSITIVE FAIR VALUES)	1,096	1,012	66	1,078
Fair value PL		**1,012**	**66**	**1,078**
from hedging instruments (positive fair values) – HfT		1,012	66	1,078
FINANCIAL ASSETS HELD FOR TRADING	38,709	37,802	-77	37,725
Fair value PL		**37,802**	**-77**	**37,725**
from hedging instruments (positive fair values) – HfT		84	-	84
from financial assets held for trading – HfT		37,548	-75	37,473
from investments – AfS		94	-	94
from loans and advances to banks – LaR		76	-2	74
INVESTMENTS	57,486	57,622	-870	56,753
Fair value PL		**2,682**	**31**	**2,713**
from financial assets held for trading – HfT		4	-	4
from investments – FVO		1,992	-	1,992
from investments – AfS		213	-	213
from investments – AfS (AC)		123	11	134
from investments – LaR		351	20	371
Fair value option		**6,277**	**18**	**6,295**
from investments – FVO		5,040	-	5,040
from investments – AfS		673	-	673
from investments – HtM		565	18	583
Fair value OCI		**24,548**	**3**	**24,551**
from financial assets held for trading – HfT		67	-	67
from investments – FVO		2,525	-	2,525
from investments – AfS		20,647	-	20,647
from investments – LaR		767	11	777
from investments – HtM		543	-8	535
Fair value OCI option		**485**	**-**	**485**
from investments – AfS		373	-	373
from investments – AfS (AC)		112	-	112
AC		**22,741**	**-906**	**21,834**
from financial assets held for trading – HfT		160	19	179
from investments – AfS		18,740	-929	17,810
from investments – LaR		3,301	4	3,305
from investments – HtM		540	-	540
AC due to voluntary de-designation FVO		**13**	**-**	**13**
from investments – FVO		13	-	13
AC due to mandatory de-designation FVO		**17**	**-**	**17**
from investments – FVO		17	-	17
Further investments		**858**	**-14**	**844**

€ million	IAS 39 carrying amount as at Dec. 31, 2017	Recategorization amount with IAS 39 carrying amount as at Dec. 31, 2017 after gross interest entitlement	Effect of transition from IAS 39 to IFRS 9	IFRS 9 carrying amount as at Jan. 1, 2018
INVESTMENTS HELD BY INSURANCE COMPANIES	96,416	96,416	2,021	98,437
Fair value PL		9,768	188	9,956
from investments held by insurance companies – HfT		299	-	299
from investments held by insurance companies – FVO		395	-4	392
from investments held by insurance companies – AfS		8,148	-	8,148
from investments held by insurance companies – LaR		879	192	1,071
from investments held by insurance companies – AfS (AC)		48	-	48
Fair value OCI		52,891	1,834	54,725
from investments held by insurance companies – FVO		161	-	161
from investments held by insurance companies – AfS		41,292	-	41,292
from investments held by insurance companies – LaR		11,438	1,834	13,272
Fair value OCI option		5,067	-	5,067
from investments held by insurance companies – AfS		5,051	-	5,051
from investments held by insurance companies – AfS (AC)		17	-	17
AC		14,349	-	14,349
from investments held by insurance companies – LaR		14,349	-	14,349
AC due to mandatory de-designation FVO		14	1	15
from investments held by insurance companies – FVO		14	1	15
Further investments held by insurance companies		14,327	-3	14,324
PROPERTY, PLANT AND EQUIPMENT, AND INVESTMENT PROPERTY	1,498	1,498	-	1,498
INCOME TAX ASSETS	1,127	1,127	31	1,158
OTHER ASSETS	4,546	4,546	-2	4,544
AC		441	-1	440
from other assets – LaR		441	-1	440
Further other assets		4,105	-1	4,104
NON-CURRENT ASSETS AND DISPOSAL GROUPS CLASSIFIED AS HELD FOR SALE	84	84	-	84
FAIR VALUE CHANGES OF THE HEDGED ITEMS IN PORTFOLIO HEDGES OF INTEREST-RATE RISK	-274	-274	667	393
AC		-274	667	393
from fair value changes of the hedged items in portfolio hedges of interest-rate risk – LaR		-274	667	393
TOTAL ASSETS	505,594	505,594	1,794	507,388

1 Higher values than under IAS 39 due to recognition of gross interest entitlement.

Due to the switch from the categorization rules for financial assets under IAS 39 to those under IFRS 9, the measurement categories changed at the time of first-time adoption for the following reasons:

Due to their assignment to the hold to collect and sell business model and their fulfillment of the solely payments of principal and interest (SPPI) criterion, financial assets were recategorized from the IAS 39 categories 'financial instruments held for trading' and 'financial instruments designated as at fair value through profit or loss' to the IFRS 9 category 'financial assets measured at fair value through other comprehensive income'. The effective interest rate for these recategorizations was between 0.00 percent and 4.75 percent. The fair value of the financial assets amounted to €3,599 million as at December 31, 2018. If the recategorization had not taken place, there would have been a loss on the change in fair value of €234 million, which would have been recognized in profit or loss. The total interest income recognized up to the reporting date that arose from the recategorization from the IAS 39 category 'financial instruments designated as at fair value through profit or loss' to the IFRS 9 category 'financial assets measured at fair value through other comprehensive income' was €54 million.

Financial assets were recategorized from the IAS 39 categories 'financial instruments held for trading' and 'financial instruments designated as at fair value through profit or loss' to the IFRS 9 category 'financial assets measured at amortized cost' due to the lack of intention to trade them, their assignment to the hold to collect business model, and their fulfillment of the SPPI criterion. The effective interest rate for these recategorizations was between 0.21 percent and 4.10 percent. The fair value of the financial assets amounted to €4,454 million as at December 31, 2018. If the recategorization had not taken place, there would have been a loss on the change in fair value of €23 million that would have been recognized in profit or loss, and a loss on the change in fair value of €25 million that would have been recognized in other comprehensive income. The total interest expense recognized up to the reporting date that arose from the recategorization from the IAS 39 category 'financial instruments held for trading' to the IFRS 9 category 'financial assets measured at amortized cost' was €1 million. The total interest income recognized up to the reporting date that arose from the recategorization from the IAS 39 category 'financial instruments designated as at fair value through profit or loss' to the IFRS 9 category 'financial assets measured at amortized cost' was €19 million.

Financial assets were recategorized from the IAS 39 category 'available-for-sale financial assets' to the IFRS 9 category 'financial assets measured at fair value through profit or loss' due to their assignment to the trading and other business model and their non-fulfillment of the SPPI criterion.

Financial assets – particularly in liquidity portfolios – were recategorized from the IAS 39 category 'available-for-sale financial assets' to the IFRS 9 category 'financial assets measured at amortized cost' due to their assignment to the hold to collect business model and their fulfillment of the SPPI criterion. The fair values of financial assets transferred from the category 'available-for-sale financial assets' to the category 'financial assets measured at amortized cost' in the transition from IAS 39 to IFRS 9 amounted to €11,666 million as at December 31, 2018. If the recategorization had not taken place, there would have been a loss on the change in fair value of €22 million that would have been recognized in profit or loss, and a loss on the change in fair value of €521 million that would have been recognized in other comprehensive income.

Promissory notes, in particular, were recategorized from the IAS 39 category 'loans and receivables' to the category 'financial assets measured at fair value through other comprehensive income' on the date of transition to IFRS 9 due to their assignment to the 'hold to collect and sell' business model and their fulfillment of the SPPI criterion.

Promissory notes, in particular, were recategorized from the IAS 39 category 'loans and receivables' to the IFRS 9 category 'financial assets measured at fair value through profit or loss' due to their assignment to the 'trading and other' business model and their non-fulfillment of the SPPI criterion, and in order to avoid accounting mismatches.

Financial assets were recategorized from the IAS 39 category 'held-to-maturity investments' to the IFRS 9 category 'financial assets measured at amortized cost' due to their assignment to the hold to collect business model and their fulfillment of the SPPI criterion.

Financial assets were recategorized from the IAS 39 category ‘held-to-maturity investments’ to the IFRS 9 category ‘financial assets measured at fair value through other comprehensive income’ due to their assignment to the hold to collect and sell business model and their fulfillment of the SPPI criterion.

Financial assets were recategorized from the IAS 39 category ‘held-to-maturity investments’ with exercise of the fair value option to the IFRS 9 category ‘financial assets measured at fair value through profit or loss’ in order to avoid accounting mismatches.

In order to improve presentation following the introduction of IFRS 9, overnight money has been prospectively reclassified from loans and advances to banks – AC to loans and advances to customers – AC. Also in connection with the introduction of IFRS 9, outstanding items under cancelled finance leases have been prospectively reclassified from loans and advances to customers – LaR to further loans and advances to customers, because these will be presented as loans and advances to customers – finance leases. These transition effects did not impact on equity. The €14 million decrease within further investments was due to the IFRS 9 transition effect on joint ventures accounted for using the equity method in the consolidated financial statements.

The gross carrying amounts of the equity and liability line items on the balance sheet and their categories pursuant to IFRS 9 are derived from the line items and categories pursuant to IAS 39 reconciled to IFRS 9, as presented in the following table:

€ million	IAS 39 carrying amount as at Dec. 31, 2017	Recategoriza-tion amount with IAS 39 carrying amount as at Dec. 31, 2017	Effect of transition from IAS 39 to IFRS 9	IFRS 9 carrying amount as at Jan. 1, 2018
DEPOSITS FROM BANKS	136,122	136,122	-41	136,081
Fair value option		**4,993**	**23**	**5,016**
from deposits from banks – FVO		4,954	23	4,977
from deposits from banks – AC		39	-1	38
AC		**131,129**	**-64**	**131,065**
from deposits from banks – FVO		201	-	201
from deposits from banks – AC		130,907	-63	130,844
from financial liabilities held for trading – HfT		22	-1	21
DEPOSITS FROM CUSTOMERS	126,319	126,221	55	126,277
Fair value option		**11,245**	**61**	**11,305**
from deposits from customers – FVO		10,793	-23	10,770
from deposits from customers – AC		452	84	536
AC		**114,976**	**-5**	**114,971**
from deposits from customers – FVO		333	-58	276
from deposits from customers – AC		114,643	52	114,696
DEBT CERTIFICATES ISSUED INCLUDING BONDS	67,327	67,327	4	67,332
Fair value option		**14,117**	**13**	**14,130**
from debt certificates issued including bonds – FVO		13,864	-6	13,859
from debt certificates issued including bonds – AC		252	19	271
AC		**53,295**	-	**53,295**
from debt certificates issued including bonds – AC		53,295	-	53,295
AC due to mandatory de-designation FVO		**-84**	**-9**	**-93**
from debt certificates issued including bonds – FVO		-84	-9	-93
Hedging instruments (negative fair values)	2,962	2,962	275	3,237
Fair value PL		**2,962**	**275**	**3,237**
from hedging instruments (negative fair values) – HfT		2,962	275	3,237

€ million	IAS 39 carrying amount as at Dec. 31, 2017	Recategoriza-tion amount with IAS 39 carrying amount as at Dec. 31, 2017	Effect of transition from IAS 39 to IFRS 9	IFRS 9 carrying amount as at Jan. 1, 2018
FINANCIAL LIABILITIES HELD FOR TRADING	44,280	44,378	-270	44,108
Fair value PL		44,378	-270	44,108
from financial liabilities held for trading – HfT		44,259	-270	43,989
from deposits from banks – FVO		22	-	22
from deposits from customers – FVO		97	-	97
PROVISIONS	3,372	3,372	67	3,439
Provisions for financial guarantee contracts and loan commitments		128	67	195
Further provisions		3,244	-	3,244
INSURANCE LIABILITIES	89,324	89,324	1,694	91,018
INCOME TAX LIABILITIES	848	848	70	918
OTHER LIABILITIES	7,523	7,523	-107	7,416
Fair value PL		39	-	39
from other liabilities – HfT		39	-	39
AC		1,408	-1	1,407
from other liabilities – AC		1,408	-1	1,407
Further other liabilities		6,077	-106	5,971
SUBORDINATED CAPITAL	3,899	3,898	2	3,900
Fair value option		642	2	644
from subordinated capital – FVO		601	-	601
from subordinated capital – AC		41	2	43
AC		3,256	-	3,256
from subordinated capital – FVO		2	-	2
from subordinated capital – AC		3,254	-	3,254
FAIR VALUE CHANGES OF THE HEDGED ITEMS IN PORTFOLIO HEDGES OF INTEREST-RATE RISK	113	113	-	113
AC		113	-	113
from fair value changes of the hedged items in portfolio hedges of interest-rate risk – AC		113	-	113
EQUITY	23,505	23,505	45	23,550
TOTAL EQUITY AND LIABILITIES	505,594	505,594	1,794	507,388

Due to the switch from the categorization rules for financial liabilities under IAS 39 to those under IFRS 9, the categories changed at the time of first-time adoption for the following reasons:

Financial liabilities were recategorized from the IAS 39 categories ‘financial instruments held for trading’ and ‘financial instruments designated as at fair value through profit or loss’ to the IFRS 9 category ‘financial liabilities measured at amortized cost’ because of the existing intention to hold them and not exercise the fair value option. The fair value of the financial liabilities amounted to €524 million as at December 31, 2018. If this recategorization had not taken place, a loss on the change in fair value of €2 million would not have been recognized in profit or loss. The effective interest rate for these recategorizations was between 0.00 percent and 0.67 percent. The total interest expense recognized up to the reporting date that arose from the recategorization from the IAS 39 category ‘financial instruments held for trading’ to the IFRS 9 category ‘financial liabilities measured at amortized cost’ was €1 million. The total interest expense recognized up to the reporting date that arose from the recategorization from the IAS 39 category 'financial instruments designated as at fair value through profit or loss' to the IFRS 9 category 'financial liabilities measured at amortized cost' was €8 million.

Financial liabilities were recategorized from the IAS 39 category 'financial liabilities measured at amortized cost' to the IFRS 9 category 'financial liabilities measured at fair value through profit or loss' due to the intention to trade them or due to exercise of the fair value option.

Following the introduction of IFRS 9, the fair value option under IAS 39 is no longer exercised because the accounting mismatches under IAS 39 have ceased to exist under IFRS 9. However, the new fair value option under IFRS 9 is now exercised owing to the emergence of new accounting mismatches for other financial liabilities.

In order to improve presentation following the introduction of IFRS 9, registered securities issued have been prospectively reclassified from deposits from customers – FVO to deposits from banks – FVO. Also to improve presentation, fixed-term deposits have been prospectively reclassified from deposits from banks – AC to deposits from customers – AC. These transition effects did not impact on equity.

The reconciliation of loss allowances, broken down by the asset line items on the balance sheet and their categories pursuant to IFRS 9, is derived from the line items and categories pursuant to IAS 39 shown in the following table:

€ million	Loss allowances under IAS 39 as at Dec. 31, 2017	Recategoriza-tion amount with IAS 39 carrying amount as at Dec. 31, 2017 after gross interest entitlement	Effect of transition from IAS 39 to IFRS 9	Loss allowances under IFRS 9 as at Jan. 1, 2018	Loss allowances (FVOCI) under IFRS 9 as at Jan. 1, 2018
LOANS AND ADVANCES TO BANKS	**19**	**20**	**11**	**31**	
AC		**20**	**11**	**31**	
from loans and advances to banks – LaR		20	11	31	
LOANS AND ADVANCES TO CUSTOMERS	**2,775**	**2,911**	**-150**	**2,761**	**4**
Fair value PL		**56**	**-56**	**-**	
from loans and advances to customers – LaR		56	-56	-	
Fair value OCI		**2**	**-2**	**-**	**4**
from loans and advances to customers – LaR		2	-2	-	4
AC		**2,827**	**-99**	**2,727**	
from loans and advances to customers – LaR		2,827[1]	-99	2,727	
Finance lease receivables from customers		**26**	**8**	**34**	
INVESTMENTS			**70**	**70**	**44**
Fair value OCI			**-**	**-**	**44**
from investments – FVO			-	-	3
from investments – AfS			-	-	3
from investments – LaR			-	-	38
AC			**70**	**70**	
from financial assets held for trading – HfT			8	8	
from investments – AfS			38	38	
from investments – LaR			24	24	
INVESTMENTS HELD BY INSURANCE COMPANIES			**3**	**3**	**4**
Fair value OCI			**-**	**-**	**4**
from investments held by insurance companies – AfS			-	-	3
from investments held by insurance companies – LaR			-	-	1
AC			**3**	**3**	
from investments – LaR			3	3	
OTHER ASSETS			**2**	**2**	
AC			**2**	**2**	
from other assets – LaR			2	2	
TOTAL LOSS ALLOWANCES	**2,794**	**2,931**	**-64**	**2,867**	**52**

1 Higher values than under IAS 39 due to recognition of gross interest entitlement.

The introduction of IFRS 9 has not resulted in any changes to the assignment of financial assets or financial liabilities to the IFRS 7 classes of financial instruments. As a result of the recategorization of financial assets and financial liabilities under IFRS 9, the net carrying amounts for the classes of financial assets and financial liabilities changed as shown in the following table:

€ million	**IAS 39 carrying amount as at Dec. 31, 2017**	Recategorization amount with IAS 39 carrying amount as at Dec. 31, 2017 after gross interest entitlement	Effect of transition from IAS 39 to IFRS 9	**IFRS 9 carrying amount as at Jan. 1, 2018**
Classes of financial assets	**483,322**	**483,381**	**1,719**	**485,101**
Financial assets measured at fair value	151,850	149,329	2,087	151,416
Financial assets measured at amortized cost	328,558	331,138	-369	330,769
Finance leases	2,914	2,914	2	2,916
Classes of financial liabilities	**382,702**	**382,702**	**-14**	**382,688**
Financial liabilities measured at fair value	78,064	78,375	103	78,478
Financial liabilities measured at amortized cost	304,404	304,093	-78	304,015
Financial guarantee contracts and loan commitments	234	234	-39	195

As a result of the new IFRS 9 impairment model for financial assets, the loss allowances recognized for the classes of financial assets changed as shown in the following table:

€ million	**Loss allowances under IAS 39 as at Dec. 31, 2017**	Recategorization amount with IAS 39 carrying amount as at Dec. 31, 2017 after gross interest entitlement	Effect of transition from IAS 39 to IFRS 9	**Loss allowances under IFRS 9 as at Jan. 1, 2018**	**Loss allowances (FVOCI) under IFRS 9 as at Jan. 1, 2018**
Loss allowances	**2,794**	2,931	-64	**2,867**	**52**
Financial assets measured at fair value		58	-58	-	52
Financial assets measured at amortized cost	2,768	2,847[1]	-13	2,833	
Finance leases	26	26	8	34	

1 Higher values than under IAS 39 due to recognition of gross interest entitlement.

The provisions in IFRS 15 *Revenue from Contracts with Customers* supersede the rules in IAS 18 *Revenue* and IAS 11 *Construction Contracts* as well as the related interpretations IFRIC 13 *Customer Loyalty Programmes*, IFRIC 15 *Agreements for the Construction of Real Estate*, IFRIC 18 *Transfers of Assets from Customers*, and SIC-31 *Revenue – Barter Transactions Involving Advertising Services*. Under IFRS 15, revenue from contracts with customers must be recognized when control of the agreed goods or services passes to the customer and the customer can benefit from these goods or services. The principles for the recognition and measurement of revenue from contracts with customers, which have been standardized in IFRS 15, are derived from the 5 steps defined in the standard. The new standard does not distinguish between different types of orders and goods/services but instead provides uniform criteria for determining whether a performance obligation is satisfied at a point in time or over time. Furthermore, IFRS 15 requires additional qualitative and quantitative disclosures regarding the nature, amount, timing, and uncertainty of revenue, and regarding cash flows under contracts with customers. The new provisions under IFRS 15 do not have any impact on the recognition of income reported in connection with financial instruments in accordance with IFRS 9 or of income arising from insurance contracts pursuant to IFRS 4 or leases pursuant to IAS 17.

The implementation of IFRS 15 may give rise to contract assets and contract liabilities. When one of the parties has fulfilled its contractual obligations, a contract asset or contract liability has to be recognized, depending on whether the entity has provided the goods/services or the customer has made the payment. Any unconditional right to receive consideration is recognized as a receivable. Impairment on receivables and contract assets accounted for in accordance with IFRS 15 must be determined in accordance with IFRS 9. In this context, IFRS 15 makes reference to the rules of the simplified approach in IFRS 9, which requires the expected losses over the lifetime to be recognized immediately. The significant increase in credit risk in connection with a transfer between stages is no longer measured for loss allowances in respect of IFRS 15 line items.

Exercising the option provided for in IFRS 15, the DZ BANK Group did not retrospectively restate the figures for the comparative period of 2017 when it adopted IFRS 15 for the first time on January 1, 2018. Instead, it adopted IFRS 15 using the modified retrospective application method. In this method, IFRS 15 is applied to new contracts and to existing contracts that have not yet been completed on the date of initial application. To ascertain the effect of initial application of IFRS 15, the revenue for each as yet uncompleted contract recognized in accordance with IAS 18 from the start of the contract up to December 31, 2017 had to be compared with the revenue that would have been recognized if IFRS 15 had been applied from the start of the contract. The difference between these two amounts had to be recognized as a cumulative adjustment to retained earnings in the opening balance sheet as at January 1, 2018. There were no cumulative adjustments to retained earnings in the DZ BANK Group as a result of the first-time adoption of IFRS 15.

The clarifications to IFRS 15 published in April 2016 related to 3 topics (identification of performance obligations, principal versus agent considerations, and licensing of intellectual property) and provided transitional relief for contracts that were entered into before the beginning of the earliest presented period or were amended before this period. The DZ BANK Group has applied the exemptions for the first-time adoption of IFRS 15 to all contractual changes made before January 1, 2018 and has not reassessed these contracts or amended their presentation retrospectively.

The impact of IFRS 15 was assessed at the end of 2017. The group entities analyzed their contracts from the perspective of the 5 steps defined in IFRS 15. The group entities mainly identified revenue within the scope of IFRS 15 under fee and commission income. The identified impact related primarily to principal versus agent considerations where fee and commission income and fee and commission expenses now had to be presented on a gross basis. In accordance with the requirements of IAS 18, the front-end fees recognized under fee and commission income from securities business on the date of sale had been reported as a net figure, i.e. reduced by the proportion of the sales commission forwarded to sales partners and representing a deduction from revenue. Following the first-time adoption of IFRS 15, the recognized front-end fees in the reporting year have been reported gross because the contractually agreed sales services were performed by the DZ BANK Group itself; the sales commission paid to sales partners has been reported under fee and commission expenses from securities business.

From 2018 onward, income from administrative and general fees related to performance obligations fulfilled by the DZ BANK Group as an agent are reduced by the fees paid to external service providers, again as a result of the initial application of IFRS 15. In addition, the income included in other fee and commission income derived from the brokering of sales for investment funds from third-party investment management companies, i.e. income earned as an agent, has for the first time been reported only in the amount of the margin generated (after deduction of amounts paid to sales partners). Consequently, the application of IFRS 15 led to an increase in fee and commission income of €54 million, a rise in fee and commission expenses of €57 million, and a decline in general and administrative expenses related to auditing costs of €3 million.

In individual cases, contract assets and contract liabilities may be recognized under other assets and other liabilities. The DZ BANK Group is using the simplified approach to determine impairment pursuant to IFRS 9 consistently for contract assets and receivables accounted for in accordance with IFRS 15.

In September 2016, the IASB published *Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts* (Amendments to IFRS 4). The additions to IFRS 4 in the version endorsed by the EU not only include the overlay approach but also give insurers that are part of a financial conglomerate the option to postpone first-time adoption of IFRS 9 until January 1, 2021. The DZ BANK Group did not apply the overlay approach or postpone first-time adoption of IFRS 9 for its insurance companies, so IFRS 9 was implemented groupwide with effect from January 1, 2018.

Classification and Measurement of Share-based Payment Transactions (Amendments to IFRS 2) focuses on individual issues in connection with the accounting treatment of share-based payment transactions that are cash-settled. The main change or addition is that IFRS 2 now contains provisions that govern the calculation of the fair value of the obligations resulting from share-based payments. These amendments have no material significance for DZ BANK's consolidated financial statements.

Transfers of Investment Property (Amendments to IAS 40) relates to the accounting treatment of investment property that is under construction or development. Under IAS 40, a property's classification as investment property starts or finishes when there is a change of use. The list in IAS 40.57 sets out evidence of a change of use. As this list was formulated as an exhaustive list, it was uncertain whether a property under construction or development would be covered by this principle. The amendments to IAS 40 clarify that this principle does also apply to unfinished property. The list in IAS 40.57 is now explicitly described as non-exhaustive. There is no material impact on DZ BANK's consolidated financial statements.

IFRIC 22 *Foreign Currency Transactions and Advance Consideration* clarifies which exchange rate to use for the receipt or payment of advance consideration in a foreign currency. The interpretation stipulates that the exchange rate must be based on the time at which the non-monetary asset or non-monetary liability resulting from the advance consideration is initially recognized. If there are multiple payments or receipts of consideration in advance, a transaction date – and thus an exchange rate – is established for each individual payment or receipt. These new stipulations have no material impact on DZ BANK's consolidated financial statements.

The amendments to IAS 28 *Investments in Associates and Joint Ventures* as part of the *Annual Improvements to IFRSs 2014–2016 Cycle* clarify that the option for venture capital organizations, investment funds, and similar entities to measure their investments in associates and joint ventures at fair value through profit or loss may be exercised separately for each individual investment. These amendments have no material significance for DZ BANK's consolidated financial statements.

Changes in IFRS endorsed by the EU but not yet adopted

The DZ BANK Group has decided against voluntary early adoption of the following new financial reporting standards, amendments to IFRS, and IFRIC interpretations:

- IFRS 16 *Leases*,
- *Prepayment Features with Negative Compensation* (Amendments to IFRS 9),
- *Long-term Interests in Associates and Joint Ventures* (Amendments to IAS 28),
- IFRIC 23 *Uncertainty over Income Tax Treatments*.

The provisions of IFRS 16 *Leases* will supersede the content of IAS 17 *Leases*. The main changes introduced by IFRS 16 relate to accounting by lessees. In the future, lessees will have to recognize on the balance sheet right-of-use assets for all leases and corresponding lease liabilities for the contracted payment obligations. Exemptions will be permitted for leases involving low-value assets and short-term leases. For lessees and lessors, the disclosures required in the notes to the financial statements under IFRS 16 will be considerably more extensive than under IAS 17. The new provisions under IFRS 16 will affect the DVB and VR LEASING subgroups as lessors and all group companies that are lessees with leased or rented assets. A significant portion of the payment agreements under non-cancellable leases – minimum lease payments from operating leases amounting to €943 million were reported on the balance sheet date for the last time – will satisfy the definition of a lease under IFRS 16. It is anticipated that the balance sheet will be lengthened by a figure in the mid-three-digit millions because of the right-of-use assets and lease liabilities that will now need to be recognized.

The implementation of IFRS 16 is not expected to have any material impact on DZ BANK's consolidated financial statements.

The amendments in IFRS 16 must be applied to financial years beginning on or after January 1, 2019. They must be adopted using either a fully retrospective approach or a modified retrospective approach. The DZ BANK Group will adopt IFRS 16 using the modified retrospective application method by recognizing the cumulative effect of initially applying the standard as at January 1, 2019 in retained earnings. In this method, IFRS 16 will be applied to new contracts and to existing contracts that have not yet been completed on the date of initial application.

Prepayment Features with Negative Compensation (Amendments to IFRS 9) provides clarity on the classification and measurement of financial instruments with symmetric termination rights. The amendments explicitly state that the SPPI criterion under IFRS 9 is not breached in the event of reasonable negative compensation for early termination of the contract. The amendments are required to be applied for the first time from January 1, 2019. No impact on DZ BANK's consolidated financial statements is expected.

Long-term Interests in Associates and Joint Ventures (Amendments to IAS 28) clarifies that an entity applies the rules of IFRS 9 to long-term interests in associates or joint ventures that form part of its net investment in the associate or joint venture but to which the equity method is not applied. The initial application date for the amendments is January 1, 2019. No impact on DZ BANK's consolidated financial statements is expected.

IFRIC 23 *Uncertainty over Income Tax Treatments* sets out rules on the recognition and measurement of tax risk exposures, thereby closing gaps in this regard in IAS 12 Income Taxes. IFRIC 23 mainly addresses the following: the decision as to whether an entity should consider the uncertain tax treatment of specific circumstances independently or collectively; assumptions to be made by an entity in relation to tax authorities' examinations; the determination of taxable profit (tax loss), tax bases, unused tax losses, unused tax credits, and tax rates; and the effects of changes in facts and circumstances. The tax risks must be measured using the most likely amount or the expected value. The interpretation specifies that an entity should use the measurement method that best reflects the risk involved.

The application of IFRIC 23 is expected to lead to little or no changes in accounting treatment because tax risk exposures have already been recognized with the best possible value in the past. The interpretation is required to be applied for the first time from January 1, 2019.

Changes in IFRS that have not been endorsed by the EU

The following new accounting standards, amended accounting standards, and IFRS improvements, which have been issued by the IASB, have not yet been endorsed by the EU:

– IFRS 17 *Insurance Contracts*,
– *Plan Amendment, Curtailment or Settlement* (Amendments to IAS 19),
– Amendments to References to the Conceptual Framework in IFRS Standards,
– Amendments to IFRS 3 Business Combinations,
– *Definition of Material* (Amendments to IAS 1 and IAS 8),
– *Annual Improvements to IFRSs 2015–2017 Cycle.*

IFRS 17 *Insurance Contracts* supersedes IFRS 4 *Insurance Contracts* and has the objective of ensuring consistent, principles-based accounting treatment of all insurance contracts. It includes principles for recognition, measurement, presentation, and disclosures in respect of insurance contracts and requires insurance liabilities to be measured using the latest amount equating to the fulfillment cash flows. In the general model, measurement is based on a '3 building blocks' approach. Insurance contracts with a term of less than a year can be recognized using a simplified method, the premium allocation approach. The group companies are currently examining the impact on DZ BANK's consolidated financial statements. IFRS 17 must be applied for financial years beginning on or after January 1, 2021. The IASB is currently proposing that the initial application of IFRS 17 be postponed by a year to January 1, 2022. Early adoption of IFRS 17 is permitted.

As a result of *Plan Amendment, Curtailment or Settlement* (Amendments to IAS 19), there will be a mandatory requirement in the future for any amendment, curtailment, or settlement of a defined benefit plan to be accompanied by a recalculation of the current service cost and the net interest for the remainder of the financial year using the latest actuarial assumptions that have been used for the necessary remeasurement of the net liability (asset). The amendments to the standard also include additions to clarify the effect of a plan amendment, curtailment, or settlement on the requirements regarding the asset ceiling. The amendments are required to be applied for the first time from January 1, 2019. Early adoption is permitted subject to incorporation into EU law.

The aim of the amendments to IFRS 3 is to establish a better distinction between the acquisition of a business and the acquisition of a group of assets. To satisfy the new definition of the term 'business', an acquisition must include inputs and a substantive process that together significantly contribute to the ability to create outputs. The amended definition must be applied to all acquisitions for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020. Earlier adoption is permitted subject to incorporation of the amendments into EU law.

The objective of the amendments to IAS 1 and IAS 8 is to tighten up the definition of the term 'material' without fundamentally altering the application of the principle of materiality. In particular, the amendments introduce the new notion of 'obscuring information' and place 'obscuring' on a par with omitting or misstating information. Subject to incorporation of the amendments into EU law, they are planned to be applied prospectively to financial years beginning on or after January 1, 2020.

The impact of the aforementioned amendments and improvements to IFRS on DZ BANK's consolidated financial statements is currently being examined.

The initial application dates for the issued amendments to IFRS are subject to the proviso that the amendments must first be incorporated into EU law.

Changes in presentation

The following presentation changes have been made with effect from 2018 in order to provide reliable and more relevant information:

From the 2018 financial year, the brokering fees in connection with the brokering of third-party bank guarantee credits (2017: €57 million) have been reported under interest expense and no longer within fee and commission expense. This change is intended to improve the presentation of the substance of these brokering fees because they are not one-time fees and their measurement is based on the amount of the underlying loan or advance.

Net income from the business combination with WGZ BANK, which was recognized in the 2017 consolidated financial statements, is no longer shown as a separate line item in the 2018 consolidated financial statements. As a result, the administrative expenses recognized for the comparative period in the 2018 consolidated financial statements have increased by €91 million to €3,959 million.

In note 34 (net interest income), interest payments from derivatives in the fair value PL category that have an economic relationship with financial instrument assets and liabilities in the fair value option category have, from 2018, been netted on a uniform basis throughout the group and reported under interest income or interest expense. The corresponding comparative figures for 2017 have been restated. The changes have been highlighted with a footnote ('amount restated') in the income statement and in the relevant notes. There was no impact on the statement of comprehensive income or on the statement of cash flows for the period January 1 to December 31, 2017 or on the balance sheet as at December 31, 2017.

Income statement for the period January 1 to December 31, 2017

€ million	2017 before restatement	Amount of restatement	**2017 after restatement**
Net interest income	2,941	-	**2,941**
Interest income	6,667	-415	**6,252**
(...)	-	-	**-**
Interest expense	-3,751	415	**-3,336**
(...)	-	-	**-**
Profit before taxes	1,810	-	1,810
Income taxes	-712	-	**-712**
Net profit	**1,098**	**-**	**1,098**

The deposit facilities on the balance sheet will no longer be recognized under loans and advances to banks. Instead, they will be reported as balances with central banks within the cash and cash equivalents line item, bringing their recognition into line with industry practice. This presentation change is being carried out retrospectively. Consequently, the comparative disclosures for 2017 have been restated in the consolidated financial statements for 2018. The changes have been highlighted with a footnote ('amount restated') on the balance sheet, in the statement of cash flows, and in the relevant notes. There was no impact on the income statement or statement of comprehensive income for the period January 1 to December 31, 2017.

Balance sheet as at December 31, 2017

ASSETS

€ million	Dec. 31, 2017 before restatement	Amount of restatement	Dec. 31, 2017 after restatement
Cash and cash equivalents	12,835	31,075	43,910
Loans and advances to banks	120,489	-31,075	89,414
(...)			
Total assets	**505,594**	-	**505,594**

Balance sheet as at January 1, 2017

ASSETS

€ million	Jan. 1, 2017 before restatement	Amount of restatement	Jan. 1, 2017 after restatement
Cash and cash equivalents	8,515	16,162	24,677
Loans and advances to banks	107,253	-16,162	91,091
(...)			
Total assets	**509,447**	-	**509,447**

Statement of cash flows for the period January 1 to December 31, 2017

€ million	2017 before restatement	Amount of restatement	2017 after restatement
(...)			
Loans and advances to banks	-13,379	14,913	1,534
(...)			
Cash flows from operating activities	**-1,041**	**14,913**	**13,872**
Cash flows from investing activities	**6,307**	-	**6,307**
Cash flows from financing activities	**-946**	-	**-946**

€ million	2017 before restatement	Amount of restatement	2017 after restatement
Cash and cash equivalents as at January 1	8,515	16,162	24,677
Cash flows from operating activities	-1,041	14,913	13,872
Cash flows from investing activities	6,307	-	6,307
Cash flows from financing activities	-946	-	-946
Cash and cash equivalents as at December 31	**12,835**	**31,075**	**43,910**

In note 49 (cash and cash equivalents), the disclosure 'of which: with Deutsche Bundesbank' will no longer be included, reflecting industry practice. With the aim of providing more reliable and more relevant information, other minor changes have been made to the presentation of the balance sheet disclosures in notes 50 (loans and advances to banks), 51 (loans and advances to customers), 52 (hedging instruments (positive fair values)), 53 (financial assets held for trading), 54 (investments), 63 (deposits from customers), and 65 (hedging instruments (negative fair values)). The presentation of the corresponding comparative disclosures has been changed in the notes.

Sources of estimation uncertainty

It is necessary to make assumptions and estimates in accordance with the relevant financial reporting standards in order to determine the carrying amounts of assets, liabilities, income, and expenses recognized in these consolidated financial statements. These assumptions and estimates are based on historical experience, planning, and expectations or forecasts regarding future events.

Assumptions and estimates are used primarily in determining the fair value of financial assets and financial liabilities and in identifying any impairment of financial assets. Estimates also have a material impact on determining the impairment of goodwill or intangible assets acquired as part of business combinations. Furthermore, assumptions and estimates affect the measurement of insurance liabilities, provisions for employee benefits, provisions for share-based payment transactions, provisions relating to building society operations, and other provisions as well as the recognition and measurement of income tax assets and income tax liabilities.

Fair values of financial assets and financial liabilities

If there are no prices available for certain financial instruments from active markets, the fair values of such financial assets and financial liabilities have to be determined on the basis of estimates, resulting in some uncertainty. Uncertainties associated with estimates arise primarily if fair values are determined using valuation techniques involving significant valuation parameters that are not observable in the market. This affects both financial instruments measured at fair value and financial instruments measured at amortized cost whose fair values are disclosed in the notes. The measurement parameter assumptions and measurement methods used to determine fair values are described in the financial instruments disclosures in notes 74 and 75.

Impairment of financial assets

When an impairment test (as described in note 5) is carried out for financial assets that constitute debt instruments or for loan commitments and financial guarantee contracts, it is necessary to determine estimated future cash flows from interest payments and the repayment of principal as well as from any recovery of collateral. This requires estimates and assumptions regarding the amount and timing of future cash flows, in turn giving rise to some uncertainty. The factors influencing impairment that are defined on a discretionary basis include economic conditions, the financial performance of the counterparty, and the value of the collateral held. When an impairment test for portfolios is carried out, parameters such as probability of default, which are calculated with the help of statistical models, are used in the estimates and assumptions.

Goodwill and intangible assets

The recognition of goodwill is largely based on estimated future income, synergies, and non-recognizable intangible assets generated by business combinations or acquired as part of business combinations. The recoverability of the carrying amount is verified by means of budget accounts that are largely based on estimates. Identifiable intangible assets acquired as part of business combinations are recognized on the basis of their future economic benefits. These benefits are assessed by management using reasonable, well-founded assumptions. The estimates applied in the case of business combinations are described in note 89.

Insurance liabilities

The measurement of insurance liabilities involves the exercise of discretion, estimates, and assumptions, especially in relation to mortality, rates of return on investment, cancellations, and costs. Actuarial calculation methods, statistical estimates, blanket estimates, and measurements based on past experience are used. The basic approaches used in the measurement of insurance liabilities are described in the insurance business disclosures in note 11.

Provisions for employee benefits, provisions for share-based payment transactions, and other provisions

Uncertainty associated with estimates in connection with provisions for employee benefits arises primarily from the measurement of defined benefit obligations, on which actuarial assumptions have a material effect. Actuarial assumptions are based on a large number of long-term, forward-looking factors, such as salary increases, annuity trends, and average life expectancy.

In the case of provisions for share-based payment transactions, estimation uncertainty arises from the way in which fair value is determined. This fair value is based on assumptions regarding the payout amount, which in turn depends on the performance of the variables specified in the underlying agreements.

Building society simulations (collective simulations) are used to forecast building society customers' future behavior in order to measure the provisions relating to building society operations. Uncertainty in connection with the measurement of these provisions is linked to assumptions to be made about future customer behavior, which take account of various scenarios and measures. The main inputs for the collective simulations are presented in note 26.

Actual cash outflows in the future related to items for which other provisions have been recognized may differ from the forecast utilization of the provisions.

The basis for measurement and the assumptions and estimates underlying the calculation of provisions are described in note 26.

Income tax assets and liabilities

The deferred tax assets and liabilities described in note 57 are calculated on the basis of estimates of future taxable income in taxable entities. In particular, these estimates have an effect on any assessment of the extent to which it will be possible to make use of deferred tax assets in the future. In addition, the calculation of current tax assets and liabilities for the purposes of preparing financial statements involves estimates of details relevant to income tax.

>> 03 Scope of consolidation

In addition to DZ BANK as the parent, the consolidated financial statements for the year ended December 31, 2018 include 25 subsidiaries (2017: 27) and 6 subgroups (2017: 6) comprising a total of 359 subsidiaries (2017: 401). An investee is included in the scope of consolidation as a subsidiary from the date on which DZ BANK obtains control over it. DZ BANK controls an investee when DZ BANK directly or indirectly has power over the investee, is therefore exposed to significant variable returns from its involvement with the investee, and has the ability to affect the variable returns from the investee through this power. In some cases, discretion is required to be exercised when deciding whether DZ BANK controls an investee. All the relevant facts and circumstances are considered when making this decision. This is particularly applicable to principal/agent relationships, which require an assessment of whether DZ BANK or other parties with decision-making rights are acting as principal or as an agent. With regard to principal/agent relationships, a considerable amount of discretion has to be exercised in order to assess the appropriateness of contractually agreed remuneration and of the level of the variable returns received.

In the reporting period, VR Payment GmbH, Frankfurt am Main, (until January 3, 2019: CardProcess GmbH, Karlsruhe) was included in the scope of consolidation as a subsidiary for the first time. There were no other material changes.

The consolidated financial statements include 20 joint arrangements in the form of joint ventures with at least one other entity outside the group (2017: 21) and 44 associates (2017: 44) over which DZ BANK has significant influence. These entities are accounted for using the equity method. There are currently no joint arrangements classified as joint operations. DZ BANK has joint control over an arrangement when there is a contractual agreement in place that requires decisions about the arrangement's relevant activities to be reached with the unanimous consent of all the parties sharing control. DZ BANK has a significant influence over an investee if it can participate in the financial and operating policy decisions of the investee without having control or joint control over it. This is assumed to be the case where between 20 and 50 percent of the voting shares are held.

The shareholdings of the DZ BANK Group are listed in full in note 103.

>> 04 Procedures of consolidation

Financial information in the consolidated financial statements contains data from the parent company, which incorporates data from its consolidated subsidiaries. The parent company and the consolidated subsidiaries are presented as a single economic entity.

The subsidiaries of the DZ BANK Group are the directly or indirectly controlled entities. An entity is deemed to be controlled by the group if the group is exposed to variable returns from its relationship with the entity and can affect those returns through its power over the entity.

Unless otherwise contractually agreed, control exists over an entity if the group holds more than half of the direct or indirect voting rights. The assessment of whether control exists also takes account of potential voting rights, provided they are considered substantial.

The group also considers itself to have control over an entity in cases where it does not hold the majority of the voting rights but does have the ability to unilaterally direct the relevant activities of the entity concerned.

The DZ BANK Group conducts a review at least once every six months to decide which subsidiaries are to be consolidated.

When preparing the consolidated financial statements, uniform accounting policies are used for like transactions.

The consolidated subsidiaries have generally prepared their financial statements on the basis of a financial year ended December 31, 2018. There is one subsidiary (2017: 1 subsidiary) included in the consolidated financial statements with a different reporting date for its annual financial statements. With 47 (2017: 40) exceptions, the separate financial statements of the entities accounted for using the equity method are prepared to the same balance sheet date as that of the parent company. There is no resulting material impact in respect of the subsidiaries and associates concerned, and therefore no interim financial statements have been prepared.

Intragroup assets and liabilities, as well as intragroup income and expenses, are eliminated in full. Intragroup profits or losses resulting from transactions within the group are also eliminated in full.

When a subsidiary is consolidated, the carrying amount of the investment in the subsidiary is offset against the proportion of equity attributable to the subsidiary. Any share of a subsidiary's equity not attributable to the parent company is reported under equity as non-controlling interests.

Goodwill resulting from offsetting the acquisition cost of a subsidiary against the equity remeasured at fair value on the acquisition date is recognized as goodwill when the acquisition method is applied. It is recognized under other assets. Goodwill is tested for impairment at least once a year. Any negative goodwill is recognized in profit or loss on the acquisition date.

If the group loses control over a subsidiary, the assets and liabilities of this former subsidiary are derecognized when control is lost. The carrying amount of all the investments in the former subsidiary that is no longer subject to control is derecognized and the fair value of the consideration received is recognized. The gain or loss arising in connection with the loss of control is also recognized.

Investments in joint ventures and associates are accounted for using the equity method and reported on the balance sheet under investments or investments held by insurance companies.

Using the equity method, the group's investments in associates and joint ventures are initially recognized at cost. Subsequently, the carrying amount is increased (or decreased) to recognize the group's share of the profit/loss or other changes to the net assets of the associate or joint venture after the acquisition.

If the group loses its significant influence over an associate or joint venture, the gain or loss arising from the disposal of the long-term equity investment accounted for using the equity method is recognized.

>> 05 Financial instruments

Categories of financial instruments

Financial assets measured at fair value through profit or loss (fair value PL)

Financial assets that are not measured at amortized cost or at fair value through other comprehensive income are classified as 'financial assets measured at fair value through profit or loss'. This category is broken down into the following subcategories:

Financial assets mandatorily measured at fair value through profit or loss

The subcategory 'financial assets mandatorily measured at fair value through profit or loss' covers financial assets that do not meet the IFRS 9 SPPI criterion or that were acquired for the purpose of selling them in the near term. To this end, these financial assets must be part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking, or must be derivatives, except for derivatives that are designated hedging instruments.

Contingent considerations in a business combination

This subcategory covers contingent considerations that the acquirer has classified as financial assets in the context of a business combination.

Financial assets designated as at fair value through profit or loss (fair value option)

Financial assets may be assigned to the subcategory 'financial assets designated as at fair value through profit or loss' by exercising the fair value option, provided that the application of this option eliminates or significantly reduces measurement or recognition inconsistencies (accounting mismatches). The fair value option is applied to eliminate or significantly reduce accounting mismatches that arise if non-derivative financial instruments and related derivatives used to hedge such instruments are measured differently. Derivatives are measured at fair value through profit or loss, whereas non-derivative financial instruments are measured at amortized cost or changes in fair value may be recognized in other comprehensive income. If no hedge accounting takes place, this gives rise to accounting mismatches that can be significantly reduced by applying the fair value option. The fair value option is used in the context of financial assets to prevent accounting mismatches that could arise in connection with loans and advances to banks and customers and bearer bonds.

Financial assets measured at fair value through other comprehensive income (fair value OCI)

This category is broken down into the following subcategories:

Financial assets mandatorily measured at fair value through other comprehensive income

A financial asset is assigned to this subcategory if it is held in accordance with a business model aimed both at collecting contractual cash flows and at selling financial assets. Moreover, the contractual terms of the financial asset must give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding (SPPI criterion).

Because of the SPPI criterion, these financial assets only comprise debt instruments. They are measured at fair value. Interest income, loss allowances, and currency translation effects must be recognized in profit or loss. Differences between the amortized cost and the fair value are recognized in other comprehensive income. The amounts recognized in other comprehensive income must be recycled to the income statement upon derecognition.

Financial assets designated as at fair value through other comprehensive income (fair value OCI option)

There is an irrevocable option to designate equity instruments as ‘financial assets designated as at fair value through other comprehensive income’ (fair value OCI option) upon initial recognition. Changes in fair value are recognized in other comprehensive income, except in the case of dividends that do not constitute repayment of capital. The cumulative other comprehensive income is not subsequently recycled to the income statement, e.g. due to derecognition of the instrument. After derecognition of these equity instruments, the cumulative other comprehensive income is reclassified to retained earnings. The fair value OCI option can generally only be exercised for equity instruments that are not held for trading and do not constitute contingent consideration recognized by the acquirer in a business combination pursuant to IFRS 3.

Financial assets measured at amortized cost (AC)

A financial asset is assigned to this category if it is held in accordance with a business model aimed at holding financial assets for the purpose of collecting contractual cash flows. The contractual terms of the financial asset must give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Because of the SPPI criterion, financial assets in this category only comprise debt instruments. They are measured at amortized cost using the effective interest method. Interest income, loss allowances, and currency translation effects must be recognized in profit or loss.

Financial liabilities measured at fair value through profit or loss (fair value PL)

Financial liabilities that are not measured at amortized cost are classified as ‘financial liabilities measured at fair value through profit or loss’. This category is broken down into the following subcategories:

Financial liabilities mandatorily measured at fair value through profit or loss

The subcategory ‘financial liabilities mandatorily measured at fair value through profit or loss’ covers financial liabilities that are issued with the intention of repaying them in the near term. To this end, these financial liabilities must be part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking, or must be derivatives, except for derivatives that are designated hedging instruments.

Contingent considerations in a business combination

This subcategory covers contingent considerations that the acquirer has classified as financial liabilities in the context of a business combination.

Financial liabilities designated as at fair value through profit or loss (fair value option)

Financial liabilities may be assigned to the 'financial instruments designated as at fair value through profit or loss' subcategory by exercising the fair value option, provided that the application of this option eliminates or significantly reduces measurement or recognition inconsistencies (accounting mismatches), the financial liabilities are managed as a portfolio on a fair value basis, or they include one or more embedded derivatives required to be separated from the host contract. In the case of financial liabilities, the fair value option is exercised to eliminate or significantly reduce accounting mismatches for loan liabilities to banks and customers, issued registered or bearer Pfandbriefe, other bonds and commercial paper, and registered or bearer subordinated liabilities. Some of the promissory notes and bonds are structured financial instruments containing derivatives (in the form of caps, floors, collars, or call options) for which bifurcation is not required. The derivative components of these instruments are subject to economic hedging that does not meet the criteria for the application of hedge accounting.

The fair value option is also applied to structured financial liabilities containing embedded derivatives requiring bifurcation, provided that the embedded derivatives cannot be measured separately and the financial liabilities are not designated as held for trading. The issued financial instruments in this case are primarily guarantee certificates, discount certificates, profit-participation certificates, variable-rate bonds, inflation-linked notes, collateralized loan obligations, and credit-linked notes.

As regards financial liabilities designated as at fair value through profit or loss, any gains/losses resulting from a change in the fair value of a financial liability that is attributable to a change in the liability's credit risk must be recognized in other comprehensive income. Under IAS 39, the gains or losses from such changes were recognized in profit or loss. The rest of the change in the fair value of this liability is recognized in profit or loss. The amounts recognized in other comprehensive income are reclassified to retained earnings on derecognition of the relevant financial liability.

Financial liabilities measured at amortized cost (AC)

For measurement subsequent to initial recognition, financial liabilities are generally categorized as 'financial liabilities measured at amortized cost', except in the following cases: financial liabilities measured at fair value through profit or loss, financial liabilities that arise when a transfer of a financial asset does not satisfy the condition for derecognition or accounting treatment is based on a continuing involvement, financial guarantee contracts, loan commitments with an interest rate below the market interest rate, and contingent consideration recognized by the acquirer in a business combination pursuant to IFRS 3.

In accordance with IAS 32, shares in partnerships are normally categorized as debt instruments. Given their subordinated status compared with the liabilities of the partnerships concerned, non-controlling interests in partnerships are reported as subordinated capital. Profit attributable to non-controlling interests is recognized under other liabilities, provided that the resulting liability is not of a subordinated nature. Non-controlling interests in partnerships are classified as 'share capital repayable on demand' and are assigned to the 'financial liabilities measured at amortized cost' category.

This category also includes liabilities under compensation payment obligations owed to non-controlling interests in consolidated subsidiaries. These liabilities arise if DZ BANK or some other entity controlled by DZ BANK has concluded a profit transfer agreement with a subsidiary in accordance with section 291 (1) of the German

Stock Corporation Act (AktG) under which there are non-controlling interests. Liabilities under compensation payment obligations are recognized at the amount of the discounted obligation.

In addition, this category includes liabilities from capitalization transactions that are not designated as unit-linked insurance products. There is no significant transfer of insurance risk in these transactions and they do not therefore satisfy the criteria for an insurance contract under IFRS 4. As a consequence, such transactions need to be treated as financial instruments in accordance with IFRS 9.

The provisions in IAS 39 distinguished between the following categories of financial assets:

– Financial instruments at fair value through profit or loss,
– Loans and receivables,
– Held-to-maturity investments, and
– Available-for-sale financial assets.

It was possible to include in the 'held-to-maturity investments' category non-derivative financial assets with fixed or determinable payments and fixed maturity that an entity had the positive intention and ability to hold to maturity. These investments were measured at amortized cost. The premiums and discounts were allocated over the expected life of the instrument using the effective interest method.

The 'available-for-sale financial assets' category was used for financial assets that could not be classified in any other category. They were measured at fair value. Any changes in fair value between 2 balance sheet dates were recognized in other comprehensive income. The changes in fair value reported on the balance sheet were included in the revaluation reserve as part of equity. When financial assets in this category were sold, gains and losses recognized in the revaluation reserve were reclassified to the income statement. Equity instruments in this category were measured at cost if their fair value could not be reliably determined.

Unlike IAS 39, IFRS 9 specifies that any changes in the value of financial liabilities measured at fair value through profit or loss resulting from a change in own credit risk must be recognized in other comprehensive income.

Other financial instruments

Hedging instruments

The designation of derivative and non-derivative financial assets and liabilities as hedging instruments is governed by IFRS 9. The recognition and measurement of these hedging instruments is described in note 16.

Liabilities from financial guarantee contracts

Liabilities from financial guarantee contracts measured in accordance with IFRS 9 must be recognized as a liability at fair value by the issuer of the guarantee at the date of issue. The fair value is normally equivalent to the present value of the consideration received for issuing the financial guarantee contract. In any subsequent measurement, the obligation must be measured at the higher of the amount determined in accordance with the impairment model and the amount initially recognized less, where appropriate, the cumulative amount of income recognized in accordance with the principles of IFRS 15. In the presentation of financial guarantee contracts, the guarantee commission receivables due from the beneficiary to the DZ BANK Group as the issuer of the guarantee are offset against guarantee obligations (net method).

Receivables and payables under finance leases
Receivables and payables under finance leases fall within the scope of IAS 17.

Financial assets and financial liabilities specific to insurance business
In addition to financial instruments that fall within the scope of IFRS 9, financial assets and financial liabilities arising from the insurance business are recognized and measured in accordance with the provisions of the HGB and other German accounting provisions applicable to insurance companies, as required by IFRS 4.25(c).

Deposits with ceding insurers are recognized at their nominal amounts. Receivables arising out of direct insurance operations and receivables arising out of reinsurance operations are recognized at their nominal amounts net of payments made. Impairment losses on receivables arising out of direct insurance operations and on receivables arising out of reinsurance operations are recognized directly in the carrying amounts. Assets related to unit-linked contracts are measured at fair value through profit or loss on the basis of the underlying investments.

Deposits received from reinsurers, payables arising out of direct insurance operations and payables arising out of reinsurance operations are recognized at their nominal amounts.

Deposits with ceding insurers as well as assets related to unit-linked contracts are reported on the balance sheet under investments held by insurance companies. Deposits received from reinsurers, receivables and payables arising out of direct insurance operations, and receivables and payables arising out of reinsurance operations are recognized under other assets or other liabilities.

Initial recognition and derecognition of financial assets and financial liabilities

Derivatives are initially recognized and derecognized on the trade date. Regular way purchases and sales of non-derivative financial assets are generally recognized and derecognized using settlement date accounting. In the case of consolidated investment funds and the issue of certain securities, the financial instruments are also recognized on the trade date. Changes in fair value between the trade date and settlement date are recognized in accordance with the category of the financial instrument.

All financial instruments are generally measured at fair value on initial recognition. In the case of financial assets or financial liabilities not measured at fair value through profit or loss, transaction costs directly attributable to the acquisition of the financial asset or issue of the financial liability concerned are added or deducted on initial recognition.

Differences between transaction prices and fair values are recognized in profit or loss on initial recognition if the fair values correspond to the price quoted in an active market for an identical asset or identical liability or are based on a valuation technique that only uses data from observable markets. If the fair value is derived from transaction prices at the time of acquisition and this value is then used as a basis for any subsequent measurement, any changes in fair value are only recognized in profit or loss if they can be attributed to a change in observable market data. Any differences not recognized at the time of initial recognition are allocated over the maturity of the financial instruments concerned and recognized in profit or loss accordingly.

Financial assets are derecognized if the contractual rights to the cash flows from the financial assets have expired or these rights have been transferred to third parties, and substantially no risks or rewards of ownership in the financial assets remain. If the criteria for derecognizing financial assets are not satisfied, the transfer to third parties is recognized as a secured loan. Financial liabilities are derecognized when the contractual obligations have been settled, extinguished or have expired.

Loss allowances for financial assets

Under IFRS 9, loss allowances are recognized for those financial assets that constitute debt instruments and for loan commitments and financial guarantee contracts. Equity instruments do not fall within the scope of the IFRS 9 impairment model. Loss allowances are recognized in respect of the following financial assets:

- Financial assets in the IFRS 9 category ‘financial assets measured at amortized cost’,
- Financial assets (only debt instruments) in the IFRS 9 category ‘financial assets measured at fair value through other comprehensive income’,
- Undrawn loan commitments where there is a current legal obligation to grant credit (irrevocable loan commitments), provided they are not measured at fair value through profit or loss,
- Financial guarantee contracts, provided they are not measured at fair value through profit or loss,
- Lease receivables, and
- Trade receivables and contract assets that fall within the scope of IFRS 15.

Upon initial recognition, all financial assets are assigned to stage 1 with the exception of financial assets that are purchased or originated credit-impaired assets (POCI assets). Loss allowances for assets in stage 1 must be recognized in an amount equal to the 12-month expected credit loss.

At each balance sheet date, assets are assigned to stage 2 if their credit risk has significantly increased since initial recognition but there is no objective evidence of impairment. For these assets, the loss allowances are measured at the amount of the lifetime expected credit losses.

Put simply, it can be assumed that the credit risk of a financial instrument has not increased significantly since initial recognition if the financial instrument has a low credit risk at the balance sheet date (low credit risk exemption). The DZ BANK Group does not exercise the low credit risk exemption for loans and, consequently, not for promissory notes either.

Financial assets deemed to be impaired on the basis of objective evidence are assigned to stage 3. For these assets, the loss allowances are measured at the amount of the lifetime expected credit losses.

Financial assets subject to the IFRS 9 impairment rules must be reviewed at every balance sheet date to ascertain whether one or more events have occurred with an adverse impact on the estimated future cash flows of these financial assets.

Financial assets that are purchased or originated credit-impaired assets (POCI assets) are initially recognized at their carrying amount less the lifetime expected credit losses and amortized using a risk-adjusted effective interest rate. At the balance sheet date, only the cumulative changes to the lifetime expected credit losses since initial recognition are recognized as a loss allowance. Stage allocation is not required for these assets. Please refer to note 83 for more detailed information on loss allowances for financial assets.

The previous impairment requirements under IAS 39 focused on the recognition of losses that had already been incurred. Financial assets not measured at fair value through profit or loss had to be tested at each balance sheet date to establish whether there was any objective evidence that these assets were impaired. In the case of debt instruments, important objective evidence of impairment included financial difficulties on the part of the issuer or debtor, delay or default on interest payments or repayments of principal, failure to comply with ancillary contractually agreed arrangements or the contractually agreed provision of collateral, a significant downgrading in credit rating, or issue of a default rating.

Significant objective evidence of impairment in the case of equity instruments included a lasting deterioration in financial performance, sustained losses or consumption of equity, substantial changes with adverse consequences for the issuer's technological, market, economic, or legal environment, and/or a considerable or enduring reduction in fair value associated with such changes.

Embedded derivatives

An embedded derivative is a component of a hybrid contract that also includes a non-derivative financial instrument (host contract), with the effect that some of the cash flows of the combined financial instrument vary in a way similar to those of a standalone derivative. A derivative that is attached to a financial instrument but is contractually transferable independently of that instrument, or has a different counterparty, is not an embedded derivative, but a separate financial instrument.

If a hybrid contract contains a host contract that is a financial asset, the categorization rules for financial assets are applied to the entire hybrid contract. Under IAS 39, embedded derivatives generally had to be separated from the host contract, before they were then independently recognized and measured.

If a hybrid contract contains a host contract that is a financial liability, an embedded derivative is separated from the host contract and accounted for separately if:

– the economic characteristics and risks of the derivative are not closely related to the economic characteristics and risks of the host contract,
– a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative, and
– the hybrid contract is not measured at fair value through profit or loss.

If the embedded derivative does not meet all of these conditions, it may not be separated from the host contract. When an embedded derivative is separated, the host contract is accounted for in accordance with the pertinent standards.

If a contract includes one or more embedded derivatives and the host contract is not a financial asset, the entire hybrid contract can be categorized as measured at fair value through profit or loss. This is not the case where embedded derivatives only have an insignificant impact on the contractually specified cash flows or, upon initial comparison with similar hybrid instruments, it is evident without – or with only minor – analysis that separation of the embedded derivative is not permitted.

Classes of financial instruments

For the purposes of the disclosures on the importance of financial instruments to financial position and financial performance, financial instruments falling within the scope of IFRS 7 are classified using the 7 classes of financial instruments described below.

Classes of financial assets

Financial assets measured at fair value

The class of financial assets measured at fair value comprises the following categories defined by IFRS 9:

- 'Financial assets measured at fair value through profit or loss' with the subcategories 'financial assets mandatorily measured at fair value through profit or loss', 'contingent considerations in a business combination', and 'financial assets designated as at fair value through profit or loss' (fair value option),
- 'Financial assets measured at fair value through other comprehensive income' with the subcategories 'financial assets mandatorily measured at fair value through other comprehensive income' and 'financial assets designated as at fair value through other comprehensive income' (fair value OCI option).

In addition to the financial assets in the categories specified above, this class of financial assets measured at fair value includes derivatives used for hedging (positive fair values).

Financial assets measured at amortized cost

The 'financial assets measured at amortized cost' class includes, in particular, loans and advances to banks and customers measured at amortized cost and investments measured at amortized cost.

Finance leases

The 'finance leases' class comprises solely finance lease receivables.

Classes of financial liabilities

Financial liabilities measured at fair value

The 'financial liabilities measured at fair value' class comprises financial liabilities in the category 'financial liabilities measured at fair value through profit or loss' with the subcategories 'financial liabilities mandatorily measured at fair value through profit or loss', 'contingent considerations in a business combination', 'financial liabilities designated as at fair value through profit or loss' (fair value option), and derivatives used for hedging (negative fair values).

Financial liabilities measured at amortized cost

The class known as 'financial liabilities measured at amortized cost' is identical to the category of financial liabilities of the same name.

Finance leases

The 'finance leases' class comprises solely finance lease liabilities.

Financial guarantee contracts and loan commitments

Provisions for financial guarantee contracts and provisions for loan commitments within the scope of IAS 37 are aggregated in the class 'financial guarantee contracts and loan commitments'.

>> 06 Hedge accounting

General information on hedge accounting

As an integral part of its risk management strategy, the DZ BANK Group hedges against risks arising in connection with financial instruments.

If the hedging of risk in connection with financial instruments gives rise to accounting mismatches between the hedged item and the hedging instrument used, the DZ BANK Group designates the hedging transaction as a hedge in accordance with the hedge accounting requirements of IFRS 9 in order to eliminate or reduce such mismatches. In exercise of the option available under IFRS 9.6.1.3, the DZ BANK Group continues to account for portfolio hedges in application of the rules under IAS 39.

Fair value hedges

A fair value hedge is intended to ensure that changes in the fair value of the hedged item are offset by countervailing changes in the fair value of the hedging instrument. Changes in the fair value of the hedged item attributable to the hedged risk and changes in the fair value of the hedging instrument are recognized in profit or loss. Where equity instruments are hedged whose changes in fair value are recognized in other comprehensive income, the changes in the fair value of the hedging instruments are also recognized in other comprehensive income. Risks may be hedged by designating hedges either on an individual or on a portfolio basis.

Hedged items categorized as ‘financial assets measured at amortized cost’, ‘financial liabilities measured at amortized cost’, and finance lease receivables are measured in accordance with the general measurement principles for these financial instruments. The values are adjusted for the change in fair value attributable to the hedged risk. Hedged items categorized as ‘financial assets measured at fair value through other comprehensive income’ are measured at fair value, although only changes not attributable to the hedged changes in fair value are recognized in other comprehensive income. Interest income and interest expense arising from hedged items or hedging instruments are recognized under net interest income.

If the fair value is hedged against interest-rate risks on a portfolio basis, the cumulative changes in fair value attributable to the hedged risk are reported on the balance sheet under fair value changes of the hedged items in portfolio hedges of interest-rate risk, either under assets or liabilities depending on whether the portfolio comprises financial assets or financial liabilities.

In fully effective hedges, the changes in fair value (attributable to the hedged risk) recognized in profit or loss over the lifetime of the hedge completely cancel each other out. Any changes in fair value recognized in the carrying amount of the hedged items are amortized through profit or loss by the time the hedge has been terminated.

Cash flow hedges

The purpose of cash flow hedges is to ensure that changes in uncertain future cash flows from hedged items are offset by changes in cash flows from hedging instruments.

Hedging instruments are measured at fair value. Changes in fair value attributable to the effective portion of the hedge are recognized in other comprehensive income. Changes in fair value attributable to the ineffective portion of the hedge are recognized in profit or loss. Hedged items are recognized and measured in accordance with the general principles for the relevant measurement category. At the end of a hedging relationship, any changes in fair value recognized in other comprehensive income must be reclassified to profit or loss on the date on which the hedged items or transactions are also recognized in profit or loss.

Hedges of net investments in foreign operations

The purpose of hedges of net investments in foreign operations is to offset exchange differences resulting from net investments denominated in foreign currency.

Hedges of net investments in foreign operations are accounted for in the same way as cash flow hedges.

>> 07 Currency translation

All monetary assets and liabilities, together with unsettled spot transactions, are translated at the closing rate into the relevant functional currency of the entities in the DZ BANK Group. Cash in foreign currency is translated using the buying rate for cash on the balance sheet date. The translation of non-monetary assets and liabilities depends on the way in which these assets and liabilities are measured. If non-monetary assets are measured at amortized cost, they are translated using the historical exchange rate. Non-monetary assets measured at fair value are translated at the closing rate. Income, expenses, gains, and losses are translated on the date they are recognized either in profit or loss or in other comprehensive income.

If the functional currency of subsidiaries consolidated in the DZ BANK Group is different from the group's reporting currency (euros), all assets and liabilities are translated at the closing rate. Equity is translated at the historical rate. Income and expenses are also translated at the closing rate, provided that there is no material effect compared with the use of average rates. Any differences arising from currency translation are reported in the currency translation reserve. In most cases, the functional currency of the entities included in the consolidated financial statements is the euro, i.e. the group reporting currency.

>> 08 Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities are offset and reported as a net amount on the balance sheet if the group currently has a legally enforceable right to set off the amounts and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The legal right of set-off cannot be contingent on a future event and must be exercisable in the normal course of business, in the event of default, and in the event of insolvency of the entity or any of the counterparties.

>> 09 Sale and repurchase agreements, securities lending

Sale and repurchase agreements (repos) are transactions in which the parties agree the sale and subsequent repurchase of securities at a fixed price and time. The risks and rewards of ownership of the sold securities remain in full with the original seller, provided that the buyer is under an obligation to sell back the securities. If the DZ BANK Group enters into repos as the original seller, the securities sold continue to be recognized on the balance sheet because the derecognition criteria in IFRS 9 are not satisfied. A liability corresponding to the amount of the purchase price received is recognized. If the group enters into reverse repos as a buyer, the securities purchased must not be recognized on the balance sheet. A receivable corresponding to the amount of the purchase price paid is recognized.

Securities lent as part of securities lending transactions remain on the balance sheet. Where collateral is received in this regard, and this collateral is in cash, a liability is recognized. Borrowed securities do not meet the recognition criteria set out in IFRS 9 and must therefore not be recognized on the balance sheet. Any cash collateral furnished in connection with borrowed securities is reported as a receivable.

Sale and repurchase agreements and securities lending transactions result in transfers in which the transferred assets remain on the balance sheet in their entirety. The DZ BANK Group is not involved in any transfers in which the transferred assets are recognized according to the extent of continuing involvement or transfers of financial assets with a continuing involvement that are fully derecognized.

>> 10 Collateral

Receivables are recognized for assets pledged as collateral in the form of cash deposits. Other assets pledged as collateral continue to be reported on the balance sheet unchanged. Where collateral is received, and this collateral is in cash, a liability for a corresponding amount is recognized. Other financial or non-financial assets received as collateral are not recognized on the balance sheet unless the assets are obtained in connection with the recovery of collateral or a purchase of real estate that was previously held as collateral.

>> 11 Insurance business

General information on the accounting treatment of insurance business

The DZ BANK Group's insurance business comprises insurance contracts, capitalization transactions, and service contracts. It also includes financial guarantee contracts with insured parties.

Insurance contracts govern the transfer of significant insurance risk from the insured party to the insurer and the payment of compensation if a future contingent event materializes and adversely impacts the insured party. Insurance contracts are recognized in accordance with the requirements of IFRS 4. Capitalization transactions comprise, in particular, fund-linked or index-linked life insurance contracts without policyholder participation, pension fund contracts based on defined benefit plans, and contracts to protect semi-retirement employment models. Capitalization transactions are classified as financial instruments within the scope of IFRS 9. Service contracts comprise, in particular, separable and transferable administrative components of insurance and capitalization contracts. Such service contracts are subject to the revenue recognition requirements specified in IFRS 15. Any financial guarantee contracts in connection with insurance business are recognized in accordance with the accounting requirements applicable to insurance contracts.

The insurance business of the DZ BANK Group is reported under specific insurance items on the income statement and balance sheet. Material components of the specific insurance items are described below.

Financial assets and financial liabilities

Financial assets and financial liabilities held or acquired as part of insurance business are accounted for in accordance with the accounting policies for financial instruments described in note 5. These financial assets and financial liabilities are reported under investments held by insurance companies, other assets held by insurance companies, and other liabilities of insurance companies. Any loss allowances related to financial assets reported under investments held by insurance companies or other assets held by insurance companies are recognized for the categories 'financial assets measured at amortized cost' and 'financial assets measured at fair value through other comprehensive income' and are applied as a deduction on the assets side of the balance sheet. Within the investments held by insurance companies and other assets held by insurance companies balance sheet items, carrying amounts are presented on a net basis. However, the loss allowances are shown separately (gross presentation) in the balance sheet disclosures.

Other liabilities of insurance companies include the benefit obligations under capitalization transactions for which no material insurance risk is assumed when the policy is concluded. They are reported under liabilities from capitalization transactions. The underlying financial instruments in these transactions are reported as part of assets related to unit-linked contracts under investments held by insurance companies.

Investment property

The investment property included in the investments held by insurance companies is measured at amortized cost in accordance with the cost model. Non-interest-bearing, low-interest or forgivable loans are recognized in the same way as government grants. The amount of financial assistance or any government grant is deducted when the carrying amount of the asset is identified and is then recognized in profit or loss over the period covered by the assistance or grant by means of a reduced depreciation charge.

Recoverable amounts are determined for real estate so that this information can be used in impairment tests and provided in the disclosures required in the notes to the financial statements in accordance with the provisions of IFRS 13. For this purpose, standard valuation methods are generally used that are based on the requirements of the German Real Estate Valuation Guidelines (WertR 2006) and the German Building Code (BauGB). Accordingly, the current value of real estate is determined by using the sales comparison approach, income approach, or cost approach and taking into account the provisions of any relevant contracts.

Any expenditure that increases value and extends the useful life of real estate or results in a significant improvement in the fabric of a building is capitalized. Maintenance and repair costs are expensed as incurred.

Insurance liabilities

Insurance companies are permitted to continue applying existing accounting policies to certain insurance-specific items during a transition period. Insurance liabilities are therefore recognized and measured in accordance with HGB and other German accounting provisions applicable to insurance companies. Insurance liabilities are shown before the deduction of the share of reinsurers, which is reported as an asset.

Provision for unearned premiums

The provision for unearned premiums represents premiums that have already been collected but that relate to future periods.

The provision for unearned premiums from direct non-life insurance operations is calculated from the gross premiums using the 360-day system. Calculation of non-transferable income components is based on the letter from the Bundesministerium der Finanzen (BMF) [German Federal Ministry of Finance] dated April 30, 1974.

Unearned premiums from life insurance are calculated taking into account the starting date and maturity date of each individual policy after deduction of non-transferable premium components. As far as life insurance is concerned, imputed collection expenses equivalent to up to 4 percent of premiums may not be transferred.

The provision for unearned premiums in health insurance predominantly relates to international travel healthcare insurance business.

The proportion of the provision for unearned premiums relating to ceded insurance business is calculated as specified in the individual reinsurance contracts.

Benefit reserve

The purpose of the benefit reserve is to ensure that guaranteed entitlements to future insurance benefits can be satisfied on a permanent basis. Guaranteed entitlements for insured persons in respect of life insurance and casualty insurance with premium refund as well as the provision for increasing age in health insurance are reported under the benefit reserve.

The benefit reserve for life insurance and casualty insurance with premium refund is generally calculated in Germany on the basis of individual policies taking into account starting dates in accordance with approved business plans and the principles declared to the relevant regulatory authorities. The prospective method is used for life insurance (except for unit-linked insurance products and account management arrangements) and for casualty insurance (with the exception of premium-based policies that started prior to 1982). The retrospective method is used for other types of insurance. Negative benefit reserves on an individual policy basis are generally recognized with an amount of zero.

The assumptions used in calculations are determined in accordance with current recommendations issued by the Deutsche Aktuarvereinigung e.V., Cologne, (DAV) [German Actuarial Association] and the regulator and in accordance with other national statutory provisions and regulations. As a rule, calculation of the benefit reserve is based on interest rates of between 0.0 percent and 4.0 percent, as was the case in the previous year. These interest rates are generally determined by the legally prescribed maximum discount rates. The calculation assumptions apply from the date on which the policy is written until the policy expires.

For policies entered into before or in 2014, calculation of the benefit reserve is generally based on the Zillmer method. Following the introduction of the German Life Insurance Reform Act (LVRG), zillmerizing has not been applied to most new business entered into since 2015. In particular, zillmerizing is not applied to subsidized pension insurance policies under the German Personal Pension Plan Act (AVmG) or to pension insurance policies under reinsured pension plans.

The benefit reserve implicitly includes administrative expenses for contracts with ongoing payment of premiums. A provision for administrative costs has been recognized to cover premium-free years under insurance policies, fully paid-up insurance, and some legacy insurance commitments.

In health insurance, benefit reserves are computed prospectively on an individual policy basis using the technical parameters for calculating rates. Negative benefit reserves and positive benefit reserves are netted. The parameters for the computation of the reserves involve, in particular, assumptions regarding rates of return on investment, mortality, cancellations, and other costs. The discount rate for health insurance is regularly checked in accordance with the procedure developed by the DAV for calculating the company actuarial discount rate. This procedure is based on a fundamental professional principle issued by the DAV for determining an appropriate discount rate. In accordance with these calculations, the discount rate was reduced in 2018 for observation units with a premium adjustment effective January 1, 2018. The reason for this action is the persistently low level of interest rates. The group uses mortality tables issued by the Verband der Privaten Krankenversicherung e. V., Cologne, (PKV) [Association of German private healthcare insurers], entity-specific probability rates for policy cancellations, and profiles of benefit drawdown. These assumptions are regularly reviewed in accordance with actuarial principles and updated, where appropriate.

When the benefit reserves are prospectively calculated, the parameters used are generally retained throughout the term of the policy. If the actuarial analyses conducted once a year reveal that the level of cover offered is inadequate in terms of either biometric parameters or discount rate, appropriate adjustments are made. The biometric parameters used in such computations are based primarily on the mortality and invalidity tables published by the DAV.

Since 2011, supplementary change-in-discount-rate reserves have been recognized for policies with a discount rate in excess of the reference rate. For new policies, this requirement results from the provisions of the German Regulation on the Principles Underlying the Calculation of the Premium Reserve (DeckRV). A supplementary change-in-discount-rate reserve is recognized for policies with a discount rate in excess of the reference rate specified in the DeckRV. In 2018, the BMF modified the procedure for determining this reference rate to soften the changes resulting from the previous arrangements. This led to a modest increase in the supplementary change-in-discount-rate reserves for new business compared with prior years. With the approval of the Bundesanstalt für Finanzdienstleistungsaufsicht, Bonn, (BaFin) [German Federal Financial Supervisory Authority], the supplementary change-in-discount-rate reserve has been increased for existing policies. Entity-specific probabilities for cancellation and lump-sum payments have been used since 2016.

Provision for claims outstanding

The provision for claims outstanding represents benefit obligations arising from claims in which it is not yet possible to reliably determine the amount and/or the timing of the payment. The provision is recognized for claims that have already been reported and also for insured events that have occurred but have not yet been reported. It includes both internal and external expenses as well as the cost of settling claims.

The provision for claims outstanding in direct non-life insurance business is determined on a case-by-case basis for all known claims. Recourse claims, excess proceeds, and claims under loss sharing agreements are netted. Based on the level of delayed claims reports observed in previous years, an additional claims provision is recognized for claims that occur or are caused before the balance sheet date but have not yet been reported by this date. Statistical estimates are used in this measurement. The provision for claims outstanding is not discounted, except in the case of the pension benefits reserve. The provisions for claims settlement expenses, which are also included in this item, have been calculated in accordance with the requirements set out in the coordinated regulations issued by the German federal states on February 2, 1973 and in accordance with the flat-rate calculation method (including claims incurred but not reported, IBNR) developed by the Gesamtverband der Deutschen Versicherungswirtschaft e. V., Berlin, (GDV) [German Insurance Association].

The provision for claims outstanding as regards life insurance and pension funds is determined on a case-by-case basis. The provision is recognized for claims that have already been incurred and reported by the balance sheet date, but have not yet been settled.

A provision for settlement expenses is recognized in an amount equivalent to 1 percent of the claims provision to cover claims incurred and reported by the balance sheet date (excluding maturing policies) and also IBNR losses.

In health insurance, the provision for claims outstanding is determined on the basis of the costs paid out in the financial year in connection with claims during the year. The calculation is based on claims experience over the previous 3 financial years. Recourse claims are deducted from the provision for claims outstanding, as are reimbursements due under the German Act on the Reform of the Pharmaceuticals Market (AMNOG). The recognized provision includes the costs of settling claims, calculated in accordance with tax rules. The reinsurers' share of the provision is determined in accordance with reinsurance treaties. Where appropriate, provisions for claims outstanding are recognized on a case-by-case basis for claims relevant to reinsurance.

Provision for premium refunds

The provision for premium refunds represents obligations not yet due for settlement on the balance sheet date relating to premium refunds to insured parties. It includes amounts allocated to policyholders under statutory or contractual arrangements for bonuses and rebates. In addition, the provision for premium refunds includes provisions resulting from time-restricted cumulative recognition and measurement differences between items in the financial statements prepared in accordance with IFRS and those prepared in accordance with HGB. In the case of measurement differences recognized in other comprehensive income, such as unrealized gains and losses on financial assets measured at fair value through other comprehensive income, corresponding expenses for deferred premium refunds are recognized in other comprehensive income; otherwise, changes in the provision are recognized in profit or loss.

The expenses for deferred premium refunds in the non-life insurance business are recognized in an amount equivalent to 90 percent of the difference between the carrying amounts for items in the financial statements prepared in accordance with IFRS and those in the financial statements prepared in accordance with HGB net of deferred taxes.

The provision for premium refunds related to life insurance policies and pension funds is recognized to cover the entitlement of policyholders to profit-related premium refunds. Funds earmarked in this way are therefore made available for future allocation of bonuses to policyholders on an individual policy basis. Within the overall provision for premium refunds, a distinction is made between provisions attributable to bonuses already declared but not yet allocated (including participation in valuation reserves in accordance with HGB), the funding used to finance future terminal bonuses, and the free provision for premium refunds. Under section 140 of the German Act on the Supervision of Insurance Undertakings (VAG), that element of the provision for premium refunds not attributable to bonuses already declared but not yet allocated may be used to avert an imminent crisis and may therefore be seen as mitigating risk. Expenses for deferred premium refunds are recognized in an amount equivalent to 90 percent of the difference between the carrying amounts for items in the financial statements prepared in accordance with IFRS and those in the financial statements prepared in accordance with HGB net of deferred taxes.

The provision for premium refunds related to health insurance includes amounts allocated to policyholders under statutory or contractual arrangements for bonuses and rebates. Expenses for deferred premium refunds are recognized in an amount equivalent to 80 percent of the difference between the carrying amounts for items in the financial statements prepared in accordance with IFRS and those in the financial statements prepared in accordance with HGB net of deferred taxes.

Other insurance liabilities

Other insurance liabilities relating to non-life insurance include obligations arising from membership of the Verein Verkehrsopferhilfe e.V. (VOH) [road casualty support organization], Berlin, in line with the object of this organization and the provision for unearned premiums under dormant vehicle insurance policies, the provision being determined on an individual policy basis. The cancellation provision is calculated on the basis of past experience. The provision for onerous contracts is calculated on the basis of prior-year figures and a forecast of other insurance gains and losses, taking into account interest income and residual maturities.

Other insurance liabilities for life insurance are computed on the basis of individual policies from premiums that are already due but have yet to be paid and have not yet been included in the life insurance liability to the extent that the investment risk is borne by the policyholders.

Other insurance liabilities for health insurance contain a cancellation provision. It contains the expected losses arising from the premature loss, not previously accounted for, of the negative portions of the provision for increasing age in health insurance.

Reinsurance business

In the case of reinsurance business, the insurance liabilities are recognized in accordance with the requirements specified by the ceding insurers. If no such details are available as at the balance sheet date, the provision for the financial year is estimated. The critical factors in estimating the provision are the contractual terms and conditions and the pattern of this business to date. In a few instances, loss provision details provided by ceding insurers are deemed to be too low in the experience of DZ BANK; in such cases, appropriate increases are applied, the increases having been determined in accordance with prudent business practice, past experience, and actuarial calculation methods.

Reserve for unit-linked insurance contracts

The reserve for unit-linked insurance contracts is an item largely corresponding to assets related to unit-linked contracts. This item is used to report policyholders' entitlements to their individual investment fund units where the related investments arise out of contracts to be reported in accordance with IFRS 4. The reserve is measured at fair value on the basis of the underlying investments. Gains and losses on the fund assets result in corresponding changes on the equity and liabilities side of the balance sheet.

Adequacy test for insurance liabilities

Insurance liabilities must be regularly reviewed and subjected to an adequacy test. The adequacy test determines, on the basis of a comparison with estimated future cash flows, whether the carrying amount of insurance liabilities needs to be increased.

To review the insurance liabilities in the health insurance companies, a regular comparison is made between the present values of estimated future insurance benefits and costs, on the one hand, and the present values of estimated future premium payments on the other. In the event of any deficits, the insurance company has the option of adjusting premiums.

>> 12 Leases

A lease is classified as a finance lease if substantially all the risks and rewards incidental to the ownership of an asset are transferred to the lessee. If the risks and rewards remain substantially with the lessor, the lease is an operating lease.

DZ BANK Group as lessor

If a lease is classified as a finance lease, a receivable due from the lessee must be recognized. The receivable is measured at an amount equal to the net investment in the lease at the inception of the lease. Lease payments are apportioned into a payment of interest and repayment of principal. The interest portion based on the lessor's internal discount rate for a constant periodic rate of return is recognized as interest income, whereas the repayment of principal reduces the carrying amount of the receivable.

If a lease is classified as an operating lease, the DZ BANK Group retains beneficial ownership of the leased asset. These leased assets are reported as assets. The leased assets are measured at cost less depreciation and any impairment losses. Unless another systematic basis is more representative of the pattern of income over time, lease income is recognized in profit or loss on a straight-line basis over the term of the lease and is included in the current income from operating leases reported under net interest income. Gains on disposal, reversals of impairment losses, depreciation, losses on disposal, and impairment losses relating to the underlying leased assets are also included in the current income from operating leases.

DZ BANK Group as lessee

If a lease is classified as a finance lease, the DZ BANK Group is the beneficial owner of the leased asset. The leased asset must therefore be recognized as an asset on the group's balance sheet. On initial recognition, the leased asset is recognized at the lower of fair value and the present value of the minimum lease payments, and a liability of an equivalent amount is also recognized. The lease payments made must be broken down into an interest portion and a repayment portion.

Lease payments under operating leases are recognized on a straight-line basis over the term of the leases concerned and reported as administrative expenses.

>> 13 Income

Interest and dividends received

Interest is recognized in the relevant period. If the effective interest method is used to calculate interest income, such income is reported under interest income calculated using the effective interest method.

The cash flows used to calculate the effective interest rate take into account contractual agreements in connection with the financial assets and financial liabilities concerned.

Premiums and discounts are allocated over the expected life of financial instruments using the effective interest method. Any additional costs incurred that are directly connected with the acquisition or sale of a financial asset or financial liability, and thus can be directly assigned to the transaction, are factored into the calculation of the effective interest rate. Such costs include sales charges directly associated with the origination of home savings contracts and commitment fees for loans.

Dividends are recognized as soon as a legal entitlement to the payment of such a dividend is established.

Interest income and interest expense arising in connection with derivatives that were not entered into for trading purposes or are used to hedge financial instruments for which the fair value option has been exercised are reported under net interest income. Interest income and interest expense on overnight money and fixed-term deposits arranged for economic management purposes between different organizational units and timing effects from currency swaps used for economic management of net interest income are recognized under net interest income or under gains and losses on trading activities, depending on their economic classification.

Revenue from contracts with customers

Revenue from contracts with customers is recognized when the underlying services have been performed, it is probable that the economic benefits will flow to the group, and the amount of the revenue can be reliably measured.

In the DZ BANK Group, revenue from contracts with customers primarily consists of fee and commission income. Revenue from contracts with customers is also included in gains and losses on investments held by insurance companies and other insurance company gains and losses as well as in other net operating income. The main components of fee and commission income are fee and commission income from securities business, fee and commission income from payments processing (including card processing), fee and commission income from lending and trust activities, and fee and commission income from asset management.

Fee and commission income from securities business is generated from funds business and brokerage, and also includes custody charges. The income is generally recognized as soon as the service has been performed. Fee and commission income from payments processing (including card processing) and fee and commission income from lending and trust activities is recognized immediately after the service has been provided.

Fees and commissions earned over the period in which a service is performed include certain types of fees for administration and safe custody as part of the securities business and asset management, and fees in connection with the furnishing of financial guarantees. In the case of performance-related management fees, income is recognized when the contractually agreed performance criteria have been satisfied. This is either when the service is contracted (brokering of life insurance or fund contracts, or brokering of home savings loans) or when the service is performed (fee and commission income from building society operations).

Fees and charges that form an integral part of the effective interest rate do not fall within the scope of IFRS 15 and are accounted for in accordance with IFRS 9 regardless of whether the financial assets are measured at fair value or at amortized cost.

The DZ BANK Group applies the following practical expedients as permitted by IFRS 15: it applies the standard to a portfolio of contracts, does not adjust the promised amount of consideration for the effects of a significant financing component, recognizes the incremental costs of obtaining a contract as an expense when incurred, and does not disclose certain information for some performance obligations.

Under IAS 18, income from fees and commissions is recognized when the underlying services have been performed, it is probable that the economic benefits will flow to the group, and the amount of the income can be reliably measured. Such income is therefore recognized in profit or loss over the period in which the underlying service is performed or immediately after the service has been performed. Fees and commissions earned over the period in which a service is performed include certain types of fees for administration and safe custody as part of the securities business and asset management, and fees in connection with the furnishing of financial guarantees. In the case of performance-related management fees, income is recognized when the contractually agreed performance criteria have been satisfied.

Insurance business

For each insurance contract, gross premiums written are calculated pro rata for an exact number of days based on the actual start date of the insurance. These premiums comprise all amounts that become due in the financial year in connection with insurance premiums, premium installments, and one-off premiums for direct insurance and reinsurance business. Premiums for unit-linked life insurance, except capitalization transactions without policyholder participation, are also recognized as gross premiums written.

The components of premiums covering administration fees are reported pro rata as income in the income statement. In the case of index-linked policies and service contracts, additional administration charges, fees, and commissions from the service and brokerage business are deferred in accordance with IFRS 15 and apportioned over the relevant periods for the duration of the policy or contract concerned in line with the service performed.

>> 14 Cash and cash equivalents

Cash and cash equivalents are cash on hand, balances with central banks, treasury bills, and non-interest-bearing treasury notes.

Cash on hand comprises euros and foreign currencies. Cash in euros is measured at nominal value; foreign currency cash is translated at the buying rate. Balances with central banks, treasury bills, and non-interest-bearing treasury notes are allocated to the category ‘financial assets measured at amortized cost’. Interest income on cash and cash equivalents is recognized as interest income from lending and money market business.

>> 15 Loans and advances to banks and customers

All receivables attributable to registered debtors that are categorized as ‘financial assets measured at amortized cost’, ‘financial assets measured at fair value through profit or loss’, or ‘financial assets measured at fair value through other comprehensive income’ are recognized as loans and advances to banks and customers. To eliminate or significantly reduce accounting mismatches, certain loans and advances are designated as at fair value through profit or loss. In addition to fixed-term receivables and receivables payable on demand in connection with lending, lease, and money market business, loans and advances to banks and to customers include promissory notes and registered bonds.

Loans and advances to banks and customers are measured predominantly at amortized cost using the effective interest method. In fair value hedges, the carrying amounts of hedged receivables are adjusted for the change in fair value attributable to the hedged risk. The resulting hedge adjustments are recognized within other gains and losses on valuation of financial instruments under gains and losses arising on hedging transactions. Finance lease receivables are recognized and measured in accordance with the requirements for the accounting treatment of leases.

Loss allowances for loans and advances to banks and customers are determined on the basis of the IFRS 9 requirements applicable to the relevant category of financial assets. Depending on these requirements, the loss allowances are reported as a separate line item deduction on the assets side of the balance sheet or in the reserve from other comprehensive income.

Interest income on loans and advances to banks and customers is recognized as interest income from lending and money market business. This also includes gains and losses on the sale of such loans and advances categorized as 'financial assets measured at amortized cost' and the amortization of hedge adjustments to carrying amounts due to fair value hedges. Gains and losses on the valuation of loans and advances for which the fair value option has been exercised are also shown under the item of the same name as part of other gains and losses on valuation of financial instruments.

>> 16 Hedging instruments (positive and negative fair values)

The carrying amounts of financial instruments designated as hedging instruments in effective and documented hedging relationships are reported under either hedging instruments (positive fair values) or hedging instruments (negative fair values).

These financial instruments are measured at fair value. Changes in the fair value of hedging instruments in the category 'financial assets measured at fair value through profit or loss' used in fair value hedges are recognized in the income statement as an element of other gains and losses on valuation of financial instruments under gains and losses from hedge accounting. If the hedged item is an equity instrument in which changes in fair value are recognized in other comprehensive income, the changes in the fair value of the hedging instruments are also recognized in other comprehensive income.

In the case of financial instruments used for cash flow hedges or hedges of net investments in foreign operations, changes in fair value attributable to the effective portion of the hedges are recognized in other comprehensive income. The cumulative amounts are recognized in the reserve from other comprehensive income as part of equity. Changes in fair value attributable to the ineffective portion of hedges are included in other gains and losses on valuation of financial instruments under gains and losses from hedge accounting.

>> 17 Financial assets and financial liabilities held for trading

Financial assets and financial liabilities held for trading comprise solely financial assets and financial liabilities that are held for trading.

Derivatives with positive fair values are classified as financial assets held for trading if they were entered into for trading purposes or, despite being intended to be used as hedges, do not meet the requirements for an accounting treatment as hedging instruments. Financial assets held for trading also include bonds and other fixed-income securities, shares and other variable-yield securities, and receivables held for trading purposes.

Financial liabilities held for trading include short positions, bonds and other debt certificates issued, and liabilities held for trading purposes. The procedure for classifying derivatives with negative fair values as financial liabilities held for trading is the same as that used for financial assets held for trading.

Financial instruments reported as financial assets or financial liabilities held for trading are always measured at fair value through profit or loss. Gains and losses on valuation, interest income and expense, and dividends arising from financial assets and financial liabilities held for trading are recognized under gains and losses on trading activities, provided that there is an actual intent to trade the instruments concerned.

Gains and losses on valuation of derivatives that are entered into for hedging purposes, but are not recognized as hedging transactions, are recognized under other gains and losses on valuation of financial instruments as gains and losses on derivatives used for purposes other than trading. If, to avoid accounting mismatches, hedged items are allocated to the category 'financial assets measured at fair value through profit or loss', valuation gains and losses on the related hedging derivatives are recognized under gains and losses on financial instruments designated as at fair value through profit or loss. Interest income and interest expense arising in connection with derivatives that were not entered into for trading purposes or are used to hedge financial instruments designated as at fair value through profit or loss are reported under net interest income.

>> 18 Investments

The following are recognized as investments: bearer bonds and other fixed-income securities, shares and other variable-yield securities, and other bearer or registered shareholdings in entities in which the DZ BANK Group has no significant influence, provided that these securities or shares are not held for trading purposes. Investments also include investments in subsidiaries, joint ventures, and associates.

Investments are initially recognized at fair value. Investments in joint ventures and associates that are accounted for using the equity method are initially recognized at cost. These investments are subsequently measured in accordance with the principles applicable to the relevant measurement category. In the case of investments in joint ventures and associates, the equity method is used for subsequent measurement.

Impairment losses on investments are determined on the basis of the IFRS 9 requirements applicable to the relevant category of financial assets or on the basis of accounting standards relevant to the financial assets concerned. They are generally reported as a separate line item on the assets side of the balance sheet or in the reserve from other comprehensive income.

Interest and any investment premiums or discounts amortized over the maturity of the investment using the effective interest method are recognized under net interest income. Dividends derived from equity instruments are recognized as current income under net interest income. Gains or losses on investments accounted for using the equity method are also reported under net interest income.

Gains and losses realized on the sale of, as well as impairment losses and reversals thereof on, investments in associates and joint ventures that are accounted for using the equity method are reported under gains and losses on investments.

Fair value gains and losses on investments that are measured at fair value through profit or loss are reported under other gains and losses on valuation of financial instruments.

>> 19 Property, plant and equipment, and investment property

Property, plant and equipment, and investment property comprises land and buildings as well as office furniture and equipment with an estimated useful life of more than one year used by the entities in the DZ BANK Group.

This item also includes assets subject to operating leases. Investment property is real estate held for the purposes of generating rental income or capital appreciation.

Property, plant and equipment, and investment property is measured at cost less cumulative depreciation and cumulative impairment losses in subsequent financial years. Depreciation is largely recognized on a straight-line basis over the useful life of the asset. In most cases, external valuations are used to measure recoverability.

If facts or circumstances give rise to indications that assets might be impaired, the recoverable amount is determined. An impairment loss is recognized if the recoverable amount is lower than the asset's carrying amount. The recoverable amount is the higher of fair value less costs to sell and value in use.

Borrowing costs directly assignable to property, plant and equipment, and investment property are capitalized as part of the asset cost, provided that the asset concerned is a qualifying asset.

Depreciation on property, plant and equipment and investment property is recognized as an administrative expense. Impairment losses and reversals of impairment losses are reported under other net operating income.

>> 20 Income tax assets and liabilities

Current and deferred tax assets are shown under the income tax assets balance sheet item; current and deferred tax liabilities are reported under income tax liabilities. Current income tax assets and liabilities are recognized in the amount of any expected refund or future payment.

Deferred tax assets and liabilities are recognized for temporary differences between the carrying amounts recognized in the financial statements in accordance with IFRS and those in the financial statements for tax purposes. Deferred tax assets are also recognized in respect of as yet unused tax loss carryforwards, provided that utilization of these loss carryforwards is sufficiently probable. Deferred tax assets are measured using the national and entity-specific tax rates expected to apply at the time of recovery. A uniform tax rate is applied in the case of group companies forming a tax group with DZ BANK.

Deferred tax assets and liabilities are not discounted. Where temporary differences arise in relation to items recognized in other comprehensive income, the resulting deferred tax assets and liabilities are also recognized in other comprehensive income. Current and deferred tax income and expense to be recognized through profit or loss are reported under income taxes in the income statement.

>> 21 Other assets and other liabilities

Other assets also include intangible assets and contract assets. Intangible assets are recognized at cost. In the subsequent measurement of software, acquired customer relationships, and other intangible assets with a finite useful life, carrying amounts are reduced by cumulative amortization and cumulative impairment losses. Goodwill and other intangible assets with an indefinite useful life are not amortized but are subject to an impairment test at least once during the financial year.

If the group has satisfied its performance obligation in respect of a customer, but the customer has not yet paid the consideration and payment of the consideration still depends on a condition other than simply a due date, then the group recognizes a contract asset on the balance sheet in place of a receivable. As soon as an unconditional right to the consideration arises, the contract asset is reclassified as a receivable. Contract assets are not amortized, but are included in the calculation of the loss allowances in accordance with IFRS 9.

Other liabilities include other liabilities of insurance companies and accrued expenses.

The other assets and other liabilities line items are used to report assets and liabilities that cannot be allocated to any of the other asset or liability line items.

>> 22 Loss allowances

Loss allowances for cash and cash equivalents, loans and advances to banks and customers, investments, and other assets that are measured at amortized cost or designated as finance leases are reported as a separate line item on the assets side of the balance sheet. Additions to loss allowances for these balance sheet items, and any reversals of such allowances, are recognized under loss allowances in the income statement.

Loss allowances for investments held by insurance companies and other assets held by insurance companies measured at amortized cost are netted with the carrying amounts of these assets within the investments held by insurance companies and other assets held by insurance companies line items on the balance sheet. Additions to loss allowances for these balance sheet items, and any reversals of such allowances, are recognized under gains and losses on investments held by insurance companies and other insurance company gains and losses in the income statement.

Loss allowances for loans and advances to banks and customers, for investments, and for investments held by insurance companies that are measured at fair value through other comprehensive income are not reported on the assets side of the balance sheet but instead in the reserve from other comprehensive income.

The recognition of loss allowances also covers changes in the provisions for loan commitments, provisions for financial guarantee contracts, and other provisions for loans and advances. Any additions to, or reversals of, provisions for loan commitments and financial guarantee contracts and other provisions for loans and advances are also recognized in profit or loss under loss allowances.

>> 23 Non-current assets and disposal groups classified as held for sale

The carrying amount of non-current assets or disposal groups for which a sale is planned is recovered principally through a sale transaction rather than through their continuing use. These assets and disposal groups therefore need to be classified as held for sale if the criteria set out below are satisfied.

To be classified as held for sale, the assets or disposal groups must be available for immediate sale in their present condition subject only to terms that are usual and customary for sales of such assets or disposal groups, and it must be highly probable that a sale will take place. A sale is deemed to be highly probable if there is a commitment to a plan to sell the asset or disposal group and an active program to locate a buyer and complete the plan has been initiated. In addition, the asset or disposal group must be actively marketed for sale at a price that is reasonable in relation to the current fair value. A sale must be expected to be completed within one year of the date on which the asset or disposal group is classified as held for sale.

Assets classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell. The assets are no longer depreciated from the date on which they are classified as held for sale.

Assets and disposal groups classified as held for sale are shown separately on the balance sheet under non-current assets and disposal groups classified as held for sale and liabilities included in disposal groups classified as held for sale. Gains and losses arising on measurement as well as gains and losses on the sale of these assets or disposal groups that do not belong to a discontinued operation are recognized in the income statement under other net operating income. If the assets or disposal groups belong to discontinued operations, all gains and losses arising from these assets and disposal groups must be shown separately as 'profit/loss from discontinued operations, net of tax'.

>> 24 Deposits from banks and customers

All liabilities attributable to registered creditors not classified as 'financial liabilities mandatorily measured at fair value through profit or loss' are recognized as deposits from banks and customers. In addition to fixed-maturity liabilities and liabilities repayable on demand arising from the deposit, home savings and loan, and money market businesses, these liabilities also include, in particular, registered bonds and promissory notes issued.

Deposits from banks and customers are measured at amortized cost using the effective interest method. Where deposits from banks and customers are designated as a hedged item in an effective fair value hedge, the carrying amount is adjusted for any change in the fair value attributable to the hedged risk. If, to eliminate or significantly reduce accounting mismatches, the fair value option is applied for deposits from banks and customers, the liabilities are measured at fair value as at the balance sheet date.

Interest expense on deposits from banks and customers is recognized separately under net interest income. Interest expense also includes gains and losses on early redemptions and the amortization of hedge adjustments to carrying amounts due to fair value hedges. Hedge adjustments to the carrying amount due to fair value hedges are reported within other gains and losses on valuation of financial instruments under gains and losses from hedge accounting. If the fair value option has been exercised for deposits from banks and customers, valuation gains and losses are recognized under gains and losses on non-derivative financial instruments and embedded derivatives within other gains and losses on valuation of financial instruments.

>> 25 Debt certificates issued including bonds

Debt certificates issued including bonds cover 'Pfandbriefe', other bonds, and commercial paper for which transferable bearer certificates have been issued.

Debt certificates issued including bonds and gains and losses thereon are measured and recognized in the same way as deposits from banks and customers.

>> 26 Provisions

Provisions for employee benefits

Pension plans agreed with the employees of the entities in the DZ BANK Group are based on various types of pension schemes that depend on the legal, economic, and tax situation in each country and include both defined contribution plans and defined benefit plans.

Where a commitment is made to defined contribution plans, fixed contributions are paid to external pension providers. The amount of the contributions and the income earned from the pension assets determine the amount of future pension benefits. The risks arising from the obligation to pay such benefits in the future lie with the pension provider. No provisions are recognized for these indirect pension commitments. The contributions paid are recognized as pension and other post-employment benefit expenses under administrative expenses.

Under a defined benefit plan, the employer promises a specific benefit and bears all the risks arising from this promise. Defined benefit obligations are measured on the basis of the projected unit credit method. The measurement depends on various actuarial assumptions. These include, in particular, assumptions about long-term salary and pension trends and average life expectancy. Assumptions about salary and pension trends are based on past trends and take into account expectations regarding future changes in the labor market. Generally accepted biometric tables are used to estimate average life expectancy. The 2018 G mortality tables published by Professor Dr. Klaus Heubeck were used for the first time in the figures calculated as at December 31, 2018 (previously 2005 G mortality tables). The new mortality tables take into account further rises in average life expectancy in Germany compared with the previous biometric tables. For the first time, they also take into account socio-economic factors by applying a flat-rate reduction to the mortality rate for employees with a higher retirement income, reflecting proven higher life expectancy. The adjustment is not material and was included in full in other comprehensive income. The discount rate used to discount future payment obligations is an appropriate market interest rate for investment-grade fixed-income corporate bonds with a maturity equivalent to that of the defined benefit obligations. The discount rate depends on the obligation structure (duration) and is determined using a portfolio of high-quality corporate bonds that must satisfy certain criteria in terms of quality and volume (outstanding face value). One of the notable quality criteria is an average AA rating from Moody's Investors Service, New York, Standard & Poor's, New York, Fitch Ratings, New York/London, and DBRS, Toronto. Bonds with existing call options in the form of embedded derivatives are not included in this process.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions regarding the defined benefit obligations, together with gains and losses arising from the remeasurement of plan assets and reimbursement rights, are recognized in other comprehensive income in the reporting period in which they occur.

The plan assets for the DZ BANK Group's defined benefit plans consist to a significant extent of the plan assets of DZ BANK.

In addition to the provisions for defined benefit pension plans, the provisions for employee benefits include provisions for other long-term employee benefits, provisions for termination benefits, and provisions for short-term employee benefits.

Provisions for other long-term employee benefits are recognized, in particular, to cover semi-retirement (Altersteilzeit) and long-service bonuses. Provisions for early retirement are included under the provisions for termination benefits.

Provisions for termination benefits linked with restructuring are reported separately from other restructuring provisions. The provisions for restructuring assigned to the provisions for employee benefits have been derived from a number of strategies, including DZ BANK's forward-looking 'Verbund First 4.0' initiative adopted in 2018, VR LEASING's strategy adopted in 2017 to transform itself into a digital provider of finance for the self-employed and small businesses, and the strategic agenda initiated in 2017 to enhance DVB's business model.

Provisions for employee benefits are generally recognized as a charge to administrative expenses, although reversals of such provisions are reported under other net operating income. As an exception to the rule, provisions for restructuring are recognized under other net operating income.

Provisions for share-based payment transactions

The entities in the DZ BANK Group have entered into various agreements covering variable remuneration components to be paid to members of the Board of Managing Directors and certain other executives. The amount and timing of such remuneration depends on a number of factors, not least the performance of the entity concerned. These agreements are classified as cash-settled share-based payment transactions.

Provisions for share-based payment transactions are recognized (at fair value) if it is sufficiently probable that the remuneration will be paid out in the future. The timing of initial recognition is therefore before the grant date and before any payout in subsequent years. This results in discrepancies compared with the nominal amounts disclosed in note 96 for share-based payments granted but not yet paid out.

Provisions for share-based payment transactions are also subsequently measured at fair value. Any changes in fair value are recognized in profit or loss.

Other provisions

Provisions are liabilities in which the amounts or due dates are uncertain. Provisions are recognized for present obligations arising out of past events, in which it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and the amount of the obligation can be reliably estimated.

The provisions are recognized and measured using the best estimate of the present value of their anticipated utilization. This estimate takes account of future events as well as the risks and uncertainties relating to the issue concerned.

Provisions for irrevocable loan commitments and provisions for financial guarantee contracts are recognized with the same model used for financial liabilities and in the amount of the expected credit losses.

Other provisions for loans and advances factor in the usual sector-specific level of uncertainty. The underlying assumptions and estimates used include figures based on past experience as well as expectations and forecasts relating to future trends and developments.

Provisions relating to building society operations are recognized to cover the payment of any bonuses that may have been agreed in the terms and conditions of home savings contracts. These bonuses may take the form of a reimbursement of some of the sales charges or interest bonuses on deposits. The bonuses constitute independent payment obligations and must be measured and recognized in accordance with IAS 37. In order to measure these obligations, building society simulations (collective simulations) are used to forecast building society customers' future behavior. Uncertainty in connection with the measurement of these provisions arises from assumptions that need to be made about future customer behavior, which take account of various scenarios and action taken. Material inputs for the collective simulations are the rate of mortgage loans not drawn down and the pattern of customer cancellations.

Provisions are recognized for risks arising from ongoing legal disputes and cover the possible resulting losses. Such provisions are recognized when the reasons indicating that a legal dispute will result in a payment obligation for an entity in the DZ BANK Group are stronger than those indicating the opposite. Any concentration risk owing to similarities between individual cases is taken into consideration.

The amount in which provisions are recognized for risks arising from ongoing legal disputes is based on the information available at the time and is subject to assumptions and discretion in how a dispute is assessed. For example, this may be because the entity in the DZ BANK Group does not yet have at its disposal all the information required to make a final assessment of the legal dispute, particularly during the early stages of proceedings. Moreover, predictions made by entities in the DZ BANK Group in relation to changes to legal circumstances, changes to official interpretations, or – in the case of court cases – to procedural orders, decisions by the courts, or the arguments expected to be put forward by the opponent in the case may later turn out to be unfounded.

The expense incurred by the unwinding of the discount on provisions is recognized as interest expense under net interest income.

>> 27 Subordinated capital

Subordinated capital comprises all registered or bearer debt instruments that, in the event of insolvency or liquidation, are repaid only after settlement of all unsubordinated liabilities but before distribution to shareholders of any proceeds from the insolvency or liquidation.

Subordinated liabilities largely comprise subordinated bearer bonds and promissory notes. Profit-sharing rights outstanding comprise registered and bearer profit-participation certificates in issue. Regulatory Tier 1 capital that does not meet IFRS equity criteria is recognized as other hybrid capital. The share capital repayable on demand comprises the non-controlling interests in partnerships controlled by entities in the DZ BANK Group. These non-controlling interests must be classified as subordinated.

Subordinated capital and gains and losses on this capital are measured and recognized in the same way as deposits from banks and customers.

>> 28 Contingent liabilities

Contingent liabilities are possible obligations arising from past events. The existence of these obligations will only be confirmed by future events outside the control of the entities in the DZ BANK Group. Present obligations arising out of past events but not recognized as provisions because of the improbability of an outflow of resources embodying economic benefits or because the amount cannot be measured with sufficient reliability also constitute contingent liabilities.

The amount of contingent liabilities is disclosed in the notes unless the probability of an outflow of resources embodying economic benefits is remote.

Contingent liabilities are measured at the best estimate of possible future outflows of resources embodying economic benefits.

Contingent liabilities in respect of litigation risk are reported when the reasons indicating that there is no current obligation are stronger than those indicating the opposite, but there is still a likelihood that a legal dispute will result in a payment obligation for an entity in the DZ BANK Group. Risks arising from legal disputes are assessed according to how likely they are to occur.

B Disclosure of interests in other entities

>> 29 Investments in subsidiaries

Proportion of the DZ BANK Group's activities and cash flow attributable to non-controlling interests

In the DZ BANK Group, material non-controlling interests in the capital and net income exist in the following subsidiaries:

€ million	Dec. 31, 2018	Dec. 31, 2017
Bausparkasse Schwäbisch Hall subgroup	215	233
DZ PRIVATBANK	64	87
R+V Versicherung subgroup	951	1,032
Union Asset Management Holding subgroup	38	36
DZ BANK Capital Funding Trust I	299	299
DZ BANK Capital Funding Trust II	492	497
DZ BANK Capital Funding Trust III	345	348
DZ BANK Perpetual Funding Issuer (Jersey) Limited	240	240
Other	93	43
Total	**2,737**	**2,815**

Bausparkasse Schwäbisch Hall

Bausparkasse Schwäbisch Hall AG – Bausparkasse der Volksbanken und Raiffeisenbanken, Schwäbisch Hall (BSH) is the parent company of the BSH subgroup. BSH is headquartered in Schwäbisch Hall. DZ BANK directly holds 96.9 percent of the shares in BSH (December 31, 2017: 96.9 percent). The share of voting rights is equal to the shareholding. Non-controlling interests account for 3.1 percent of the voting rights and shares (December 31, 2017: 3.1 percent). As was the case a year earlier, most of these non-controlling interests are held by local cooperative banks.

The net income for the year attributable to non-controlling interests was €18 million (2017: €20 million). This included the net income for the year attributable to non-controlling interests in the BSH subgroup of €11 million (2017: €11 million). The carrying amount of non-controlling interests within the DZ BANK Group was €215 million (December 31, 2017: €233 million). Of this amount, €74 million was attributable to non-controlling interests within the BSH subgroup (December 31, 2017: €95 million). DZ BANK has concluded a profit-transfer agreement with BSH. This guarantees a cash settlement of €6.97 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of BSH until the end of the 2020 financial year. Guaranteed dividends of €1 million were paid to outside shareholders of BSH in 2018 (2017: €1 million). In the BSH subgroup, dividends of €4 million were paid to non-controlling interests (2017: €4 million).

Aggregated financial information for the BSH subgroup:

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	71,667	68,337
Liabilities	66,510	63,233

€ million	2018	2017
Interest income and fee and commission income	1,693	1,751
Net profit	197	222
Other comprehensive loss	-85	-37
Total comprehensive income	112	185
Cash flow	-7	-25

DZ PRIVATBANK

DZ PRIVATBANK S.A., Strassen, Luxembourg, (DZ PRIVATBANK S.A.), headquartered in Luxembourg, together with its wholly owned subsidiaries DZ PRIVATBANK (Schweiz) AG, Zurich, Switzerland, IPConcept (Luxemburg) S.A., Strassen, Luxembourg, and IPConcept (Schweiz) AG, Zurich, Switzerland, is the cooperative center of excellence for the private banking business of the local cooperative banks in Germany.

DZ BANK directly holds 91.3 percent (December 31, 2017: 90.7 percent) of the shares in DZ PRIVATBANK S.A. The share of voting rights is equal to the shareholding. The other shares are held by local cooperative banks and cooperative investors.

The net loss for the year attributable to the non-controlling interests was €14 million (2017: net income of €4 million). The carrying amount of the non-controlling interests was €64 million (December 31, 2017: €87 million). The dividend distributed to the non-controlling interests came to €1 million in 2018: (2017: €1 million).

Aggregated financial information for DZ PRIVATBANK:

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	18,322	16,802
Liabilities	17,503	15,802

€ million	2018	2017
Interest income and fee and commission income	541	579
Net profit/loss	-136	13
Other comprehensive income/loss	3	-15
Total comprehensive loss	-133	-2
Cash flow	1,516	1,229

R+V Versicherung

The R+V Group is a subgroup of the DZ BANK Group that, with its individual companies, offers all types of insurance in all of the non-life, life, and health insurance sectors. It also takes on inward reinsurance business in the international market.

R+V Versicherung AG, Wiesbaden, (R+V) is the parent company of the R+V subgroup. R+V is headquartered in Wiesbaden. DZ BANK directly holds 92.1 percent of the shares in R+V (December 31, 2017: 92.1 percent). The share of voting rights is equal to the shareholding. Non-controlling interests account for 7.9 percent of the voting rights and shares (December 31, 2017: 7.9 percent). Within this figure, local cooperative banks hold 6.1 percent (December 31, 2017: 6.1 percent). The other 1.8 percent (December 31, 2017: 1.8 percent) is held by other entities in the cooperative sector.

The net income for the year attributable to the non-controlling interests was €42 million (2017: €64 million). This included the net income for the year attributable to non-controlling interests in the R+V subgroup of €20 million (2017: €29 million). The carrying amount of the non-controlling interests in the DZ BANK Group was €951 million (December 31, 2017: €1,032 million). Of this amount, €486 million was attributable to non-controlling interests within the R+V subgroup (December 31, 2017: €570 million). DZ BANK has concluded a profit-transfer agreement with R+V. This guarantees an annual cash settlement of €6.30 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of R+V until the end of the 2021 financial year. Guaranteed dividends of €7 million were paid to outside shareholders of R+V in 2018 (2017: €7 million). In the R+V subgroup, dividends of €8 million were paid to non-controlling interests (2017: €9 million).

Aggregated financial information for the R+V subgroup:

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	107,351	103,419
Liabilities	100,684	96,636

€ million	2018	2017
Premiums earned	15,997	15,181
Net profit	220	402
Other comprehensive income/loss	-497	22
Total comprehensive income/loss	-277	424

Union Asset Management Holding

Union Asset Management Holding AG, Frankfurt am Main, (UMH) is the parent company of the UMH subgroup. UMH is headquartered in Frankfurt am Main. Other major locations are Hamburg and Luxembourg. DZ BANK's aggregated shareholding of the shares in UMH is 96.6 percent (December 31, 2017: 96.6 percent). The share of voting rights is equal to the aggregated shareholding. Non-controlling interests account for 3.4 percent of the shares (December 31, 2017: 3.4 percent). Most of these non-controlling interests are held by local cooperative banks. The proportion held indirectly by DZ BANK is 95.8 percent (December 31, 2017: 95.8 percent).

The carrying amount of the non-controlling interests within the DZ BANK Group was €38 million (December 31, 2017: €36 million) and related to the multiplicative share of the capital of UMH. Of this amount, €24 million was attributable to non-controlling interests within the UMH subgroup (December 31, 2017: €23 million). The net income for the year attributable to the non-controlling interests was €18 million (2017: €21 million). This included the net income for the year attributable to non-controlling interests in the UMH subgroup of €8 million (2017: €7 million). The dividend distributed to the non-controlling interests totaled €15 million in 2018 (2017: €12 million). €6 million of this amount was paid as dividends to non-controlling interests in the UMH subgroup (2017: €6 million).

Aggregated financial information for the UMH subgroup:

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	2,559	2,445
Liabilities	1,167	1,070

€ million	2018	2017
Interest income and fee and commission income	2,474	2,342
Net profit	347	421
Other comprehensive income/loss	-3	15
Total comprehensive income	344	436

DZ BANK Capital Funding Trust I, II, and III and DZ BANK Perpetual Funding Issuer (Jersey) Limited

DZ BANK has established companies in Delaware, USA and Jersey, Channel Islands in order to increase own funds in accordance with section 10a of the German Banking Act (KWG). The business activities of these companies are limited to the issuance of open-ended equity instruments without redemption incentives. These equity instruments that have been issued are held by non-voting non-controlling interests in the DZ BANK Group. The companies in question are:

– DZ BANK Capital Funding Trust I, Wilmington, Delaware,
– DZ BANK Capital Funding Trust II, Wilmington, Delaware,
– DZ BANK Capital Funding Trust III, Wilmington, Delaware,
– DZ BANK Perpetual Funding Issuer (Jersey) Limited, St. Helier, Jersey.

The companies were established at their current registered office. The Delaware companies are headquartered in New York, USA. The Channel Islands companies are headquartered in Frankfurt am Main. Virtually 100 percent of the issued share capital of each of the companies is attributable to non-voting non-controlling interests, while the voting rights in the companies are attached to only a small proportion of the shares. As a result, virtually all of the profits and losses of the companies are attributable to the non-controlling interests.

The companies' net income for the year is shown in the following table:

€ million	2018	2017
DZ BANK Capital Funding Trust I	7	7
DZ BANK Capital Funding Trust II	6	6
DZ BANK Capital Funding Trust III	4	4
DZ BANK Perpetual Funding Issuer (Jersey) Limited	1	1

Distributions of dividends to the non-controlling interests generally take the form of a variable or fixed-rate coupon whose actual payment is not subject to a contractual obligation.

The dividends paid to the non-controlling interests in the financial year are shown in the following table:

€ million	2018	2017
DZ BANK Capital Funding Trust I	7	7
DZ BANK Capital Funding Trust II	6	6
DZ BANK Capital Funding Trust III	4	4
DZ BANK Perpetual Funding Issuer (Jersey) Limited	1	1

Aggregated financial information for the DZ BANK Capital Funding Trust companies and the DZ BANK Perpetual Funding Issuer company:

€ million	Dec. 31, 2018	Dec. 31, 2017
Non-current assets	1,410	1,410
Liabilities	-	-

€ million	2018	2017
Interest income and fee and commission income	18	18
Net profit	18	18
Total comprehensive income	18	18

Nature and extent of significant restrictions

National regulatory requirements, contractual provisions, and provisions of company law restrict the DZ BANK Group's ability to transfer assets within the group. Where these restrictions can be specifically assigned to individual line items on the balance sheet, the carrying amounts of the assets and liabilities subject to restrictions on the balance sheet date are shown in the following table:

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	**85,850**	**81,559**
Loans and advances to customers	2,689	2,812
Investments	5	5
Investments held by insurance companies	83,152	78,738
Other assets	4	4
Liabilities	**140,359**	**132,474**
Deposits from banks	1,793	1,776
Deposits from customers	59,996	56,642
Provisions	1,072	983
Insurance liabilities	77,498	73,073

Nature of the risks associated with interests in consolidated structured entities

Risks arising from interests in consolidated structured entities largely result from loans to fully consolidated funds, some of which are extended in the form of junior loans.

>> 30 Interests in joint arrangements and associates

Nature, extent, and financial effects of interests in joint arrangements

Českomoravská stavební spořitelna

Českomoravská stavební spořitelna, a.s., Prague, Czech Republic, (ČMSS) is a joint venture between BSH and the Czech Republic's largest bank, Československá obchodní banka, a.s., Prague, Czech Republic, (ČSOB). ČMSS is headquartered in Prague, Czech Republic. It is one of Europe's largest building societies. ČMSS is a leading provider of home savings and home finance products in the Czech Republic. BSH's shareholding was 45.0 percent on the balance sheet date, as it had been at December 31, 2017. The other 55.0 percent is held by ČSOB (December 31, 2017: 55.0 percent). In the DZ BANK Group, the interests in ČMSS are accounted for using the equity method. ČMSS paid a dividend of €19 million to BSH in 2018 (2017: €20 million).

Aggregated financial information for ČMSS:

€ million	Dec. 31, 2018	Dec. 31, 2017
Current assets	1,085	1,202
of which: cash and cash equivalents	60	874
Non-current assets	4,670	4,627
Current liabilities	1,245	1,160
of which: financial liabilities	1,165	1,125
Non-current liabilities	4,186	4,321
of which: financial liabilities	4,164	4,281

€ million	2018	2017
Interest income	165	175
Interest expense	-86	-87
Fee and commission income	41	39
Fee and commission expenses	-19	-18
Administrative expenses	-51	-54
Income taxes	-8	-8
Profit from continuing operations, net of tax	34	42
Other comprehensive loss	-5	-1
Total comprehensive income	29	41

Reconciliation from the aggregated financial information to the carrying amount of the interests in ČMSS:

€ million	Dec. 31, 2018	Dec. 31, 2017
Total net assets	324	348
Share of net assets	146	157
Carrying amount using the equity method	146	157

Prvá stavebná sporiteľňa

Prvá stavebná sporiteľňa a.s., Bratislava, Slovakia, (PSS) is a joint venture between BSH and its partners Raiffeisen Bausparkasse Holding GmbH, Vienna, Austria, Slovenská sporiteľňa a.s., Bratislava, Slovakia, and Erste Group Bank AG, Vienna, Austria. PSS is headquartered in Bratislava, Slovakia. PSS is the market leader for building society operations in Slovakia. BSH's shareholding in PSS was 32.5 percent on the balance sheet date, as it had been at December 31, 2017. In the DZ BANK Group, the interests in PSS are accounted for using the equity method. PSS did not pay any dividend to BSH in 2018 (2017: €7 million).

Aggregated financial information for PSS:

€ million	Dec. 31, 2018	Dec. 31, 2017
Current assets	636	721
of which: cash and cash equivalents	69	103
Non-current assets	2,443	2,301
Current liabilities	762	904
of which: financial liabilities	744	855
Non-current liabilities	2,074	1,864
of which: financial liabilities	2,062	1,851

€ million	2018	2017
Interest income	96	106
Interest expense	-47	-49
Fee and commission income	17	17
Fee and commission expenses	-1	-1
Administrative expenses	-35	-35
Income taxes	-5	-5
Profit from continuing operations, net of tax	16	18
Other comprehensive income/loss	-	-3
Total comprehensive income	16	15

Reconciliation from the aggregated financial information to the carrying amount of the interests in PSS:

€ million	Dec. 31, 2018	Dec. 31, 2017
Total net assets	243	254
Share of net assets	79	82
Carrying amount using the equity method	79	82

Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse)

Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse), Tianjin, China, (SGB) is a joint venture between BSH and China Construction Bank Corporation, Beijing, China. SGB is headquartered in Tianjin, China. Its business activities are concentrated in the regions of Tianjin (population of approx. 13 million) and Chongqing (population of approx. 30 million). BSH's shareholding in this Chinese building society was 24.9 percent on the balance sheet date, as it had been at December 31, 2017. In the DZ BANK Group, the interests in SGB are accounted for using the equity method. SGB did not pay a dividend in 2018, as had been the case in the previous year.

Aggregated financial information for SGB:

€ million	Dec. 31, 2018	Dec. 31, 2017
Current assets	618	1,268
of which: cash and cash equivalents	467	649
Non-current assets	2,663	2,424
Current liabilities	2,497	2,948
of which: financial liabilities	2,459	2,358
Non-current liabilities	415	372
of which: financial liabilities	414	362

€ million	2018	2017
Interest income	129	140
Interest expense	-86	-101
Fee and commission income	9	14
Fee and commission expenses	-11	-11
Administrative expenses	-36	-35
Income taxes	-	-2
Profit/loss from continuing operations, net of tax	-2	6
Other comprehensive income/loss	-3	-23
Total comprehensive income/loss	-5	-17

Reconciliation from the aggregated financial information to the carrying amount of the interests in SGB:

€ million	Dec. 31, 2018	Dec. 31, 2017
Total net assets	**369**	**372**
Share of net assets	**92**	**93**
Cumulative impairment losses on the carrying amount of the investment	-62	-44
Carrying amount under the equity method	**30**	**49**

Deutsche WertpapierService Bank

Deutsche WertpapierService Bank AG, Frankfurt am Main, (dwpbank) is a joint venture of DZ BANK with Westfälisch-Lippische Sparkassen- und Giroverband, Münster, Rheinischer Sparkassen- und Giroverband, Düsseldorf, and 3 other federal state banks in Germany and is accounted for in the DZ BANK Group's financial statements using the equity method. dwpbank is headquartered in Frankfurt am Main. Its capital is divided into 20,000,000 voting registered shares with transfer restrictions. DZ BANK holds a 50.0 percent stake in dwpbank, as it did at December 31, 2017. The equity method is applied to dwpbank on the basis of financial statements prepared in accordance with HGB.

The shares in dwpbank are not traded in an active market. dwpbank paid a dividend of €8 million to DZ BANK in 2018 (2017: €4 million).

Aggregated financial information for dwpbank:

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	590	917
Liabilities	386	721
of which: financial liabilities	177	509

dwpbank only has a small amount of cash and cash equivalents.

€ million	2018	2017
Interest income	4	4
Interest expense	-2	-1
Fee and commission income	299	873
Fee and commission expenses	-59	-651
Administrative expenses	-211	-214
Income taxes	-3	-6
Profit from continuing operations, net of tax	23	25
Total comprehensive income	23	25

Reconciliation from the aggregated financial information to the carrying amount of the interests in dwpbank:

€ million	Dec. 31, 2018	Dec. 31, 2017
Total net assets	**204**	196
Share of net assets	**102**	98
Capitalization of goodwill	29	29
Carrying amount under the equity method	**131**	127

VB-Leasing International

VB-Leasing International Holding GmbH, Vienna, Austria, (VBLI) was a joint venture of the VR LEASING subgroup until it was sold on September 28, 2018. It was included in the DZ BANK Group's consolidated financial statements using the equity method. VBLI is headquartered in Vienna, Austria. The company focuses on holding equipment leasing companies in central and eastern Europe. The VR LEASING subgroup's shareholding in VBLI up to the date of disposal was 50.0 percent, which was unchanged compared with December 31, 2017. The carrying amount of the investment under the equity method had been €23 million as at December 31, 2017. VBLI did not pay a dividend to the VR LEASING subgroup in 2018 or 2017.

Other joint ventures

The carrying amount of the equity-accounted joint ventures that, individually, are not material totaled €96 million on the balance sheet date (December 31, 2017: €104 million).

Aggregated financial information for equity-accounted joint ventures that, individually, are not material:

€ million	2018	2017
Share of profit/loss from continuing operations, net of tax	5	-7
Share of other comprehensive income/loss	-	-9
Share of total comprehensive income/loss	5	-16

Nature, extent, and financial effects of investments in associates

Other associates

The carrying amount of the equity-accounted associates that, individually, are not material totaled €288 million on the balance sheet date (December 31, 2017: €315 million).

Aggregated financial information for equity-accounted associates that, individually, are not material:

€ million	2018	2017
Share of profit/loss from continuing operations, net of tax	5	-44
Share of other comprehensive income/loss	-	6
Share of total comprehensive income/loss	5	-38

>> 31 Interests in unconsolidated structured entities

Structured entities are entities that have been designed so that voting rights or similar rights are not the dominant factor in deciding who controls the entity. The DZ BANK Group distinguishes between the following types of interests in unconsolidated structured entities, based on their design and the related risks:
- Interests in investment funds issued by the DZ BANK Group,
- Interests in investment funds not issued by the DZ BANK Group,
- Interests in securitization vehicles,
- Interests in asset-leasing vehicles.

Interests in investment funds issued by the DZ BANK Group

The interests in the investment funds issued by the DZ BANK Group largely comprise investment funds issued by entities in the Union Investment Group in accordance with the contractual form model without voting rights and, to a lesser extent, those that are structured as a company with a separate legal personality. The number of unit/share types and volume of investment funds issued and managed by the UMH subgroup can be broken down as follows:

	Dec. 31, 2018		Dec. 31, 2017	
€ million	Volume	Number	Volume	Number
Mutual funds	165,032	387	171,793	391
of which: guarantee funds	2,809	36	4,131	48
Special funds	99,899	392	94,927	384
of which: guarantee funds	-	-	-	-
Total	**264,931**	**779**	**266,720**	**775**
of which: guarantee funds	2,809	36	4,131	48

Furthermore, DVB Bank SE, Frankfurt am Main, (DVB) makes subordinated loans available to fully consolidated funds for the purpose of transport finance. In turn, these funds make subordinated loans or direct equity investments available to unconsolidated entities.

The maximum exposure of the investment funds issued and managed by the DZ BANK Group is shown in the following tables as a gross value, excluding deduction of available collateral:

AS AT DECEMBER 31, 2018

€ million	Mutual funds	of which: guarantee funds	Special funds	of which: guarantee funds	Total
Assets	**1,207**	-	**5,025**	-	**6,232**
Loans and advances to banks	-	-	-	-	-
Loans and advances to customers	3	-	77	-	80
Investments	964	-	201	-	1,165
Investments held by insurance companies	97	-	4,573	-	4,670
Other assets	121	-	17	-	138
Non-current assets and disposal groups classified as held for sale	22	-	157	-	179
Liabilities	**6**	**6**	-	-	**6**
Hedging instruments (negative fair values)	6	6	-	-	6
Other liabilities	-	-	-	-	-
Net exposure recognized on the balance sheet	1,201	-6	5,025	-	6,226
Contingent liabilities	-	-	-	-	-
Financial guarantee contracts, loan commitments and other obligations	**2,629**	**2,629**	-	-	**2,629**
Financial guarantee contracts	-	-	-	-	-
Loan commitments	-	-	-	-	-
Other obligations	2,629	2,629	-	-	2,629
Actual maximum exposure	**3,830**	**2,623**	**5,025**	-	**8,855**

AS AT DECEMBER 31, 2017

€ million	Mutual funds	of which: guarantee funds	Special funds	of which: guarantee funds	Total
Assets	**1,707**	**-**	**4,534**	**-**	**6,241**
Loans and advances to banks	11	-	-	-	11
Loans and advances to customers	3	-	204	-	207
Investments	1,434	-	222	-	1,656
Investments held by insurance companies	106	-	4,095	-	4,201
Other assets	126	-	13	-	139
Non-current assets and disposal groups classified as held for sale	27	-	-	-	27
Liabilities	**7**	**6**	**-**	**-**	**7**
Hedging instruments (negative fair values)	6	6	-	-	6
Other liabilities	1	-	-	-	1
Net exposure recognized on the balance sheet	1,700	-6	4,534	-	6,234
Contingent liabilities	**-**	**-**	**-**	**-**	**-**
Financial guarantee contracts, loan commitments and other obligations	**3,808**	**3,808**	**9**	**-**	**3,817**
Financial guarantee contracts	-	-	-	-	-
Loan commitments	-	-	9	-	9
Other obligations	3,808	3,808	-	-	3,808
Actual maximum exposure	**5,508**	**3,802**	**4,543**	**-**	**10,051**

Regarding the disclosure of the maximum exposure, it must be noted that the 'Other obligations' line item in the table above includes market price guarantees in the amount of the nominal amounts of the guarantee commitments for guarantee funds of €2,635 million (December 31, 2017: €3,814 million), less negative fair values of €6 million (December 31, 2017: €6 million) recognized as a liability for the put options embedded in these products. The maximum exposure for market price guarantees for the guarantee funds does not represent the economic risk of this product type because the economic risk also has to reflect these guarantee funds' net assets of €2,809 million on the balance sheet date (December 31, 2017: €4,131 million) (net asset value) and the management model used with these products to safeguard the minimum payment commitments. The benefit under a market price guarantee is triggered if the fair value of the affected units does not reach the specified guaranteed level on particular dates. The put options embedded in the guarantee funds are reported as derivatives (negative fair values) under equity and liabilities on the balance sheet.

The interests in investment funds issued and managed by the DZ BANK Group resulted in losses of €85 million in the reporting year (2017: losses of €77 million). Distributions in 2018 relating to each investment fund were offset in the calculation of the losses suffered in respect of each fund. In the year under review, there were no losses that only impacted on other comprehensive income/loss (2017: losses of €2 million). An amount of €80 million was also added to loss allowances (2017: €1 million added to allowances for losses on loans and advances).

The revenue generated from investment funds issued by the DZ BANK Group was as follows:

2018

€ million	Mutual funds	of which: guarantee funds	Special funds	of which: guarantee funds	**Total**
Interest income and current income and expense	8	-	9	-	17
Fee and commission income	2,025	29	167	-	2,192
Gains and losses on investments	-23	-	-	-	-23
Other gains and losses on valuation of financial instruments	-17	-	-	-	-17
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	23	-	23
Total	**1,993**	**29**	**199**	**-**	**2,192**

2017

€ million	Mutual funds	of which: guarantee funds	Special funds	of which: guarantee funds	**Total**
Interest income and current income and expense	13	-	2	-	15
Fee and commission income	1,793	41	135	-	1,928
Other gains and losses on valuation of financial instruments	9	4	-	-	9
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	32	-	32
Total	**1,815**	**45**	**169**	**-**	**1,984**

Interests in investment funds not issued by the DZ BANK Group

The interests in the investment funds not issued by the DZ BANK Group above all comprise investment funds managed by entities in the Union Investment Group within the scope of their own decision-making powers that have been issued by entities outside the DZ BANK Group and parts of such investment funds. Their total volume amounted to €37,405 million (December 31, 2017: €37,852 million). The DZ BANK Group also extends loans to investment funds in order to generate interest income.

In addition, there were investment funds issued by entities outside the group in connection with unit-linked life insurance amounting to €7,244 million (December 31, 2017: €7,498 million) that, however, do not result in a maximum exposure.

The maximum exposure arising from the investment funds not issued by the DZ BANK Group is shown as a gross value, excluding deduction of available collateral. The following assets and liabilities have been recognized on the DZ BANK Group's balance sheet in connection with interests in investment funds not issued by the DZ BANK Group:

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	**4,311**	**3,836**
Loans and advances to customers	4,311	3,836
Liabilities	**-**	**-**
Net exposure recognized on the balance sheet	4,311	3,836
Contingent liabilities	**-**	**-**
Financial guarantee contracts, loan commitments and other obligations	**182**	**186**
Financial guarantee contracts	-	-
Loan commitments	182	186
Other obligations	-	-
Maximum exposure	**4,493**	**4,022**

The revenue generated from interests in investment funds not issued by the DZ BANK Group was as follows:

€ million	2018	2017
Interest income	74	61
Fee and commission income	80	72
Total	**154**	**133**

Interests in securitization vehicles

The interests in securitization vehicles are interests in vehicles where the DZ BANK Group's involvement goes beyond that of an investor. The assets and liabilities listed below have been recognized on the DZ BANK Group's balance sheet in connection with these interests. There is also an additional exposure from contingent liabilities and from financial guarantee contracts, loan commitments, and other obligations, which are shown at their nominal amounts. Only financial guarantee contracts, loan commitments, and other obligations for which no liability or contingent liability has been recognized are included. The maximum exposure is determined as a gross value, excluding deduction of available collateral.

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	**1,432**	**1,128**
Loans and advances to customers	1,354	1,022
Financial assets held for trading	21	29
Investments	57	77
Liabilities	**4**	**4**
Net exposure recognized on the balance sheet	1,428	1,124
Contingent liabilities	-	-
Financial guarantee contracts, loan commitments and other obligations	**2,467**	**2,859**
Financial guarantee contracts	-	-
Loan commitments	2,467	2,859
Other obligations	-	-
Maximum exposure	**3,895**	**3,983**

The revenue generated from interests in securitization vehicles was as follows:

€ million	2018	2017
Interest income	7	7
Fee and commission income	46	47
Gains and losses on trading activities	-6	2
Gains and losses on investments	1	-
Total	**48**	**56**

The material interests in securitization vehicles comprise the two multi-seller asset-backed commercial paper (ABCP) programs: CORAL and AUTOBAHN.

DZ BANK acts as sponsor and program agent for both programs. It is also the program administrator for AUTOBAHN. As sponsor, DZ BANK was involved in setting up the structured entities and provides various services for them. Under the CORAL program, customers of the bank sell assets to separate special-purpose entities. The assets purchased essentially consist of trade receivables, loans, and lease receivables. Under the AUTOBAHN program, assets of North American customers are sold to specially established special-purpose entities and funded through the issuing company by means of ABCP issues.

The special-purpose entities are unconsolidated structured entities. Owing to the cellular structure of the transactions, there are no investee companies to be assessed. DZ BANK does not have control over the individual silos because it acts as agent and not as principal.

The purchase of the assets is funded using liquidity lines and by issuing money market-linked ABCPs. DZ BANK is a liquidity agent for the program, which involves making liquidity facilities available.

In 2018, DZ BANK did not provide either of the programs with any non-contractual support. Moreover, it currently has no intention to provide financial or other support. Because the ABCP programs are fully supported programs, DZ BANK bears all the credit risk. DZ BANK did not incur any losses in the year under review (2017: only negligible losses).

Interests in asset-leasing vehicles

The interests in asset-leasing vehicles comprise shares in limited partnerships and voting shares, other than the shares in limited partnerships, in partnerships established by VR LEASING for the purpose of real estate leasing (asset-leasing vehicles), in which the asset, and the funding occasionally provided by the DZ BANK Group, are placed.

The assets and liabilities listed below have been recognized on the DZ BANK Group's balance sheet in connection with the interests in real estate asset-leasing vehicles. There is also an additional exposure from contingent liabilities and from financial guarantee contracts, loan commitments, and other obligations, which are shown at their nominal amounts. They only include financial guarantee contracts, loan commitments, and other obligations for which no liability or contingent liability has been recognized. The actual maximum exposure is determined as a gross value, excluding deduction of any collateral available.

€ million	Dec. 31, 2018	Dec. 31, 2017
Assets	**5**	**5**
Loans and advances to customers	4	4
Investments	1	1
Liabilities	**11**	**20**
Deposits from customers	11	20
Net exposure recognized on the balance sheet	-6	-15
Contingent liabilities	**-**	**-**
Financial guarantee contracts, loan commitments and other obligations	**2**	**2**
Financial guarantee contracts	2	2
Loan commitments	-	-
Other obligations	-	-
Maximum exposure	**-4**	**-13**

The interest income and current income and expense generated from interests in asset-leasing vehicles totaled €5 million (2017: €5 million).

The guarantees to asset-leasing vehicles are only of a negligible amount (December 31, 2017: €1 million).

>> 32 Sponsoring arrangements for unconsolidated structured entities

The DZ BANK Group sponsors an unconsolidated structured entity within the meaning of IFRS 12 if it was involved in establishing the structured entity or if the structured entity is linked by name to DZ BANK or a subsidiary within the DZ BANK Group and there are no interests, within the meaning of IFRS 12, in the structured entity.

The DZ BANK Group acts as sponsor for an unconsolidated structured entity because it is linked with the structured entity by name and it does not have any interests in the structured entity within the meaning of IFRS 12. The structured entity is an open-ended real estate fund for which the DZ BANK Group receives a fee for sales and for services. The fee amounted to €4 million in 2018 (2017: €2 million) and is recognized in net fee and commission income.

C Disclosures relating to the income statement and the statement of comprehensive income

>> 33 Segment information

Information on operating segments

2018

€ million	DZ BANK	BSH	DVB
Net interest income	1,081	766	177
Net fee and commission income	362	-40	84
Gains and losses on trading activities	258	-	-3
Gains and losses on investments	142	13	-18
Other gains and losses on valuation of financial instruments	36	8	-105
Premiums earned	-	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	-
Insurance benefit payments	-	-	-
Insurance business operating expenses	-	-	-
Loss allowances	140	-11	-80
Administrative expenses	-1,466	-480	-200
Other net operating income	-31	39	15
Profit/loss before taxes	**522**	**295**	**-130**
Cost/income ratio (%)	79.3	61.1	>100.0
Regulatory RORAC (%)	8.0	26.8	-33.8
Average own funds/solvency requirement	4,772	1,098	352
Total assets/total equity and liabilities as at Dec. 31, 2018	271,189	71,667	20,566

2017

€ million	DZ BANK	BSH	DVB
Net interest income	1,276	833	168
Net fee and commission income	350	-48	93
Gains and losses on trading activities	485	-	-26
Gains and losses on investments	49	18	-64
Other gains and losses on valuation of financial instruments	21	1	-23
Premiums earned	-	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	-
Insurance benefit payments	-	-	-
Insurance business operating expenses	-	-	-
Loss allowances	22	-20	-728
Administrative expenses[1]	-1,563	-470	-175
Other net operating income	112	20	-19
Profit/loss before taxes	**752**	**334**	**-774**
Cost/income ratio (%)	68.2	57.0	>100.0
Regulatory RORAC (%)	9.7	32.5	>100.0
Average own funds/solvency requirement	4,598	1,027	506
Total assets/total equity and liabilities as at Dec. 31, 2017	265,843	68,337	23,414

1 Amount restated in the DZ BANK operating segment and in the DZ BANK Group (see note 2).

	DZ HYP	DZ PRIVAT-BANK	R+V	TeamBank	UMH	VR LEASING	Other/ Consolidation	**Total**
	522	64	-	449	25	153	-438	2,799
	2	182	-	-13	1,416	7	-45	1,955
	1	10	-	-	-	-	19	285
	-10	-	-	-	-23	22	24	150
	-20	-	-	-	-51	-	12	-120
	-	-	15,997	-	-	-	-	15,997
	-	-	1,342	-	-	-	-69	1,273
	-	-	-14,208	-	-	-	-	-14,208
	-	-	-2,721	-	-	-	149	-2,572
	12	-	-	-70	-	-13	1	-21
	-299	-219	-	-222	-895	-142	-136	-4,059
	24	-188	3	1	30	-26	24	-109
	232	**-151**	**413**	**145**	**502**	**1**	**-459**	**1,370**
	57.6	>100.0	-	50.8	64.1	91.0	-	74.5
	16.0	-44.8	5.5	31.8	>100.0	0.2	-	8.2
	1,460	336	7,564	458	346	325	-	16,711
	85,882	18,322	107,351	8,536	2,559	4,768	-72,107	518,733

	DZ HYP	DZ PRIVAT-BANK	R+V	TeamBank	UMH	VR LEASING	Other/ Consolidation	**Total**
	545	117	-	426	29	143	-596	2,941
	-	126	-	1	1,415	15	-88	1,864
	11	10	-	-	-	-	26	506
	3	-	-	-	8	10	-14	10
	291	7	-	-	13	-	-21	289
	-	-	15,181	-	-	-	-	15,181
	-	-	3,531	-	-	-	-57	3,474
	-	-	-15,312	-	-	-	-	-15,312
	-	-	-2,595	-	-	-	159	-2,436
	18	-	-	-70	-	-10	2	-786
	-233	-217	-	-214	-858	-136	-93	-3,959
	2	-23	-10	5	3	-39	-13	38
	637	**20**	**795**	**148**	**610**	**-17**	**-695**	**1,810**
	27.3	91.6	-	49.5	58.4	>100.0	-	60.4
	43.4	6.8	11.4	34.6	>100.0	-7.6	-	11.3
	1,487	301	6,970	430	350	330	-	15,999
	85,855	16,802	103,419	8,009	2,445	4,749	-73,279	505,594

General information on operating segments

The information on operating segments has been prepared using the management approach in accordance with IFRS 8. Under this standard, external reporting must include segment information that is used internally for the management of the entity and for the purposes of quantitative reporting to the chief operating decision-makers. The DZ BANK Group's information on operating segments has therefore been prepared on the basis of the internal management reporting system.

Definition of operating segments

Segmentation is based on the integrated risk and capital management system in the DZ BANK Group, the function of which is to create transparency, notably in respect of the risk structure and risk-bearing capacity of the individual management units in the group. The segment information presents separate disclosures for the management units DZ BANK, DZ HYP AG, Hamburg, (DZ HYP), TeamBank AG Nürnberg, Nuremberg, (TeamBank), DZ PRIVATBANK, and the BSH, DVB, R+V, UMH, and VR LEASING subgroups. The DG HYP and WL BANK operating segments were combined to form the DZ HYP operating segment following the merger of WL BANK into DG HYP. The figures for the prior year have been restated accordingly. All other companies in the DZ BANK Group, which are not required to provide regular quantitative reports to the chief operating decision-makers, and the consolidations are reported on an aggregated basis under Other/Consolidation.

Presentation of operating segments

Interest income and associated interest expenses generated by the operating segments are offset and reported as net interest income in the information on operating segments because, from a group perspective, the operating segments are managed solely on the basis of the net figure.

Measurement

Internal reporting to the chief operating decision-makers in the DZ BANK Group is primarily based on the generally accepted accounting and measurement principles applicable to the DZ BANK Group.

Intragroup transactions between operating segments are carried out on an arm's-length basis. These transactions are reported internally using the financial reporting standards applied to external financial reporting.

The key indicators for assessing the performance of the operating segments are profit/loss before taxes, the cost/income ratio, and the return on risk-adjusted capital (regulatory RORAC).

The cost/income ratio shows the ratio of administrative expenses to operating income and reflects the economic efficiency of the operating segment concerned. Operating income includes net interest income, net fee and commission income, gains and losses on trading activities, gains and losses on investments, other gains and losses on valuation of financial instruments, net income from insurance business, and other net operating income.

Regulatory RORAC is a risk-adjusted performance measure. In the reporting period, it reflected the relationship between adjusted profit (profit before taxes largely taking into account performance-related income and capital structure effects) and average own funds for the year (determined on a quarterly basis) in accordance with the own funds/solvency requirement for the financial conglomerate. It therefore shows the return on the regulatory risk capital employed.

Other/Consolidation

The consolidation-related adjustments shown under Other/Consolidation to reconcile operating segment profit/loss before taxes to consolidated profit/loss before taxes are attributable to the elimination of intragroup transactions and to the fact that investments in joint ventures and associates were accounted for using the equity method.

The adjustments to net interest income were primarily the result of the elimination of intragroup dividend payments and profit distributions in connection with intragroup liabilities to dormant partners and were also attributable to the early redemption of issued bonds and commercial paper that had been acquired by entities in the DZ BANK Group other than the issuer.

The figure under Other/Consolidation for net fee and commission income largely relates to the fee and commission business of TeamBank and the BSH subgroup with the R+V subgroup.

The remaining adjustments are mostly also attributable to the consolidation of income and expenses.

DZ BANK Group-wide disclosures

Information about geographical areas

The DZ BANK Group's operating income was generated in the following geographical areas:

€ million	2018	2017
Germany	4,630	5,728
Rest of Europe	727	691
Rest of World	309	351
Consolidation/reconciliation	-216	-215
Total	**5,450**	**6,555**

Information on geographical areas is presented according to the home countries of the companies included in the consolidated financial statements.

This information does not include the separate disclosure of certain non-current (largely tangible) assets because these assets are of minor significance in the DZ BANK Group's business model.

Information about products and services

Information on products and services offered by the DZ BANK Group is included in the income statement disclosures below.

>> 34 Net interest income

€ million	2018	2017
INTEREST INCOME AND CURRENT INCOME AND EXPENSE	**5,858**	**6,277**
Interest income from	**5,785**	**6,252**
Lending and money market business	6,150	6,430[1]
of which relating to: mortgage loans	860	893
home savings loans advanced by building society	1,044	1,032
finance leases	115	129
Bonds and other fixed-income securities	429	620[1]
Portfolio hedges of interest-rate risk	-542	-624
Financial assets with a negative effective interest rate	-253	-174
Other assets	1	-
Current income and expense from	**73**	**25**
Shares and other variable-yield securities	29	31
of which: income from other shareholdings	18	16
Investments in subsidiaries	3	4
Investments in associates	-	8
Operating leases	-1	-63
Entities accounted for using the equity method	38	41
of which relating to: investments in joint ventures	24	40
investments in associates	14	1
Income from profit-pooling, profit-transfer and partial profit-transfer agreements	4	4
INTEREST EXPENSE ON	**-3,059**	**-3,336**
Deposits from banks and customers	-2,916	-2,999[1]
of which relating to: home savings deposits	-373	-837
Debt certificates issued including bonds	-438	-491
Subordinated capital	-110	-179
Portfolio hedges of interest-rate risk	174	172
Financial liabilities with a positive effective interest rate	237	169
Provisions and other liabilities	-6	-8
Total	**2,799**	**2,941**

1 Amount restated (see note 2).

The interest income from other assets included €1 million from non-credit-risk-related modification gains on financial assets.

>> 35 Net fee and commission income

€ million	2018	2017
Fee and commission income	**3,760**	**3,585**
Securities business	2,793	2,688
Asset management	222	216
Payments processing including card processing	270	239
Lending business and trust activities	164	149
Financial guarantee contracts and loan commitments	52	51
International business	11	13
Building society operations	31	25
Other	217	204
Fee and commission expenses	**-1,805**	**-1,721**
Securities business	-1,145	-1,032
Asset management	-149	-147
Payments processing including card processing	-134	-123
Lending business	-74	-117
Financial guarantee contracts and loan commitments	-9	-10
Building society operations	-89	-97
Other	-205	-195
Total	**1,955**	**1,864**

In the reporting year, fee and commission income included revenue from contracts with customers pursuant to IFRS 15 in an amount of €3,749 million (see note 91).

>> 36 Gains and losses on trading activities

€ million	2018	2017
Gains and losses on non-derivative financial instruments and embedded derivatives	548	-228
Gains and losses on derivatives	-364	435
Gains and losses on exchange differences	101	299
Total	**285**	**506**

>> 37 Gains and losses on investments

€ million	2018
Gains and losses on the disposal of bonds and other fixed-income securities	**142**
Gains and losses on the disposal of shares and other variable-yield securities	**-23**
Gains and losses on the disposal of investments in subsidiaries	**11**
Gains and losses on investments in joint ventures	**46**
Disposals	27
Impairment losses	-4
Reversals of impairment losses	23
Gains and losses on investments in associates	**-26**
Disposals	7
Impairment losses	-33
Total	**150**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	2017
Gains and losses on bonds and other fixed-income securities	**55**
Disposals	57
Impairment losses	-10
Reversals of impairment losses	8
Gains and losses on shares and other variable-yield securities	**-9**
Disposals	2
Impairment losses	-11
Gains and losses on investments in subsidiaries	**2**
Disposals	5
Impairment losses	-3
Gains and losses on investments in joint ventures	**4**
Impairment losses	-15
Reversals of impairment losses	19
Gains and losses on investments in associates	**-42**
Disposals	1
Impairment losses	-43
Total	**10**

>> 38 Other gains and losses on valuation of financial instruments

€ million	2018	2017
Gains and losses from hedge accounting	**-21**	-27
Gains and losses on fair value hedges	-22	-27
Gains and losses on cash flow hedges	-	-
Gains and losses on hedges of net investments in foreign operations	1	-
Gains and losses on derivatives used for purposes other than trading	**-53**	-15
Gains and losses on financial instruments designated as at fair value through profit or loss	**-38**	331
Gains and losses on non-derivative financial instruments and embedded derivatives	-204	275
Gains and losses on derivatives	166	56
Gains and losses on financial assets mandatorily measured at fair value through profit or loss	**3**	
Gains and losses on contingent considerations in a business combination	**-11**	-
Total	**-120**	**289**

Gains and losses on derivatives used for purposes other than trading result from the recognition and measurement of derivatives that are used for economic hedging but are not included in hedge accounting.

>> 39 Premiums earned

€ million	2018	2017
Net premiums written	**16,009**	15,235
Gross premiums written	16,133	15,338
Reinsurance premiums ceded	-124	-103
Change in provision for unearned premiums	**-12**	-54
Gross premiums	-7	-59
Reinsurers' share	-5	5
Total	**15,997**	**15,181**

>>40 Gains and losses on investments held by insurance companies and other insurance company gains and losses

€ million	2018
Income from investments held by insurance companies	**5,220**
Interest income and current income	2,437
Income from reversals of impairment losses and reversals of loss allowances, and unrealized gains	512
Gains on valuation through profit or loss of investments held by insurance companies	1,475
Gains on disposals	796
Expenses in connection with investments held by insurance companies	**-4,119**
Administrative expenses	-150
Directly recognized depreciation/amortization expense, additions to loss allowances, and impairment losses and unrealized losses	-381
Losses on valuation through profit or loss of investments held by insurance companies	-2,792
Losses on disposals	-796
Other gains and losses of insurance companies	**172**
Other insurance gains and losses	251
Other non-insurance gains and losses	-79
Total	**1,273**

Income from and expenses in connection with investments held by insurance companies and other gains and losses of insurance companies included currency translation gains of €816 million (2017: losses of €524 million).

Income from and expenses in connection with investments held by insurance companies included additions to loss allowances of €8 million and reversals of loss allowances of €9 million.

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	2017
Income from investments held by insurance companies	**4,901**
Interest income and current income	2,548
Income from reversals of impairment losses and unrealized gains	114
Gains on valuation through profit or loss of investments held by insurance companies	982
Gains on disposals	1,257
Expenses in connection with investments held by insurance companies	**-1,711**
Administrative expenses	-131
Depreciation/amortization expense, impairment losses, and unrealized losses	-873
Losses on valuation through profit or loss of investments held by insurance companies	-483
Losses on disposals	-224
Other gains and losses of insurance companies	**284**
Other insurance gains and losses	333
Other non-insurance gains and losses	-49
Total	**3,474**

>> 41 Insurance benefit payments

€ million	2018	2017
EXPENSES FOR CLAIMS	**-10,742**	**-10,138**
Payments for claims	**-9,721**	**-8,983**
Gross payments for claims	-9,765	-9,064
Reinsurers' share	44	81
Change in the provision for claims outstanding	**-1,021**	**-1,155**
Gross change in the provision for claims outstanding	-1,021	-1,097
Reinsurers' share	-	-58
CHANGE IN THE BENEFIT RESERVE AND IN OTHER INSURANCE LIABILITIES	**-3,130**	**-4,695**
Change in the benefit reserve	**-3,134**	**-4,692**
Gross change in the benefit reserve	-3,151	-4,689
Reinsurers' share	17	-3
Change in other insurance liabilities	**4**	**-3**
EXPENSES FOR PREMIUM REFUNDS	**-336**	**-479**
Gross expenses for premium refunds	-878	-794
Expenses for deferred premium refunds	542	315
Total	**-14,208**	**-15,312**

The net reinsurance income amounted to €46 million (2017: net expense of €61 million).

Claims rate trend for direct non-life insurance business including claim settlement costs

Gross claims provisions in direct business and payments made against the original provisions:

€ million	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
At the end of the year	4,551	4,276	4,173	3,856	3,634	3,901	3,345	3,341	3,324	2,953	2,704
1 year later		4,142	4,103	3,767	3,523	3,847	3,336	3,359	3,135	2,901	2,623
2 years later			4,046	3,682	3,457	3,769	3,247	3,279	3,160	2,763	2,527
3 years later				3,647	3,389	3,731	3,220	3,254	3,139	2,756	2,533
4 years later					3,382	3,696	3,189	3,241	3,122	2,756	2,505
5 years later						3,691	3,198	3,250	3,139	2,768	2,513
6 years later							3,126	3,183	3,080	2,710	2,469
7 years later								3,172	3,065	2,685	2,466
8 years later									3,060	2,680	2,449
9 years later										2,680	2,447
10 years later											2,449
Settlements	**-**	**134**	**127**	**209**	**252**	**210**	**219**	**169**	**264**	**273**	**255**

Net claims provisions in direct business and payments made against the original provisions:

€ million	2018	2017	2016	2015	2014	2013	2012	2011	2010
At the end of the year	4,518	4,255	4,110	3,827	3,574	3,669	3,313	3,298	3,254
1 year later		4,118	4,050	3,736	3,460	3,613	3,300	3,317	3,056
2 years later			3,994	3,655	3,393	3,533	3,211	3,236	3,077
3 years later				3,624	3,331	3,490	3,180	3,208	3,057
4 years later					3,361	3,465	3,139	3,194	2,939
5 years later						3,670	3,166	3,191	3,049
6 years later							3,095	3,144	2,957
7 years later								3,134	2,981
8 years later									2,977
Settlements	**-**	**137**	**116**	**203**	**213**	**-1**	**218**	**164**	**277**

Claims rate trend for inward reinsurance business

Gross claims provisions in inward reinsurance business and payments made against the original provisions:

€ million	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Gross provisions for claims outstanding	**3,642**	**3,197**	**2,718**	**2,433**	**1,976**	**1,710**	**1,506**	**1,409**	**1,190**	**892**	**712**
Cumulative payments for the year concerned and prior years											
1 year later		852	569	622	464	481	385	463	437	282	232
2 years later			852	867	783	685	630	640	632	399	347
3 years later				1,022	919	897	764	345	739	468	410
4 years later					1,026	987	930	891	856	516	447
5 years later						1,051	996	1,029	922	588	475
6 years later							1,035	1,072	1,043	626	528
7 years later								1,103	1,067	652	555
8 years later									1,090	658	574
9 years later										684	585
10 years later											597
Gross provisions for claims outstanding and payments made against the original provision											
At the end of the year	3,642	3,197	2,718	2,433	1,976	1,710	1,506	1,409	1,190	892	712
1 year later		3,392	2,654	2,434	2,157	1,840	1,593	1,536	1,401	1,026	779
2 years later			2,561	2,271	2,004	1,859	1,569	1,472	1,343	872	765
3 years later				2,224	1,915	1,779	1,628	1,014	1,338	826	696
4 years later					1,887	1,720	1,580	1,528	1,360	837	680
5 years later						1,699	1,550	1,501	1,396	858	691
6 years later							1,536	1,486	1,379	870	709
7 years later								1,481	1,368	876	719
8 years later									1,354	873	725
9 years later										864	725
10 years later											723
Settlements	**-**	**-195**	**157**	**209**	**89**	**11**	**-30**	**-72**	**-164**	**28**	**-11**

Net claims provisions in inward reinsurance business and payments made against the original provisions:

€ million	2018	2017	2016	2015	2014	2013	2012	2011	2010
Net provisions for claims outstanding	**3,639**	**3,193**	**2,710**	**2,428**	**1,970**	**1,695**	**1,491**	**1,389**	**1,164**
Cumulative payments for the year concerned and prior years									
1 year later		851	567	622	464	473	383	461	432
2 years later			849	866	782	677	620	636	625
3 years later				1,020	918	888	754	333	729
4 years later					1,025	978	919	878	839
5 years later						1,042	985	1,016	904
6 years later							1,024	1,059	1,025
7 years later								1,090	1,049
8 years later									1,071
Net provisions for claims outstanding and payments made against the original provision									
At the end of the year	3,639	3,193	2,710	2,428	1,970	1,695	1,491	1,389	1,164
1 year later		3,388	2,648	2,429	2,152	1,827	1,576	1,519	1,377
2 years later			2,555	2,267	1,999	1,845	1,554	1,454	1,321
3 years later				2,219	1,911	1,766	1,612	997	1,314
4 years later					1,883	1,708	1,566	1,510	1,337
5 years later						1,687	1,536	1,484	1,372
6 years later							1,522	1,470	1,357
7 years later								1,464	1,346
8 years later									1,332
Settlements	**-**	**-195**	**155**	**209**	**87**	**8**	**-31**	**-75**	**-168**

>> 42 Insurance business operating expenses

€ million	2018	2017
Gross expenses	-2,593	-2,452
Reinsurers' share	21	16
Total	**-2,572**	**-2,436**

>> 43 Loss allowances

€ million	2018
Loss allowances for loans and advances to banks	**22**
Additions	-17
Reversals	36
Recoveries on loans and advances to banks previously impaired	3
Loss allowances for loans and advances to customers	**-144**
Additions	-1,811
Reversals	1,601
Directly recognized impairment losses	-39
Recoveries on loans and advances to customers previously impaired	87
Other	18
Loss allowances for investments	**17**
Additions	-43
Reversals	60
Other loss allowances for loans and advances	**84**
Additions to and reversals of provisions for loan commitments	27
Additions to and reversals of provisions for financial guarantee contracts	7
Additions to and reversals of other provisions for loans and advances	50
Total	**-21**

Gains and losses from credit-risk-related modifications and other gains and losses on POCI assets are reported under the 'Other' line item. Other gains and losses on POCI assets consist of the changes in the loss allowances for these assets within the reporting period.

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€ million	2017
Allowances for losses on loans and advances to banks	**23**
Additions	-6
Reversals	23
Recoveries on loans and advances previously impaired	6
Allowances for losses on loans and advances to customers	**-827**
Additions	-1,564
Reversals	663
Directly recognized impairment losses	-47
Recoveries on loans and advances previously impaired	121
Other allowances for losses on loans and advances	**18**
Change in provisions for loan commitments	7
Change in other provisions for loans and advances	-2
Change in liabilities from financial guarantee contracts	13
Total	**-786**

>> 44 Administrative expenses

€ million	2018	2017
Staff expenses	**-1,843**	**-1,808**
Wages and salaries	-1,535	-1,487
Social security contributions	-191	-186
Pension and other post-employment benefit expenses	-108	-124
Expenses for share-based payment transactions	-9	-11
General and administrative expenses	**-2,030**	**-1,964**
Expenses for temporary staff	-32	-23
Contributions and fees	-189	-161
of which: contributions to the resolution fund for CRR credit institutions	-80	-61
Consultancy	-580	-509
Office expenses	-217	-214
IT expenses	-465	-531 [1]
Property and occupancy costs	-176	-169
Information procurement	-78	-82
Public relations and marketing	-168	-164
Other general and administrative expenses	-119	-104
Expenses for administrative bodies	-6	-7
Depreciation and amortization	**-186**	**-187**
Property, plant and equipment, and investment property	-81	-77
Other assets	-105	-110
Total	**-4,059**	**-3,959**

1 Amount restated (see note 2).

>>45 Other net operating income

€ million	2018	2017
Income from the reversal of provisions and accruals	130	105
Impairment losses on goodwill	-128	-
Restructuring expenses	-103	-86
Gains and losses from impairment losses, reversals of impairment losses, and sale of acquired customer relationships and other intangible assets	-48	-9
Expenses for other taxes	-9	-16
Gains and losses on non-current assets and disposal groups classified as held for sale	2	126
Residual other net operating income	47	-82
Total	**-109**	**38**

Further details of impairment losses on goodwill can be found in note 89.

Restructuring expenses included additions of €86 million to provisions for termination benefits linked with restructuring (2017: €54 million).

Gains and losses on non-current assets and disposal groups classified as held for sale included realized gains of €8 million on disposals (2017: €126 million) and impairment losses of €6 million. No impairment losses were included in the 2017 figure.

Residual other net operating income included rental income from investment property of €13 million (2017: €14 million) and directly assignable expenses of €3 million (2017: €3 million). Residual other net operating income in 2017 included the losses from the deconsolidation of WGZ FINANCE plc, Dublin.

>>46 Income taxes

€ million	2018	2017
Current tax expense	-724	-445
Deferred tax income/expense	272	-267
Total	**-452**	**-712**

The total for current taxes includes expenses of €13 million (2017: €33 million) attributable to previous years. Deferred taxes include income of €336 million (2017: expenses of €311 million) related to temporary differences and their reversal. Dividends on additional equity components were distributed from retained earnings. Current taxes of €11 million were attributable to these transactions.

Current taxes in relation to the German limited companies in the group are calculated using an effective corporation tax rate of 15.825 percent based on a corporation tax rate of 15.0 percent plus the solidarity surcharge. The tax rate applied in 2018 was unchanged from the rate used in 2017. The effective rate of trade tax for DZ BANK and subsidiaries that are members of the tax group is 15.365 percent (2017: 15.330 percent).

Deferred taxes must be calculated using tax rates expected to apply when the tax asset is recovered or liability settled. The tax rates used are therefore those that are valid or have been announced for the periods in question as at the balance sheet date.

The following table shows a reconciliation from expected income taxes to recognized income taxes based on application of the current tax law in Germany:

€ million	2018	2017
Profit before taxes	**1,370**	1,810
Group income tax rate	31.190%	31.155%
Expected income taxes	**-427**	-564
Income tax effects	**-25**	-148
Impact of tax-exempt income and non-deductible expenses	-72	37
Adjustments resulting from other types of income tax, other trade tax multipliers, and changes in tax rates	28	10
Tax rate differences on income subject to taxation in other countries	-20	-155
Current and deferred taxes relating to prior years	32	-4
Change in impairment losses on deferred tax assets	3	-92
Other effects	4	56
Recognized income taxes	**-452**	-712

>> 47 Items reclassified to the income statement

The following amounts were reclassified from other comprehensive income/loss to the income statement in the reporting period:

€ million	2018
Gains and losses on debt instruments measured at fair value through other comprehensive income	**-654**
Gains (+)/losses (-) arising during the reporting period	-489
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-165
Gains and losses on cash flow hedges	**-6**
Gains (+)/losses (-) arising during the reporting period	-3
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-3
Exchange differences on currency translation of foreign operations	**24**
Gains (+)/losses (-) arising during the reporting period	32
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-8
Gains and losses on hedges of net investments in foreign operations	**-6**
Gains (+)/losses (-) arising during the reporting period	-13
Gains (-)/losses (+) reclassified to the income statement during the reporting period	7
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	**-**
Gains (+)/losses (-) arising during the reporting period	-
Gains (-)/losses (+) reclassified to the income statement	-

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€ million	2017
Gains and losses on available-for-sale financial assets	**28**
Gains (+)/losses (-) arising during the reporting period	383
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-355
Gains and losses on cash flow hedges	**20**
Gains (+)/losses (-) arising during the reporting period	18
Gains (-)/losses (+) reclassified to the income statement during the reporting period	2
Exchange differences on currency translation of foreign operations	**-43**
Gains (+)/losses (-) arising during the reporting period	-44
Gains (-)/losses (+) reclassified to the income statement during the reporting period	1
Gains and losses on hedges of net investments in foreign operations	**23**
Gains (+)/losses (-) arising during the reporting period	28
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-5
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	**-12**
Gains (+)/losses (-) arising during the reporting period	-16
Gains (-)/losses (+) reclassified to the income statement during the reporting period	4

>> 48 Income taxes relating to components of other comprehensive income

The table below shows the income taxes on the various components of other comprehensive income:

	2018		
€ million	Amount before taxes	Income taxes	Amount after taxes
Items that may be reclassified to the income statement	**-642**	**197**	**-445**
Gains and losses on debt instruments measured at fair value through other comprehensive income	-654	190	-464
Gains and losses on cash flow hedges	-6	-	-6
Exchange differences on currency translation of foreign operations	24	-1	23
Gains and losses on hedges of net investments in foreign operations	-6	8	2
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	-	-
Items that will not be reclassified to the income statement	**-57**	**19**	**-38**
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-8	1	-7
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	35	-11	24
Gains and losses arising from remeasurement of defined benefit plans	-84	29	-55
Total	**-699**	**216**	**-483**

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€ million	2017 Amount before taxes	Income taxes	Amount after taxes
Items that may be reclassified to the income statement	**16**	**-15**	**1**
Gains and losses on available-for-sale financial assets	28	-	28
Gains and losses on cash flow hedges	20	-4	16
Exchange differences on currency translation of foreign operations	-43	3	-40
Gains and losses on hedges of net investments in foreign operations	23	-14	9
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-12	-	-12
Items that will not be reclassified to the income statement	**29**	**-7**	**22**
Gains and losses arising from remeasurement of defined benefit plans	29	-7	22
Total	**45**	**-22**	**23**

D Balance sheet disclosures

>> 49 Cash and cash equivalents

€ million	Dec. 31, 2018	Dec. 31, 2017
Cash on hand	386	273
Balances with central banks	51,459	43,637[1]
Total	**51,845**	**43,910**

1 Amount restated (see note 2).

The average target minimum reserve for 2018 was €2,103 million (2017: €1,787 million).

>> 50 Loans and advances to banks

	Repayable on demand		Other loans and advances		Total	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Domestic banks	**4,392**	**6,385**	**80,599**	**77,370**	**84,991**	**83,755**
Affiliated banks	1,443	2,994	72,625	69,257	74,068	72,251
Other banks	2,949	3,391[1]	7,974	8,113	10,923	11,504
Foreign banks	**4,107**	**4,187[1]**	**2,529**	**1,472**	**6,636**	**5,659**
Total	**8,499**	**10,572**	**83,128**	**78,842**	**91,627**	**89,414**

1 Amount restated (see note 2).

The following table shows the breakdown of loans and advances to banks by type of business:

€ million	Dec. 31, 2018	Dec. 31, 2017
Mortgage loans	110	150
Finance leases	-	22
Registered securities	9,843	10,022
Pass-through loans	50,716	48,691
Other bank loans	15,854	16,069
Money market placements	12,425	9,042[1]
Current account debit balances	2,384	1,706[1]
Other loans and advances	295	3,712
Total	**91,627**	**89,414**

1 Amount restated (see note 2).

>> 51 Loans and advances to customers

€ million	Dec. 31, 2018	Dec. 31, 2017
Loans and advances to domestic customers	145,932	140,018
Loans and advances to foreign customers	28,506	34,358
Total	**174,438**	**174,376**

The following table shows the breakdown of loans and advances to customers by type of business:

€ million	Dec. 31, 2018	Dec. 31, 2017
Mortgage loans	46,826	44,853
Ship mortgage loans	788	1,127
Home savings loans advanced by building society	45,454	41,005
Finance leases	2,020	2,918
Registered securities	8,630	5,296
Pass-through loans	5,844	7,194
Other bank loans	42,302	44,692
Money market placements	1,887	817
Current account debit balances	5,722	4,621
Other loans and advances	14,965	21,853
Total	**174,438**	**174,376**

>> 52 Hedging instruments (positive fair values)

€ million	Dec. 31, 2018	Dec. 31, 2017
Derivatives used as fair value hedges	883	1,086
Derivatives used as cash flow hedges	-	8
Derivatives used for hedges of net investments in foreign operations	-	2
Total	**883**	**1,096**

>> 53 Financial assets held for trading

€ million	Dec. 31, 2018	Dec. 31, 2017
DERIVATIVES (POSITIVE FAIR VALUES)	**15,647**	**17,100**
Interest-linked contracts	13,773	14,747
Currency-linked contracts	1,194	813
Share-/index-linked contracts	403	257
Other contracts	52	916
Credit derivatives	225	367
BONDS AND OTHER FIXED-INCOME SECURITIES	**10,939**	**9,094**
Money market instruments	187	244
Bonds	10,752	8,850
SHARES AND OTHER VARIABLE-YIELD SECURITIES	**989**	**1,408**
Shares	959	1,397
Investment fund units	29	6
Other variable-yield securities	1	5
RECEIVABLES	**10,367**	**11,107**
of which: from affiliated banks	485	666
from other banks	7,927	7,969
Unplaced receivables from syndication business	**-**	**7**
from customers	-	7[1]
Money market placements	**9,619**	**10,258**
with banks	7,975	8,128
with customers	1,644	2,130
Promissory notes and registered bonds	**748**	**842**
from banks	437	507
from customers	311	335[1]
Total	**37,942**	**38,709**

1 Amount restated: in the 2017 consolidated financial statements, the unplaced receivables from syndication business were reported together with promissory notes and registered bonds under promissory notes, registered bonds, and other loans and advances.

>> 54 Investments

€ million	Dec. 31, 2018	Dec. 31, 2017
Bonds and other fixed-income securities	**45,614**	**54,504**
Money market instruments	466	410
Bonds	45,148	54,094
Shares and other variable-yield securities	**1,577**	**1,808**
Shares and other shareholdings	526	380
Investment fund units	1,041	1,422
Other variable-yield securities	10	6
Investments in subsidiaries	**300**	**311**
Investments in joint ventures	**482**	**545**
Investments in associates	**289**	**318**
Total	**48,262**	**57,486**

The carrying amount of investments in joint ventures accounted for using the equity method totaled €482 million (December 31, 2017: €542 million). €288 million of the investments in associates has been accounted for using the equity method (December 31, 2017: €315 million).

>> 55 Investments held by insurance companies

€ million	Dec. 31, 2018	Dec. 31, 2017
Investment property	2,842	2,539
Investments in subsidiaries	758	698
Investments in joint ventures	15	15
Investments in associates	3	2
Mortgage loans	9,307	9,142
Promissory notes and loans	7,386	7,764
Registered bonds	9,567	9,114
Other loans	654	871
Variable-yield securities	9,186	9,276
Fixed-income securities	48,954	44,907
Derivatives (positive fair values)	168	299
Loss allowances	-4	
Deposits with ceding insurers and other investments	294	240
Assets related to unit-linked contracts	11,710	11,549
Total	**100,840**	**96,416**

The fair value of investment property was €3,799 million as at the balance sheet date (December 31, 2017: €3,290 million). Government grants of €18 million were deducted from the carrying amount of investment property (December 31, 2017: €18 million). The grants are non-interest-bearing, low-interest or forgivable loans.

Some investment property has been pledged as collateral and is subject to restrictions on disposal, the total furnished collateral value of the property being €762 million (December 31, 2017: €790 million). The group also has capital expenditure commitments amounting to €100 million (December 31, 2017: €21 million). A total of €22 million was spent on the repair and maintenance of investment property in 2018 (2017: €24 million). Vacant property resulted in repair and maintenance expenses of €1 million (2017: €1 million).

In 2017, the loss allowances were not reported as a separate line item but were deducted from the individual items. In the reporting period, the loss allowances rose from €3 million to €4 million as a result of additions of €1 million in stage 3.

>> 56 Property, plant and equipment, and investment property

€ million	Dec. 31, 2018	Dec. 31, 2017
Land and buildings	911	928
Office furniture and equipment	182	178
Assets subject to operating leases	72	138
Investment property	258	254
Total	**1,423**	**1,498**

The fair value of investment property was €286 million as at the balance sheet date (December 31, 2017: €365 million).

Payments in advance are allocated to the relevant item of property, plant and equipment.

>> 57 Income tax assets and liabilities

€ million	Dec. 31, 2018	Dec. 31, 2017
Income tax assets	**1,457**	**1,127**
Current income tax assets	401	494
Deferred tax assets	1,056	633
Income tax liabilities	**920**	**848**
Current income tax liabilities	384	290
Deferred tax liabilities	536	558

In addition to deferred tax assets recognized for tax loss carryforwards, deferred tax assets and liabilities are also recognized for temporary differences in respect of the items shown below:

€ million	Dec. 31, 2018 Deferred tax assets	Deferred tax liabilities
Tax loss carryforwards	39	
Loans and advances to banks and customers	129	330
Financial assets and liabilities held for trading, hedging instruments (positive and negative fair values)	634	197
Investments	21	252
Loss allowances	145	2
Investments held by insurance companies	123	641
Property, plant and equipment, and investment property	32	46
Deposits from banks and customers	277	239
Debt certificates issued including bonds	152	4
Provisions for employee benefits and for share-based payment transactions	621	36
Other provisions	168	14
Insurance liabilities	78	195
Other balance sheet items	159	102
Total (gross)	**2,578**	**2,058**
Netting of deferred tax assets and deferred tax liabilities	-1,522	-1,522
Total (net)	**1,056**	**536**

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€ million	Dec. 31, 2017 Deferred tax assets	Deferred tax liabilities
Tax loss carryforwards	103	
Loans and advances to banks and customers (net)	51	209
Financial assets and liabilities held for trading, hedging instruments (positive and negative fair values)	525	20
Investments	26	630
Investments held by insurance companies	53	676
Property, plant and equipment, and investment property	35	46
Deposits from banks and customers	581	198
Debt certificates issued including bonds	46	6
Provisions for employee benefits and for share-based payment transactions	506	41
Other provisions	246	-1
Insurance liabilities	75	399
Other balance sheet items	147	95
Total (gross)	**2,394**	**2,319**
Netting of deferred tax assets and deferred tax liabilities	-1,761	-1,761
Total	**633**	**558**

Deferred tax assets for temporary differences and tax loss carryforwards are only recognized if it is sufficiently probable that the asset can be recovered in the future. No deferred tax assets have been recognized for corporation tax loss carryforwards amounting to €369 million (December 31, 2017: €334 million), which can be carried forward indefinitely, or for trade tax loss carryforwards amounting to €296 million (December 31, 2017: €271 million). There remained foreign loss carryforwards of €879 million (December 31, 2017: €623 million) for which no deferred tax assets are recognized. Of this total, €528 million will expire by 2031 and €351 million can be used indefinitely. As regards companies (or permanent establishments of companies) in the DZ BANK Group that have suffered tax losses in 2018 or 2017 in their tax jurisdiction, it will be possible to utilize deferred tax assets amounting to €27 million in the future if a corresponding level of taxable income is available. It is assumed that this will in fact be the case based on information available from planning of taxable income. There were no equivalent deferred tax assets to disclose as at December 31, 2017.

Overall, there was a net deferred tax asset recognized through other comprehensive income of €92 million (December 31, 2017: net deferred tax liability of €281 million).

Deferred tax assets of €394 million (December 31, 2017: €101 million) and deferred tax liabilities of €181 million (December 31, 2017: €60 million) are expected to be realized only after a period of 12 months.

As at December 31, 2018, no deferred tax liabilities were recognized for temporary differences of €186 million (December 31, 2017: €172 million) relating to long-term equity investments in subsidiaries.

>> 58 Other assets

€ million	Dec. 31, 2018	Dec. 31, 2017
Other assets held by insurance companies	3,372	3,090
Goodwill	41	169
Other intangible assets	436	466
of which: software	394	357
acquired customer relationships	4	62
Other loans and advances	338	251
Residual other assets	468	570
Total	**4,655**	**4,546**

Other intangible assets include internally generated intangible assets amounting to €22 million (December 31, 2017: €24 million).

The breakdown of other assets held by insurance companies is as follows:

€ million	Dec. 31, 2018	Dec. 31, 2017
Intangible assets	**140**	**151**
Reinsurers' share of insurance liabilities	**139**	**168**
Provision for unearned premiums	6	11
Benefit reserve	36	60
Provision for claims outstanding	97	97
Receivables	**1,650**	**679**
Receivables arising out of direct insurance operations	450	305
Receivables arising out of reinsurance operations	271	294
Other receivables	929	80
Credit balances with banks, checks and cash on hand	**409**	**110**
Residual other assets	**1,036**	**1,982**
Property, plant and equipment	379	387
Prepaid expenses	34	31
Remaining assets held by insurance companies	623	1,564
Loss allowances	**-2**	
Total	**3,372**	**3,090**

In 2017, the loss allowances were not reported as a separate line item but were deducted from the individual items.

The intangible assets in the other assets held by insurance companies include internally generated intangible assets amounting to €7 million (December 31, 2017: €13 million).

The following tables show the reinsurers’ share of the changes in insurance liabilities:

REINSURERS’ SHARE OF THE CHANGES IN THE PROVISION FOR UNEARNED PREMIUMS

€ million	2018	2017
Balance as at Jan. 1	11	6
Additions	14	18
Utilizations/reversals	-19	-13
Balance as at Dec. 31	**6**	**11**

REINSURERS’ SHARE OF THE CHANGES IN THE BENEFIT RESERVE

€ million	2018	2017
Balance as at Jan. 1	60	63
Additions	5	2
Utilizations/reversals	-29	-5
Balance as at Dec. 31	**36**	**60**

REINSURERS’ SHARE OF THE CHANGES IN THE PROVISION FOR CLAIMS OUTSTANDING

€ million	2018	2017
Balance as at Jan. 1	97	155
Claims expenses	32	17
Less payments	-32	-75
Balance as at Dec. 31	**97**	**97**

The breakdown of maturities for the reinsurers’ share of insurance liabilities is shown in the following tables:

AS AT DECEMBER 31, 2018

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	4	1	1	-
Benefit reserve	1	2	7	26
Provision for claims outstanding	38	24	33	2
Total	**43**	**27**	**41**	**28**

AS AT DECEMBER 31, 2017

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	10	-	1	-
Benefit reserve	2	8	23	27
Provision for claims outstanding	28	21	48	-
Total	**40**	**29**	**72**	**27**

>> 59 Loss allowances

Loss allowances for loans and advances to banks and for loans and advances to customers also comprise the loss allowances recognized for finance lease receivables.

The changes in loss allowances recognized under assets were as follows:

€ million	Loss allowances for loans and advances to banks			Loss allowances for loans and advances to customers			
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	POCI assets
Balance as at Jan. 1, 2018	9	-	22	217	185	2,348	11
Additions	11	2	4	258	387	1,148	18
Utilizations	-	-	-	-	-1	-753	-
Reversals	-12	-2	-22	-406	-196	-972	-25
Other changes	-	-	-	149	-211	75	-1
Balance as at Dec. 31, 2018	**8**	**-**	**4**	**218**	**164**	**1,846**	**3**

€ million	Loss allowances for investments			Total
	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2018	10	36	24	2,862
Additions	25	13	-	1,866
Utilizations	-	-	-1	-755
Reversals	-28	-11	-7	-1,681
Other changes	-2	2	1	13
Balance as at Dec. 31, 2018	**5**	**40**	**17**	**2,305**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	Allowances for losses on loans and advances to banks		Allowances for losses on loans and advances to customers		Total
	Specific loan loss allowances	Portfolio loan loss allowances	Specific loan loss allowances	Portfolio loan loss allowances	
Balance as at Jan. 1, 2017	7	29	1,829	529	2,394
Additions	-	6	1,363	201	1,570
Utilizations	-	-	-354	-	-354
Reversals	-5	-18	-437	-226	-686
Interest income	-	-	-40	-	-40
Other changes	-	-	-89	-1	-90
Balance as at Dec. 31, 2017	**2**	**17**	**2,272**	**503**	**2,794**

The interest income arose from unwinding the discount on impaired loans and advances as specified in IAS 39.AG93.

>>60 Changes in non-current assets

The following table shows the changes in investment property included in the investments held by insurance companies, the changes in property, plant and equipment, and investment property, and the changes in intangible assets included in other assets:

	Investments held by insurance companies
€ million	Investment property
Carrying amounts as at Jan. 1, 2017	2,470
Cost as at Jan. 1, 2017	2,885
Additions	135
Reclassifications	-1
Reclassifications to non-current assets and disposal groups classified as held for sale	-11
Disposals	-60
Changes attributable to currency translation	-
Changes in scope of consolidation	38
Cost as at Dec. 31, 2017	**2,986**
Reversals of impairment losses as at Jan. 1, 2017	17
Additions	1
Reclassifications to non-current assets and disposal groups classified as held for sale	-1
Disposals	-1
Reversals of impairment losses as at Dec. 31, 2017	**16**
Depreciation/amortization and impairment losses as at Jan. 1, 2017	-432
Depreciation/amortization expense for the year	-72
Impairment losses for the year	-1
Reclassifications	-
Reclassifications to non-current assets and disposal groups classified as held for sale	6
Disposals	36
Changes attributable to currency translation	-
Changes in scope of consolidation	-
Depreciation/amortization and impairment losses as at Dec. 31, 2017	**-463**
Carrying amounts as at Dec. 31, 2017	2,539
Cost as at Jan. 1, 2018	2,986
Additions	381
Reclassifications	-
Reclassifications to non-current assets and disposal groups classified as held for sale	-32
Disposals	-5
Changes attributable to currency translation	-
Changes in scope of consolidation	-
Cost as at Dec. 31, 2018	**3,330**
Reversals of impairment losses as at Jan. 1, 2018	16
Additions	9
Reclassifications to non-current assets and disposal groups classified as held for sale	-
Disposals	-
Reversals of impairment losses as at Dec. 31, 2018	**25**
Depreciation/amortization and impairment losses as at Jan. 1, 2018	-463
Depreciation/amortization expense for the year	-60
Impairment losses for the year	-2
Reclassifications	-
Reclassifications to non-current assets and disposal groups classified as held for sale	11
Disposals	1
Changes attributable to currency translation	-
Changes in scope of consolidation	-
Depreciation/amortization and impairment losses as at Dec. 31, 2018	**-513**
Carrying amounts as at Dec. 31, 2018	**2,842**

	Property, plant and equipment, and investment property				Other assets	
	Land and buildings	Office furniture and equipment	Assets subject to operating leases	Investment property	Goodwill	Other intangible assets
	953	158	388	253	169	462
	1,293	500	527	270	272	1,436
	3	65	68	11	-	149
	-1	8	-49	-7	-	-
	-	-	-	-	-	-
	-4	-35	-229	-	-	-23
	-	-1	-39	-	-	-1
	-	-	-	-	-	2
	1,291	**537**	**278**	**274**	**272**	**1,563**
	13	-	41	5	-	-
	-	-	18	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	13	**-**	**59**	**5**	**-**	**-**
	-353	-342	-180	-22	-103	-974
	-25	-48	-22	-4	-	-131
	-	-	-83	-	-	-9
	-1	-	-	1	-	-
	-	-	-	-	-	-
	3	30	72	-	-	18
	-	1	14	-	-	1
	-	-	-	-	-	-2
	-376	**-359**	**-199**	**-25**	**-103**	**-1,097**
	928	178	138	254	169	466
	1,291	537	278	274	272	1,563
	7	61	6	9	-	149
	-	-	-	-	-	1
	-	-4	-	-	-	-10
	-4	-44	-121	-	-	-29
	-	-	10	-	-	-1
	-	-	-4	-	-	-
	1,294	**550**	**169**	**283**	**272**	**1,673**
	13	-	59	5	-	-
	-	-	5	-	-	-
	-	-	-	-	-	5
	-	-	-	-	-	-
	13	**-**	**64**	**5**	**-**	**5**
	-376	-359	-199	-25	-103	-1,097
	-24	-52	-16	-5	-	-123
	-	-	-5	-	-128	-45
	-	-	-	-	-	-
	-	2	-	-	-	2
	4	41	61	-	-	21
	-	-	-6	-	-	-
	-	-	4	-	-	-
	-396	**-368**	**-161**	**-30**	**-231**	**-1,242**
	911	**182**	**72**	**258**	**41**	**436**

In 2018, the useful life of the assets ranged from 7 to 62 years for buildings (2017: 8 to 50 years), from 2.5 to 25 years for office furniture and equipment (2017: 3 to 25 years), and – as in 2017 – from 6 months to 25 years for assets subject to an operating lease; the useful life for investment property was 1 to 68 years (2017: 4 to 75 years). Software included in other intangible assets was amortized over a useful life of 1 to 10 years (2017: 1 to 11 years) while the useful life of the customer relationships acquired was 10 to 12 years (as in 2017). Depreciation and amortization are recognized on a straight-line basis over the useful life of the asset.

Payments in advance are allocated to the relevant item of property, plant and equipment.

In 2018, no borrowing costs related to investment property held by insurance companies were capitalized (2017: small volume capitalized). The capitalization rate used for borrowing costs was 0.0 percent for investment property held by insurance companies (2017: 3.06 percent).

Disclosures regarding the changes in goodwill are included in note 89.

Other intangible assets include acquired customer relationships amounting to €4 million (December 31, 2017: €62 million). The associated amortization expense came to €17 million (2017: €18 million).

>>61 Non-current assets and disposal groups classified as held for sale

The non-current assets and disposal groups classified as held for sale include individual non-current assets together with assets and liabilities from disposal groups not qualifying as discontinued operations, as described below. Gains and losses arising from the classification of assets and disposal groups as held for sale are reported under other net operating income.

In the DVB subgroup, it is intended to sell credit portfolios with a value of €6,191 million in the aviation finance and land transport finance businesses as well as one subsidiary; these disposal groups do not qualify as discontinued operations.

To this end, DVB signed a contract on December 21, 2018 to sell and transfer the land transport finance business to Landesbank Hessen-Thüringen, Frankfurt-am-Main. The deal was published in an ad hoc announcement on the same day. Under this contract of sale, the employees and the entire customer credit portfolio in the land transport finance business are to be transferred. The sale is expected to be completed in the first half of 2019. In addition, it is intended to enter into another contract of sale in the first quarter of 2019 to transfer the credit portfolios in the aviation finance business, including the aviation investment management and aviation asset management operating activities. The sale is expected to be completed by the end of 2019. The credit portfolios continued to be measured in accordance with IFRS 9 despite being classified as held for sale.

DVB also expects to enter into a contract of sale in the first quarter of 2019 to dispose of its wholly owned, fully consolidated subsidiary LogPay Financial Services GmbH, Eschborn. It is anticipated that the contract of sale will be signed and the subsidiary derecognized at the same time.

ASSETS

€ million	Aviation finance	Land transport finance	LogPay	Total
Loans and advances to banks	-	-	27	27
Loans and advances to customers	4,995	1,181	126	6,302
Financial assets held for trading	3	1	-	4
Investments	21	-	2	23
Other assets	-	-	5	5
Loss allowances	-10	-	-1	-11
Total	**5,009**	**1,182**	**159**	**6,350**

LIABILITIES

€ million	Aviation finance	Land transport finance	LogPay	Total
Deposits from customers	-	-	101	101
Financial liabilities held for trading	5	1	-	6
Provisions	-	2	2	4
Other liabilities	-	-	21	21
Total	**5**	**3**	**124**	**132**

Assets of €723 million and liabilities of €138 million at VR LEASING similarly constitute disposal groups that do not qualify as discontinued operations. These disposal groups include BFL Leasing GmbH, Eschborn, which no longer forms part of the core business of VR LEASING, and 94.0 percent of VR-IMMOBILIEN-LEASING GmbH, Eschborn, both of which are to be sold as part of VR LEASING's transformation into a digital provider of finance for the self-employed and small businesses. Contracts of sale were signed for both companies in the year under review. It is planned to transfer title to the buyers by June 30, 2019 at the latest. The requirement for the recognition of an impairment loss of €6 million that arose as a consequence of measuring these entities as assets held for sale has been included in assets held for sale accordingly.

Other disposal groups that do not qualify as discontinued operations and that are less significant include another fully consolidated subsidiary and units in various investment funds.

The individual non-current assets classified as held for sale comprise an associate, long-term equity investments, and items of property, plant and equipment. Real estate and one long-term equity investment that had been reported as assets held for sale as at December 31, 2017 were sold in 2018.

The liabilities included in disposal groups classified as held for sale consisted of such liabilities forming part of disposal groups that did not qualify as discontinued operations. The liabilities in question were exclusively the liabilities of the fully consolidated subsidiaries.

>> 62 Deposits from banks

€ million	Repayable on demand		With agreed maturity or notice period		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Domestic banks	**44,142**	42,325	**84,606**	82,352	**128,748**	124,677
Affiliated banks	38,365	37,716	22,193	21,523	60,558	59,239
Other banks	5,777	4,609	62,413	60,829	68,190	65,438
Foreign banks	**3,968**	2,853	**9,770**	8,592	**13,738**	11,445
Total	**48,110**	45,178	**94,376**	90,944	**142,486**	136,122

The following table shows the breakdown of deposits from banks by type of business:

€ million	Dec. 31, 2018	Dec. 31, 2017
Home savings deposits	1,652	1,633
Money market deposits	24,991	21,599
Other deposits	115,843	112,890
Total	**142,486**	136,122

>> 63 Deposits from customers

€ million	Repayable on demand		With agreed maturity or notice period		Total	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Domestic customers	19,907	16,965	97,084	95,017	116,991	111,982
Foreign customers	10,555	8,913	5,002	5,424	15,557	14,337
Total	**30,462**	25,878	**102,086**	100,441	**132,548**	126,319

The following table shows the breakdown of deposits from customers by type of business:

€ million	Dec. 31, 2018	Dec. 31, 2017
Home savings deposits	59,996	56,642
Money market deposits	20,694	10,805
Other deposits	51,858	58,872
Total	**132,548**	126,319

>>64 Debt certificates issued including bonds

€ million	Dec. 31, 2018	Dec. 31, 2017
Bonds issued	**50,958**	**50,609**
Mortgage Pfandbriefe	19,318	17,798
Public-sector Pfandbriefe	2,452	2,520
Other bonds	29,188	30,291
Other debt certificates issued	**12,951**	**16,718**
Total	**63,909**	**67,327**

All other debt certificates issued are commercial paper.

>>65 Hedging instruments (negative fair values)

€ million	Dec. 31, 2018	Dec. 31, 2017
Derivatives used as fair value hedges	2,516	2,959
Derivatives used as cash flow hedges	-	3
Total	**2,516**	**2,962**

>> 66 Financial liabilities held for trading

€ million	Dec. 31, 2018	Dec. 31, 2017
DERIVATIVES (NEGATIVE FAIR VALUES)	**16,079**	**16,813**
Interest-linked contracts	12,099	13,848
Currency-linked contracts	1,975	871
Share-/index-linked contracts	1,853	742
Other contracts	78	1,275
Credit derivatives	74	77
SHORT POSITIONS	**1,102**	**617**
BONDS ISSUED	**20,250**	**18,734**
DEPOSITS	**7,548**	**8,116**
of which: from affiliated banks	2,582	1,820
from other banks	4,346	5,529
Money market deposits	**7,292**	**7,980**
from banks	6,816	7,233
from customers	476	747
Promissory notes and registered bonds issued	**256**	**136**
to banks	112	116
to customers	144	20
Total	**44,979**	**44,280**

Bonds issued mainly comprise share certificates and index-linked certificates.

>> 67 Provisions

€ million	Dec. 31, 2018	Dec. 31, 2017
Provisions for employee benefits	**1,635**	**1,673**
Provisions for defined benefit plans	1,161	1,266
Provisions for other long-term employee benefits	155	148
of which: for semi-retirement schemes	26	21
Provisions for termination benefits	282	235
of which: for early retirement schemes	11	11
for restructuring	242	195
Provisions for short-term employee benefits	37	24
Provisions for share-based payment transactions	**42**	**44**
Other provisions	**1,703**	**1,655**
Provisions for onerous contracts	13	12
Provisions for restructuring	25	29
Provisions for loan commitments	49	128
Provisions for financial guarantee contracts	113	
Other provisions for loans and advances	39	87
Provisions relating to building society operations	1,072	983
Residual provisions	392	416
Total	**3,380**	**3,372**

Provisions for defined benefit plans

The provisions for defined benefit plans predominantly result from pension plans that employees can no longer join (closed plans). There are also defined benefit pension plans for members of boards of managing directors. New employees in Germany are almost always only offered defined contribution pension plans, for which it is not generally necessary to recognize a provision. The picture outside Germany is more varied because there are both defined contribution and defined benefit plans that are open to new employees. However, the proportion of the group's total obligations accounted for by obligations outside Germany is not material. The expense for defined contribution pension plans came to €22 million in 2018 (2017: €20 million).

The present value of the defined benefit obligations is broken down by risk category as follows:

	Germany		Other countries		Total	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Final-salary-dependent plans	2,459	2,457	102	108	2,561	2,565
Defined benefit contributory plans	471	438	219	216	690	654
Accessorial plans	64	61	2	2	66	63
Total	**2,994**	**2,956**	**323**	**326**	**3,317**	**3,282**

A significant risk factor for all plans is the level of market interest rates for investment-grade fixed-income corporate bonds because the discount rate determined from this data affects both the amount of the obligations and the measurement of the plan assets.

Final-salary-dependent plans are pension obligations to employees, the amount of which depends on the employee's final salary before the insured event occurs and that, for the most part, can be assumed to constitute a life-long payment obligation. In Germany, section 16 (1) of the Occupational Pensions Act (BetrAVG) requires the amount of the pension to be adjusted every 3 years to reflect the change in consumer prices or net wages. The main risk factors for final-salary-dependent pension plans are longevity, changes in salary, inflation risk, and the discount rate.

The majority of defined benefit contributory plans comprise obligations to pay fixed capital amounts or amounts at fixed interest rates. An annuitization option exists for around half of the obligations. As a result, there may be lifelong payment obligations as well as lump-sum payments and installments. For most obligations, the contributions are linked to remuneration. Most of these plans are closed.

Accessorial plans are when the employer commits to a benefit that essentially corresponds to the benefit that is provided when an insured event occurs if the contributions are invested in a financial product of a third-party pension provider or insurer. The amount of the pension benefits therefore depends on the pension plan of the third-party pension provider, which is directly exposed to the risk factors longevity, changes in salary, and market interest rate risk. Accessorial plans are almost risk free for the employer.

The pension plans agreed in Germany are not subject to minimum funding requirements. Minimum funding is required for some pension plans outside Germany owing to local regulations.

The changes in the present value of the defined benefit obligations were as follows:

€ million	**2018**	2017
Present value of defined benefit obligations as at Jan. 1	3,282	3,297
Current service cost	59	64
Interest expense	57	57
Employee contributions	7	6
Pension benefits paid including plan settlements	-116	-108
of which: relating to plan settlements	-1	-
Unrecognized past service cost	-	-2
Actuarial gains (-)/losses (+)	8	-18
of which: due to changes in demographic assumptions	23	-
due to changes in financial assumptions	-	5
experience-based	-15	-23
Changes attributable to currency translation	1	-14
Changes in scope of consolidation	19	-
Present value of defined benefit obligations as at Dec. 31	**3,317**	**3,282**

Virtually all of the actuarial losses arising from the change in demographic assumptions were attributable to the adjustment during 2018 of the Heubeck mortality tables used for estimating average life expectancy.

The following actuarial assumptions were used in the measurement of the defined benefit obligations:

%	Dec. 31, 2018	Dec. 31, 2017
Discount rate	1.75	1.75
Weighted salary increases	1.95	1.96
Weighted pension increases	1.78	1.78

Sensitivity analysis

The following table shows the sensitivity of the present value of the defined benefit obligations to changes in the actuarial parameters. The effects shown are based on an isolated change to one parameter, with the other parameters remaining constant. Correlation effects between individual parameters are not considered.

	Dec. 31, 2018		Dec. 31, 2017	
	€ million	%	€ million	%
Change in the present value of defined benefit obligations as at balance sheet date if				
the discount rate were 100 basis points higher	-421	-12.69	-422	-12.86
the discount rate were 100 basis points lower	529	15.95	544	16.58
the future salary increase were 50 basis points higher	36	1.09	40	1.22
the future salary increase were 50 basis points lower	-35	-1.06	-38	-1.16
the future pension increase were 25 basis points higher	75	2.26	76	2.32
the future pension increase were 25 basis points lower	-72	-2.17	-73	-2.22

The duration of the defined benefit obligations as at December 31, 2018 was 14.78 years (December 31, 2017: 15.23 years).

Plan assets

Defined benefit obligations are offset by plan assets. €1,677 million of the plan assets (December 31, 2017: €1,546 million) are attributable to contractual trust arrangements (CTAs) at DZ BANK and BSH, and are managed as trust assets by DZ BANK Pension Trust e.V., Frankfurt am Main. The relevant CTA investment committee defines the investment policy and strategy for the asset management company. Plan assets relating to obligations in the United States and United Kingdom are also managed by independent trusts. In Luxembourg, the assets were transferred to a pension fund and, in Switzerland, to a foundation. Trustees/administrators are responsible for the administration and management of the pension plans and for compliance with regulatory requirements.

The changes in the funding status of the defined benefit obligations were as follows:

€ million	Dec. 31, 2018	Dec. 31, 2017
Present value of defined benefit obligations funded by plan assets	2,732	2,722
Present value of defined benefit obligations not funded by plan assets	585	560
Present value of defined benefit obligations	**3,317**	**3,282**
less fair value of plan assets	-2,158	-2,016
Recognized surplus	2	-
Provisions for defined benefit plans	**1,161**	**1,266**
Reimbursement rights recognized as assets	3	3

The following table shows the changes in plan assets:

€ million	2018	2017
Fair value of plan assets as at Jan. 1	2,016	1,239
Interest income	37	24
Return on/expenses from plan assets (excluding interest income)	-65	14
Contributions to plan assets	231	814
of which: contributions by employer	225	808
employee contributions	6	6
Pension benefits paid	-69	-65
Changes attributable to currency translation	5	-10
Changes in scope of consolidation	3	-
Fair value of plan assets as at Dec. 31	**2,158**	**2,016**

Contributions to plan assets of €19 million are expected for 2019 (2018: €217 million). Of this total, €1 million will be allocated to the CTA at BSH (2018: €201 million).

67 percent of the plan assets (2017: 65 percent) are invested in fixed-income assets, thereby allowing for the defined benefit obligations' sensitivity to interest rates. The defined benefit obligations and the plan assets are largely in the euro, US dollar, and pound sterling currency areas. If the defined benefit obligations and the plan assets are in different currencies, derivative hedges are entered into in order to hedge the currency risk. The minimum quality of the fixed-income investments – in the form of Pfandbriefe, government bonds, and corporate bonds – is investment grade (AAA to BBB). The bulk of the investments (particularly Pfandbriefe and government bonds) are of prime quality (AAA to AA).

The other investments are predominantly floating-rate securities (equities and investment fund units) from around the world, plus entitlements arising from insurance policies, short-term investments, and real estate assets.

The fair value of the plan assets is broken down by asset class as follows:

	Dec. 31, 2018			Dec. 31, 2017		
€ million	With quoted market price in an active market	Without quoted market price in an active market	Total	With quoted market price in an active market	Without quoted market price in an active market	Total
Cash and money market investments	-	43	43	-	79	79
Bonds and other fixed-income securities	1,440	-	1,440	1,301	-	1,301
Shares	99	-	99	113	-	113
Investment fund units	177	105	282	160	107	267
Other variable-yield securities	3	-	3	3	-	3
Other shareholdings	-	34	34	-	28	28
Derivatives	1	-	1	1	-	1
Land and buildings	-	5	5	-	5	5
Entitlements arising from insurance policies	-	134	134	-	123	123
Other assets	-	117	117	-	96	96
Total	**1,720**	**438**	**2,158**	**1,578**	**438**	**2,016**

As at December 31, 2018, the plan assets included €158 million of the group's own financial instruments (December 31, 2017: €58 million). The real estate and other assets contained in the plan assets are not used by the companies themselves.

In Luxembourg, there is a joint plan with other employers. Provisions and contributions are allocated to the contributors as stipulated in the regulations. The gains or losses on investments are distributed to the contributors on the basis of the proportion of the net assets attributable to them at the start of the year.

Other provisions

The following table shows the changes in other provisions in 2018:

€ million	Provisions for onerous contracts	Provisions for restructuring	Provisions for loan commitments	Provisions for financial guarantee contracts	Other provisions for loans and advances	Provisions relating to building society operations	Residual provisions	Total
Balance as at Jan. 1, 2018	12	29	128	-	87	983	416	1,655
Adjustments due to first-time adoption of IFRS 9	-	-	-52	119	-	-	-	67
Balance as at Jan. 1, 2018 (restated)	12	29	76	119	87	983	416	1,722
Additions	5	4	155	81	28	196	202	671
Utilizations	-	-5	-	-	-	-107	-168	-280
Reversals	-4	-3	-182	-88	-78	-	-67	-422
Interest expense/changes in discount rate	-	-	-	2	2	-	-	4
Changes in scope of consolidation	-	-	-	-	-	-	5	5
Other changes	-	-	-	-1	-	-	4	3
Balance as at Dec. 31, 2018	**13**	**25**	**49**	**113**	**39**	**1,072**	**392**	**1,703**

The residual provisions include provisions totaling €42 million for litigation risk (December 31, 2017: €48 million). In particular, provisions have been recognized in connection with capital market and lending products. No information pursuant to IAS 37.84 and IAS 37.85 is disclosed for these provisions because it is believed that disclosure of this information would seriously harm the outcome of the proceedings.

The expected maturities of other provisions are shown in the tables below.

AS AT DECEMBER 31, 2018

€ million	≤ 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provisions for onerous contracts	13	-	-	-	-
Provisions for restructuring	3	3	19	-	-
Provisions for loan commitments	2	8	22	15	2
Provisions for financial guarantee contracts	19	29	49	16	-
Other provisions for loans and advances	2	32	2	2	1
Provisions relating to building society operations	5	495	450	122	-
Residual provisions	26	128	48	13	177
Total	**70**	**695**	**590**	**168**	**180**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39 AS AT DECEMBER 31, 2017

€ million	≤ 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provisions for onerous contracts	-	-	-	12	-
Provisions for restructuring	2	1	26	-	-
Provisions for loan commitments	4	50	57	-	17
Other provisions for loans and advances	4	76	3	2	2
Provisions relating to building society operations	6	475	390	112	-
Residual provisions	47	138	80	134	17
Total	**63**	**740**	**556**	**260**	**36**

The changes in loss allowances recognized under provisions for loan commitments and provisions for financial guarantee contracts were as follows:

	Loss allowances for loan commitments			Loss allowances for financial guarantee contracts			Total
€ million	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2018	27	5	44	12	4	103	195
Additions	80	37	38	15	13	53	236
Reversals	-83	-47	-52	-19	-19	-50	-270
Other changes	3	11	-14	-	5	-4	1
Balance as at Dec. 31, 2018	**27**	**6**	**16**	**8**	**3**	**102**	**162**

>> 68 Insurance liabilities

€ million	Dec. 31, 2018	Dec. 31, 2017
Provision for unearned premiums	1,171	1,169
Benefit reserve	61,709	58,670
Provision for claims outstanding	12,079	11,064
Provision for premium refunds	8,283	8,446
Other insurance liabilities	64	68
Reserve for unit-linked insurance contracts	9,946	9,907
Total	**93,252**	**89,324**

CHANGES IN THE PROVISION FOR UNEARNED PREMIUMS

€ million	2018	2017
Balance as at Jan. 1	1,169	1,119
Additions	1,235	1,235
Utilizations/reversals	-1,228	-1,176
Changes attributable to currency translation	-5	-9
Balance as at Dec. 31	**1,171**	**1,169**

CHANGES IN THE BENEFIT RESERVE

€ million	2018	2017
Balance as at Jan. 1	58,670	55,167
Additions	5,876	6,255
Interest component	1,045	1,067
Utilizations/reversals	-3,882	-3,818
Changes attributable to currency translation	-	-1
Balance as at Dec. 31	**61,709**	**58,670**

Supplementary change-in-discount-rate reserves totaling €3,306 million have been recognized for policies with a discount rate in excess of the reference rate specified in the DeckRV (December 31, 2017: €2,998 million).

CHANGES IN THE PROVISION FOR CLAIMS OUTSTANDING

€ million	2018	2017
Balance as at Jan. 1	11,064	10,071
Claims expenses	6,650	6,175
less payments	-5,630	-5,078
Changes attributable to currency translation	-5	-104
Balance as at Dec. 31	**12,079**	**11,064**

CHANGES IN THE PROVISION FOR PREMIUM REFUNDS

€ million	2018	2017
Balance as at Jan. 1	8,446	8,972
Adjustments due to first-time adoption of IFRS 9	1,694	-
Balance as at Jan. 1 (restated)	10,140	8,972
Additions	878	672
Utilizations/reversals	-705	-1,290
Changes resulting from unrealized gains and losses on investments (through other comprehensive income)	-1,488	-190
Changes resulting from other remeasurements (through profit or loss)	-542	316
Changes attributable to currency translation	-	-34
Balance as at Dec. 31	**8,283**	**8,446**

The breakdown of maturities for insurance liabilities is shown in the following tables:

AS AT DECEMBER 31, 2018

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	950	166	55	-
Benefit reserve	1,810	6,178	13,050	40,671
Provision for claims outstanding	4,388	4,301	3,390	-
Provision for premium refunds	833	644	713	6,093
Other insurance liabilities	41	13	7	3
Total	**8,022**	**11,302**	**17,215**	**46,767**

AS AT DECEMBER 31, 2017

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	1,011	124	34	-
Benefit reserve	1,677	6,601	13,258	37,134
Provision for claims outstanding	4,764	3,608	2,692	-
Provision for premium refunds	763	632	754	6,297
Other insurance liabilities	46	14	5	3
Total	**8,261**	**10,979**	**16,743**	**43,434**

>> 69 Other liabilities

€ million	Dec. 31, 2018	Dec. 31, 2017
Other liabilities of insurance companies	5,806	5,464
Liabilities from financial guarantee contracts		106
Accruals	1,155	1,156
Financial liabilities from contingent considerations in a business combination	5	-
Other payables	399	177
Residual other liabilities	554	620
Total	**7,919**	**7,523**

The table below gives a breakdown of insurance companies' other liabilities.

€ million	Dec. 31, 2018	Dec. 31, 2017
Other provisions	**373**	**354**
Provisions for employee benefits	336	317
Provisions for share-based payment transactions	2	1
Other provisions	35	36
Payables and residual other liabilities	**5,433**	**5,110**
Subordinated capital	87	85
Deposits received from reinsurers	43	75
Payables arising out of direct insurance operations	1,500	1,465
Payables arising out of reinsurance operations	342	269
Debt certificates issued including bonds	30	30
Deposits from banks	580	596
Derivatives (negative fair values)	11	39
Liabilities from capitalization transactions	2,086	1,861
Other payables	120	199
Residual other liabilities	634	491
Total	**5,806**	**5,464**

>> 70 Subordinated capital

€ million	Dec. 31, 2018	Dec. 31, 2017
Subordinated liabilities	2,810	3,573
Profit-sharing rights	68	292
Other hybrid capital	6	13
Share capital repayable on demand	13	21
Total	**2,897**	**3,899**

>> 71 Equity

Subscribed capital

The subscribed capital of DZ BANK consists of 1,791,344,757 registered non-par-value shares each with an imputed value of €2.75. All shares in issue are fully paid-up.

For the 2017 financial year, DZ BANK paid a dividend of €0.18 per share in 2018 (paid in 2017: €0.18 per share). A dividend of €0.18 per share for 2018 will be proposed to the Annual General Meeting.

Authorized capital

The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to increase the share capital by May 31, 2021 on one or more occasions by up to a total of €100 million by way of issuing new registered non-par-value shares in return for cash or non-cash contributions. The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to exclude the subscription right of shareholders both in the case of capital increases in return for non-cash contributions and in the case of capital increases in return for cash contributions if the capital is increased for the purpose of
- issuing new shares to employees of the corporation (employee shares),
- issuing new shares to one or more cooperative banks which, measured in terms of their total assets, directly and indirectly have a below-average stake in the corporation's share capital, i.e. less than 0.5 percent of their total assets (based on the nominal value of €2.75 per DZ BANK share),
- acquiring companies, equity investments in companies or for granting equity investments in the corporation in order to back strategic partnerships.

The Board of Managing Directors is also authorized, subject to the approval of the Supervisory Board, to exclude fractions from the subscription right of shareholders ('Authorized Capital I').

The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to increase the share capital by May 31, 2021 on one or more occasions by up to a total of €300 million by issuing new registered non-par-value shares in return for cash contributions. The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to exclude fractions from the subscription right of shareholders ('Authorized Capital II').

New shares issues that make use of Authorized Capital I or Authorized Capital II can also be underwritten by banks determined by the Board of Managing Directors provided that these banks offer the shares to the existing shareholders (indirect subscription right).

The Board of Managing Directors did not make use of any of this authorized action in 2018.

Contingent capital

The share capital is to be contingently raised by up to €52,859,413.75 by issuing up to 19,221,605 new, registered non-par-value shares (Contingent Capital). The increase in the Contingent Capital shall serve to grant registered non-par value shares (subscription shares) for the fulfillment of corresponding conversion rights and/or conversion obligations of creditors of convertible bonds or registered bonds, as the case may be, that were issued until June 24, 2015 in return for a cash contribution on the basis of the authorization resolution of the Annual General Meeting of WGZ BANK AG Westdeutsche Genossenschafts-Zentralbank of June 24, 2014. The increase in the Contingent Capital must only be carried out to the extent that the creditors of aforesaid convertible bonds or registered bonds, as the case may be, entitled or obliged to convert make use of their conversion right or fulfill their conversion obligation and that no own shares are used for aforesaid fulfillment. The subscription shares shall at all times be issued at a ratio of one registered bond to 7,435.824 subscription shares.

The subscription shares participate from the beginning of the financial year in which they come into existence in the profits of the current financial year as well as in the profits of previous years if a resolution of the appropriation of said profits has yet to be passed.

The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to determine the further details pertaining to the execution of the increase in the Contingent Capital.

Disclosures on shareholders

At the end of 2018, 99.4 percent of shares were held by cooperative enterprises (December 31, 2017: 99.3 percent). These cooperative enterprises include the cooperative banks and other legal entities and trading companies economically associated with the cooperative movement or cooperative housing sector.

Capital reserve

The capital reserve comprises the amounts from the issue of DZ BANK shares in excess of the imputed par value of the shares.

Retained earnings

Retained earnings comprise earned, undistributed consolidated profit together with gains and losses arising from remeasurement of defined benefit plans after taking into account deferred taxes. Cumulative gains and losses arising from remeasurement of defined benefit plans amounted to a loss of €568 million (December 31, 2017: loss of €516 million).

Reserve from other comprehensive income

Reserve from equity instruments for which the fair value OCI option has been exercised

The reserve from equity instruments for which the fair value OCI option has been applied is used to report the changes in the fair value of equity instruments measured at fair value through other comprehensive income after taking into account deferred taxes. If the equity instruments are sold, the related reserve is reclassified to retained earnings.

At the end of 2018, no components were attributable to the reserve from non-current assets and disposal groups classified as held for sale. As at December 31, 2017, an amount of €16 million in the revaluation reserve related to non-current assets and disposal groups classified as held for sale.

Reserve from gains and losses on financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk

The portion of the changes in fair value of financial liabilities designated as at fair value through profit or loss attributable to changes in the DZ BANK Group's own credit risk is also recognized in the reserve from other comprehensive income. If the liabilities are derecognized, the cumulative gains and losses recognized through other comprehensive income are reclassified to retained earnings.

Reserve from debt instruments measured at fair value through other comprehensive income

The reserve from debt instruments measured at fair value through other comprehensive income is used to report the changes in fair value after taking into account deferred taxes. In the case of debt instruments, gains and losses are only recognized in profit or loss when the relevant asset is sold. Loss allowances are recognized for these assets in accordance with IFRS 9.

Cash flow hedge reserve

The cash flow hedge reserve comprises the gains and losses on the measurement of hedging instruments attributable to the effective portion of the hedge after taking into account deferred taxes.

Currency translation reserve

The currency translation reserve is the result of the translation of financial statements of subsidiaries denominated in foreign currency into euros (the group reporting currency). It also includes the gains and losses on hedges of net investments in foreign operations and the change in the currency translation reserve for entities accounted for using the equity method.

Additional equity components

Additional Tier 1 notes

In previous years, DZ BANK had issued a tranche of additional Tier 1 notes (AT1 bonds) with a total volume of €750 million. The tranche of AT1 bonds issued is shown in the 'Additional equity components' sub-line item. According to the provisions of IAS 32, the AT1 bonds have characteristics of equity. The AT1 bonds are unsecured, subordinated bearer bonds of DZ BANK.

Other hybrid capital

As a result of the merger of DZ BANK with WGZ BANK, the convertible bond issued by WGZ BANK was taken over by DZ BANK as the legal successor. Upon initial recognition when the convertible bond was taken over, the components had to be defined as a financial liability or an equity instrument. The portion of the convertible bond that was not classified as a component of equity was recognized under subordinated capital. The equity component of €95 million has been included as an additional equity component within the equity of the DZ BANK Group until such time as it is potentially converted into non-par-value shares of DZ BANK. Further disclosures on conversion into non-par-value shares of DZ BANK can be found in the section on contingent capital.

Non-controlling interests

Non-controlling interests comprise the equity of subsidiaries not attributable to DZ BANK.

Breakdown of changes in equity by component of other comprehensive income

2018

€ million	Equity earned by the group	Reserve from other comprehensive income	Non-controlling interests
Gains and losses on debt instruments measured at fair value through other comprehensive income	-	-407	-57
Gains and losses on cash flow hedges	-	-6	-
Exchange differences on currency translation of foreign operations	-	25	-2
Gains and losses on hedges of net investments in foreign operations	-	2	-
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-	9	-16
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	-	23	1
Gains and losses arising from remeasurement of defined benefit plans	-53	-	-2
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	-	-
Other comprehensive income/loss	**-53**	**-354**	**-76**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39 FOR 2017

€ million	Equity earned by the group	Revaluation reserve	Cash flow hedge reserve	Currency translation reserve	Non-controlling interests
Gains and losses on available-for-sale financial assets	-	22	-	-	6
Gains and losses on cash flow hedges	-	-	15	-	1
Exchange differences on currency translation of foreign operations	-	-	-	-37	-3
Gains and losses on hedges of net investments in foreign operations	-	-	-	10	-1
Gains and losses arising from remeasurement of defined benefit plans	22	-	-	-	-
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	-13	1	-	-
Other comprehensive income/loss	**22**	**9**	**16**	**-27**	**3**

The table below shows a breakdown of the reserve from other comprehensive income:

	Items not reclassified to the income statement		**Items reclassified to the income statement**			
€ million	Reserve from equity instruments for which the fair value OCI option has been exercised	Reserve from gains and losses on financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	Reserve from debt instruments measured at fair value through other comprehensive income	Revaluation reserve	Cash flow hedge reserve	Currency translation reserve
Equity as at Jan. 1, 2017				1,401	-11	70
Other comprehensive income/loss				9	16	-27
Total comprehensive income/loss				**9**	**16**	**-27**
Changes in scope of consolidation				-14	-	-
Equity as at Dec. 31, 2017				1,396	5	43
Adjustments due to first-time adoption of IFRS 9	380		537	-1,396	-	-
Equity restated as at Jan. 1, 2018	380		537	-	5	43
Other comprehensive income/loss	9	23	-409		-6	29
Total comprehensive income/loss	**9**	**23**	**-409**		**-6**	**29**
Changes in scope of consolidation	-	-	-		1	12
Acquisition/disposal of non-controlling interests	4	-	3		-	-
Reclassifications within equity	-32	-	-		-	-
Equity as at Dec. 31, 2018	**361**	**23**	**131**		**-**	**84**

The changes in loss allowances included in the reserve from other comprehensive income were as follows:

	Loss allowances for loans and advances to customers			Loss allowances for investments		
€ million	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
Balance as at Jan. 1, 2018	1	3	-	4	7	33
Additions	-	-	-	4	1	-
Utilizations	-	-	-	-1	-	-5
Reversals	-	-2	-	-9	-5	-
Other changes	-	1	-	5	-2	1
Balance as at Dec. 31, 2018	**1**	**2**	**-**	**3**	**1**	**29**

	Loss allowances for investments held by insurance companies			Total
€ million	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2018	4	-	-	52
Additions	7	-	-	12
Utilizations	-	-	-	-6
Reversals	-7	-	-	-23
Other changes	-	-	-	5
Balance as at Dec. 31, 2018	**4**	**-**	**-**	**40**

E Financial instruments and fair value disclosures

>> 72 Classes, categories, and fair values of financial instruments

The following tables show the breakdown of net carrying amounts and fair values of financial assets and financial liabilities by class (in accordance with IFRS 7) and by category of financial instruments (in accordance with IFRS 9):

€ million	Dec. 31, 2018 Carrying amount	Fair value
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**147,561**	**147,561**
Financial assets measured at fair value through profit or loss	**61,381**	**61,381**
Financial assets mandatorily measured at fair value through profit or loss	***51,614***	***51,614***
Loans and advances to banks	1	1
Loans and advances to customers	234	234
Hedging instruments (positive fair values)	883	883
Financial assets held for trading	37,942	37,942
Investments	2,219	2,219
Investments held by insurance companies	10,335	10,335
Financial assets designated as at fair value through profit or loss	***9,767***	***9,767***
Loans and advances to banks	1,874	1,874
Loans and advances to customers	1,629	1,629
Investments	6,264	6,264
Financial assets measured at fair value through other comprehensive income	**85,764**	**85,764**
Financial assets mandatorily measured at fair value through other comprehensive income	***80,275***	***80,275***
Loans and advances to banks	230	230
Loans and advances to customers	3,716	3,716
Investments	19,774	19,774
Investments held by insurance companies	56,555	56,555
Financial assets designated as at fair value through other comprehensive income	***5,489***	***5,489***
Investments	603	603
Investments held by insurance companies	4,886	4,886
Non-current assets and disposal groups classified as held for sale	**416**	**416**
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**346,553**	**352,762**
Cash and cash equivalents	51,459	51,459
Loans and advances to banks	89,510	91,398
Loans and advances to customers	164,628	167,011
Investments	18,570	19,382
Investments held by insurance companies	14,218	15,744
Other assets	1,674	1,676
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	533	
Non-current assets and disposal groups classified as held for sale	**5,961**	**6,092**
FINANCE LEASES	**2,000**	**2,005**
Loans and advances to customers	2,000	2,005

€ million	Dec. 31, 2018 Carrying amount	Fair value
FINANCIAL LIABILITIES MEASURED AT FAIR VALUE	**81,126**	**81,126**
Financial liabilities mandatorily measured at fair value through profit or loss	**47,511**	**47,511**
Hedging instruments (negative fair values)	2,516	2,516
Financial liabilities held for trading	44,979	44,979
Other liabilities	16	16
Financial liabilities designated as at fair value through profit or loss	**33,607**	**33,607**
Deposits from banks	5,767	5,767
Deposits from customers	10,697	10,697
Debt certificates issued including bonds	16,763	16,763
Subordinated capital	380	380
Liabilities included in disposal groups classified as held for sale	**8**	**8**
FINANCIAL LIABILITIES MEASURED AT AMORTIZED COST	**310,201**	**313,569**
Deposits from banks	136,719	138,765
Deposits from customers	121,851	123,031
Debt certificates issued including bonds	47,146	47,299
Other liabilities	1,629	1,630
Subordinated capital	2,517	2,616
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	134	
Liabilities included in disposal groups classified as held for sale	**205**	**228**
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**162**	**162**
Financial guarantee contracts	**113**	**113**
Provisions	113	113
Loan commitments	**49**	**49**
Provisions	49	49

Given the complex structure of home savings contracts and the multitude of scales of rates and charges, there is currently no suitable method for calculating the fair value of an individual contract as at the balance sheet date. Consequently, the fair value cannot be determined using either comparable market prices or suitable option pricing models. The fair values of financial assets and financial liabilities resulting from building society operations are therefore shown in simplified form at their carrying amounts. On the basis of the models used for building society management, which comprise both collective and non-collective business including deposits, the overall amount for building society operations during the reporting period was positive.

The carrying amounts and fair values reported under investments held by insurance companies relate to receivables and fixed-income securities matched as cover for long-term insurance contract obligations as part of insurance operations. Because these instruments are normally held over their entire maturity, interest-rate-related changes in fair value during the maturity of the financial assets balance each other out in full. The fair values of the investments held by insurance companies comprise both the proportion of the fair values that is attributable to the policyholders and the proportion attributable to the shareholders of the DZ BANK Group. The fair value attributable to the shareholders of the DZ BANK Group of investments held by insurance companies measured at amortized cost was €14,771 million (December 31, 2017: €27,516 million).

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

	Dec. 31, 2017	
€ million	Carrying amount	Fair value
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**151,850**	**151,850**
Financial instruments held for trading	**39,008**	**39,008**
Financial assets held for trading	38,709	38,709
Investments held by insurance companies	299	299
Fair value option	**16,494**	**16,494**
Loans and advances to banks	2,199	2,199
Loans and advances to customers	4,138	4,138
Investments	9,587	9,587
Investments held by insurance companies	570	570
Derivatives used for hedging	**1,096**	**1,096**
Derivatives used for hedging (positive fair values)	1,096	1,096
Available-for-sale financial assets	**95,252**	**95,252**
Loans and advances to customers	22	22
Investments	40,741	40,741
Investments held by insurance companies	54,489	54,489
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**328,558**	**335,806**
Held-to-maturity investments	**1,648**	**1,658**
Investments	1,648	1,658
Loans and receivables	**326,612**	**333,850**
Cash and cash equivalents	43,637[1]	43,637[1]
Loans and advances to banks	87,174[1]	88,443[1]
Loans and advances to customers	164,549	166,378
Investments	4,419	4,584
Investments held by insurance companies	26,666	30,367
Other assets	441	441
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-274	
Available-for-sale financial assets	**298**	**298**
Investments	234	234
Investments held by insurance companies	64	64
FINANCE LEASES	**2,914**	**2,977**
Loans and advances to banks	22	3
Loans and advances to customers	2,892	2,974

1 Amount restated (see note 2).

€ million	Dec. 31, 2017 Carrying amount	Fair value
FINANCIAL LIABILITIES MEASURED AT FAIR VALUE	**78,064**	**78,064**
Financial instruments held for trading	**44,319**	**44,319**
Financial liabilities held for trading	44,280	44,280
Other liabilities	39	39
Fair value option	**30,783**	**30,783**
Deposits from banks	5,176	5,176
Deposits from customers	11,224	11,224
Debt certificates issued including bonds	13,780	13,780
Subordinated capital	603	603
Derivatives used for hedging	**2,962**	**2,962**
Derivatives used for hedging (negative fair values)	2,962	2,962
FINANCIAL LIABILITIES MEASURED AT AMORTIZED COST	**304,404**	**307,178**
Deposits from banks	130,946	132,383
Deposits from customers	115,095	116,322
Debt certificates issued including bonds	53,547	53,589
Other liabilities	1,407	1,409
Subordinated capital	3,296	3,475
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	113	
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**234**	**234**
Financial guarantee contracts	**106**	**106**
Other liabilities	106	106
Loan commitments	**128**	**128**
Provisions	128	128

>> 73 Equity instruments designated as at fair value through other comprehensive income

Investments and investments held by insurance companies include shares and other variable-yield securities and investments in subsidiaries, joint ventures, and associates that the DZ BANK Group has elected to measure at fair value through other comprehensive income. These investments and investments held by insurance companies are not held for trading or to generate returns. The DZ BANK Group believes that it would be inappropriate to report gains and losses in profit or loss in this case.

€ million	Dec. 31, 2018
Investments	**603**
Shares and other variable-yield securities	440
Investments in subsidiaries	163
Investments held by insurance companies	**4,886**
Shares and other variable-yield securities	4,519
Investments in subsidiaries	349
Investments in joint ventures	15
Investments in associates	3
Total	**5,489**

Dividends of €159 million were recognized in 2018 in respect of investments and investments held by insurance companies as at the reporting date.

Investments held by insurance companies (plus a small number of investments) with a carrying amount of €745 million were derecognized in 2018. The derecognition of these investments was attributable to capital repayments, liquidations, disposals, and mergers. No further current gains or losses are expected from these assets. The derecognition of these assets resulted in the reclassification of cumulative gains and losses of €53 million to retained earnings in 2018. Dividends of €15 million were recognized in 2018 in respect of investments and investments held by insurance companies that have been sold.

>> 74 Assets and liabilities measured at fair value on the balance sheet

Fair value hierarchy

The fair value measurements are assigned to the levels of the fair value hierarchy as follows:

	Level 1		Level 2		Level 3	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Assets	**70,070**	**67,674**	**81,558**	**88,969**	**8,310**	**6,833**
Loans and advances to banks	-	-	2,105	1,970	-	229
Loans and advances to customers	-	-	4,651	3,002	928	1,158
Hedging instruments (positive fair values)	-	-	883	1,096	-	-
Financial assets held for trading	1,351	1,488	36,037	36,513	554	708
Investments	14,829	13,801	11,852	35,116	2,179	1,411
Investments held by insurance companies	53,889	52,385	25,336	11,245	4,261	3,277
Non-current assets and disposal groups classified as held for sale	1	-	694	27	388	50
of which: non-recurring measurement	-	-	667	-	-	-
Liabilities	**3,873**	**1,096**	**87,348**	**86,562**	**1,524**	**1,854**
Deposits from banks	-	-	5,767	5,176	-	-
Deposits from customers	-	-	10,697	11,224	-	-
Debt certificates issued including bonds	2,488	473	13,710	12,764	565	543
Hedging instruments (negative fair values)	-	-	2,516	2,962	-	-
Financial liabilities held for trading	1,376	612	42,696	42,590	907	1,078
Financial liabilities arising from unit-linked insurance products	-	-	11,619	11,448	-	-
Other liabilities	9	11	-	13	7	15
Subordinated capital	-	-	335	385	45	218
Liabilities included in disposal groups classified as held for sale	-	-	8	-	-	-

The investments held by insurance companies measured at fair value include assets related to unit-linked contracts. These are offset on the equity and liabilities side of the balance sheet by financial liabilities measured at fair value arising from unit-linked insurance products, which consist of the reserve for unit-linked insurance contracts and liabilities from capitalization transactions allocated to unit-linked life insurance.

Transfers

Assets and liabilities held at the balance sheet date and measured at fair value on a recurring basis were transferred as follows between Levels 1 and 2 of the fair value hierarchy:

	Transfers from Level 1 to Level 2		Transfers from Level 2 to Level 1	
€ million	2018	2017	2018	2017
Financial assets measured at fair value	**267**	312	**348**	179
Financial assets held for trading	-	39	87	2
Investments	35	-	-	11
Investments held by insurance companies	232	273	261	166
Financial liabilities measured at fair value	**-**	3	**5**	-
Financial liabilities held for trading	-	3	5	-

Transfers from Level 1 to Level 2 were due to quoted prices no longer being obtainable in active markets for identical assets or liabilities. Transfers from Level 2 to Level 1 were due to the availability of quoted prices in active markets that had previously not existed.

In the DZ BANK Group, transfers between Levels 1 and 2 take place when there is a change in the inputs that is relevant to categorization in the fair value hierarchy.

Fair value measurements within Levels 2 and 3

Fair value measurements within Level 2 of the fair value hierarchy either use prices available in active markets for similar, but not identical, financial instruments or use valuation techniques largely based on observable market data. If valuation techniques are used that include a significant valuation input that is not observable in the market, the relevant fair value measurements are categorized within Level 3 of the fair value hierarchy.

Generally, the discounted cash flow (DCF) method is used in the model-based measurement of the fair value of financial instruments without optionalities. Modeling of the yield curves is based on a multi-curve approach with collateral discounting. Simple products on which options exist are measured using customary standard models in which the inputs are quoted in active markets. For structured products on which options exist, a wide range of standard valuation techniques are used. Valuation models are calibrated to available market prices and validated regularly. The fair values of structured products can be measured by breaking these products into their constituent parts, which are then measured using the valuation methods described below.

The basis for measurement is the selection of an adequate yield curve for each specific instrument. The measurement is carried out by selecting appropriate tenor-specific forward curves for projecting variable cash flows. The nature and collateralization of the transactions determines how they are discounted using yield curves that can be adjusted on the basis of relevant spreads.

The DZ BANK Group uses prices in active markets (provided these prices are available) for the fair value measurement of loans and advances as well as unstructured bonds. Otherwise, it mainly uses the DCF method. Discounting is based on yield curves that are adjusted for liquidity-related and credit rating-related costs using spreads. Product-dependent funding spreads are added to the yield curve for liabilities attributable to registered creditors, debt certificates issued including bonds, and subordinated capital. Debt instruments held are adjusted using issuer-specific spreads or spreads derived from the issuer's internal and external credit rating, sector, and risk category. Customer-appropriate spreads and collateralization rates are taken into account for the measurement of loans when the DCF method is used. If significant unobservable inputs are used for measurement and there are no indications that the transaction price is not identical to the fair value at the time of first-time recognition on the balance sheet, the valuation method is calibrated in such a way that the model price at the time of acquisition corresponds to the transaction price. In exceptional cases, the nominal amount of the debt instrument in question provides the best evidence of fair value.

The fair value measurements of shares and other variable-yield securities and of long-term equity investments accounted for in accordance with IFRS 9 are determined by applying income capitalization approaches and observing transaction prices. The best indicator of fair value is deemed to be the transaction prices for recent transactions involving the relevant financial instruments, provided there have been any such transactions. Otherwise, the fair value is measured using income capitalization approaches in which future income and dividends – calculated on the basis of forecasts and estimates – are discounted, taking risk parameters into account.

The fair value measurements of investment fund units are determined using the pro rata net asset value. This is adjusted for any outstanding performance-related remuneration entitlements of fund managers; risk adjustments are also taken into account. Some long-term equity investments in real-estate companies are also measured at net asset value. In this case, the liabilities are subtracted from the fair values of the real estate tied up in the company and the result is multiplied by the percentage of shareholding. The prices of units in real-estate funds that are not managed by the DZ BANK Group are provided by the asset management company that manages these funds. These units are measured regularly at net asset value. Fair value measurements are also based on valuations, current values, and prices in recent transactions.

The fair value measurement of standardized derivatives traded in liquid markets is based on observable market prices and/or industry-standard models using observable inputs. To discount the cash flows of derivatives, a distinction is made between non-collateralized and collateralized transactions when using yield curves in order to take into account the specific funding costs. Moreover, calculation of the model prices for products on which options exist mostly requires the input of additional market data (e.g. volatilities, correlations, repo rates). As far as possible, this data is derived implicitly from quoted market prices that are available. If observable quoted market prices are not available, or only available to a limited extent, the DZ BANK Group uses customary interpolation and extrapolation mechanisms, historical time series analyses, and fundamentals analyses of economic variables to generate the required inputs. It also uses expert assessments on a small scale.

The fair value measurement of OTC financial derivatives applies the option in IFRS 13.48, which enables the total net amount to be measured. In the first step, credit risk is not taken into account. Counterparty-specific credit risk arising from derivatives is recognized after the total net amount has been determined. Credit valuation adjustments (CVAs) are recognized to take into account counterparty credit risk and debt valuation adjustments (DVAs) are recognized to take into account the group's own credit risk. Their measurement also takes account of collateral and uses market-implied parameters with matching maturities or internal parameters with matching maturities for the probability of default and loss given default.

The measurement of financial instruments also involves carrying out measurement adjustments to a suitable degree. This includes, among other things, model reserves that enable uncertainties regarding model selection, model parameters, and model configuration to be taken into account. The DZ BANK Group measures financial instruments at the price at which these financial instruments can be realized in the market. If this differs from the measurement of the individual instruments (e.g. measurement at middle rates), the bid/ask adjustments (close-out reserves) are determined on a net basis applying the option in IFRS 13.48. Measurement takes account of the group's funding structure.

The following table shows the valuation techniques, the unobservable inputs, and the spreads of the unobservable inputs used for the fair value measurements at Level 3 of the fair value hierarchy as at the balance sheet date.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Loans and advances to customers	Loans	670	DCF method	BVAL price adjustment	-1.4 to 1.9
		56	DCF method	Credit spread	0.0 to 8.3
	Profit-participation certificates	57	DCF method	Internal credit ratings	5.2 to 16.7
	Shareholders' loans	89	DCF method	Internal credit ratings	5.2 to 16.7
	Receivables arising from silent partnerships	56	DCF method	Internal credit ratings	5.2 to 16.7
Financial assets held for trading	ABSs	4	DCF method	Credit spread	0.6 to 5.3
	Equity/commodity basket products	5	Local volatility model	Correlation of the risk factors considered	11.9 to 85.3
	Loans and advances to issuers in default	5	DCF method	Recovery rate	-
	Collateralized loan obligations	141	Gaussian copula model	Liquidity spread	0.0 to 4.4
	Bearer securities	335	DCF method	BVAL price adjustment	-1.3 to 0.7
	Registered securities	15	DCF method	BVAL price adjustment	-1.4 to 1.9
	Option in connection with acquisition of long-term equity investments	49	Black-Scholes model	Earnings indicator	-
Investments	ABSs	31	DCF method	Credit spread	0.6 to 5.3
	Other variable-yield securities	10	DCF method	Assumptions for measurement of risk parameters	9.7 to 13.4
	Investments in subsidiaries	22	DCF method	Assumptions for measurement of risk parameters	9.7 to 13.4
		277	Income capitalization approach, net asset value method	Future income	-
		1	Liquidation value	-	-
	Collateralized loan obligations	7	Gaussian copula model	Liquidity spread	0.0 to 4.4
	Bearer securities	293	DCF method	BVAL price adjustment	-1.3 to 125.0
	Investment fund units	21	Net asset value	-	-
	Mortgage-backed securities	367	DCF method	Duration	-
		62	DCF method	Recovery rate	15.8 to 95.3
	Other shareholdings	57	DCF method	Capitalization rate, growth factor	0.0 to 11.2
		14	DCF method	Assumptions for measurement of risk parameters	9.7 to 13.4
		455	Income capitalization approach, net asset value method	Future income	-
	VR Circle	562	DCF method	Multiple-year default probabilities	0 to 100

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Investments held by insurance companies	ABSs	621	Third-party pricing information	-	-
	Investments in subsidiaries, associates, and joint ventures, real estate funds, profit-participation certificates, and other long-term equity investments	2,128	Net asset value	-	-
	Investments in subsidiaries, associates, and joint ventures, other long-term equity investments, and shares in cooperative banks	296	Income capitalization approach	Future income	6.9 to 11.6
	Fixed-income securities, convertible bonds, shares, and shares in cooperative banks	804	Third-party pricing information	-	-
	Profit-participation certificates and promissory notes	403	DCF method	Credit spread	5.3 to 7.5
	Derivatives (positive fair values)	3	Third-party pricing information	-	-
	Other shareholdings	6	Approximation	-	-
Non-current assets and disposal groups classified as held for sale	Loans	378	DCF method	Credit spread	0.0 to 8.3
	Other shareholdings	10	Income capitalization approach, net asset value method	Future income	-
Debt certificates issued including bonds	VR Circle	565	DCF method	Multiple-year default probabilities	0 to 100
Financial liabilities held for trading	Equity/commodity basket products	863	Local volatility model	Correlation of the risk factors considered	11.9 to 85.3
	Option in connection with acquisition of long-term equity investments	8	Black-Scholes model	Earnings indicators	-
	Products with commodity volatility derived from comparable instruments	36	Local volatility model	Earnings indicators	7.0 to 64.2
Other liabilities	Incentivization commitment in connection with acquisition of long-term equity investments	5	Expected value	-	-
	Derivatives (negative fair values)	2	Third-party pricing information	-	-
Subordinated capital	Loans	45	DCF method	Credit spread	0.0 to 3.6

The following table shows the valuation techniques, the unobservable inputs, and the spreads of the unobservable inputs used for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2017.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Loans and advances to banks	Loans	229	DCF method	Credit spread	0.3 to 3.6
Loans and advances to customers	Loans	370	DCF method	Credit spread	0.0 to 8.3
		8	DCF method	Internal spread	1.5 to 5.0
		758	DCF method	BVAL price adjustment	-1.9 to 27.4
	Receivables arising from silent partnerships	22	DCF method	Internal credit ratings	6,7
Financial assets held for trading	ABSs	52	DCF method	Credit spread	0.3 to 5.0
	Bearer securities	305	DCF method	BVAL price adjustment	-0.3 to 0.6
	Equity/commodity basket products	15	Local volatility model	Correlation of the risk factors considered	9.9 to 91.6
	Collateralized loan obligations	129	Gaussian copula model	Liquidity spread	0.3 to 2.0
	Syndicated loans	7	DCF method	Credit spread	0.0 to 8.3
	Loans and advances to issuers in default	5	DCF method	Recovery rate	-
	Registered securities	158	DCF method	BVAL price adjustment	-1.9 to 27.4
	Option in connection with acquisition of long-term equity investments	37	Black-Scholes model	Earnings indicators	-
Investments	Bearer securities	289	DCF method	BVAL price adjustment	-0.3 to 132.3
	VR Circle	543	DCF method	Multiple-year default probabilities	0 to 100
	Investments in subsidiaries	29	Income capitalization approach	Future income	-
		38	DCF method	Assumptions for measurement of risk parameters	4.8 to 10.5
	Other shareholdings	379	Income capitalization approach, net asset value method	Future income	-
		15	DCF method	Assumptions for measurement of risk parameters	4.8 to 10.5
	Investment fund units	31	Net asset value	-	-
	ABSs	64	DCF method	Credit spread	0.3 to 5.0
	Collateralized loan obligations	23	Gaussian copula model	Liquidity spread	0.3 to 2.0

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Investments held by insurance companies	Investments in subsidiaries, associates, and joint ventures, real estate funds, profit-participation certificates, and other long-term equity investments	1.417	Net asset value	-	-
	Investments in subsidiaries and associates, other long-term equity investments, and shares in cooperative banks	328	Income capitalization approach	Future income	6.5 to 8.9
	ABSs	322	Third-party pricing information	-	-
	Profit-participation certificates, silent partnerships, promissory notes, and loan commitments	409	DCF method	Credit spread	0.5 to 7.8
	Fixed-income securities, shares, and shares in cooperative banks	797	Third-party pricing information	-	-
	Derivatives (positive fair values)	4	Third-party pricing information	-	-
Non-current assets and disposal groups classified as held for sale	Other shareholdings	50	Income capitalization approach	Future income	11.7
Debt certificates issued including bonds	VR Circle	543	DCF method	Multiple-year default probabilities	0 to 100
Financial liabilities held for trading	Equity/commodity basket products	1,073	Local volatility model	Correlation of the risk factors considered	7.0 to 91.6
	Option in connection with acquisition of long-term equity investments	5	Black-Scholes model	Earnings indicators	-
Other liabilities	Derivatives (negative fair values)	4	Third-party pricing information	-	-
		11	DCF method	Correlation of the risk factors considered	47.5
Subordinated capital	Loans	218	DCF method	Credit spread	0.3 to 3.6

Fair value measurements within Level 3 of the fair value hierarchy

The table below shows the changes in the recurring fair value measurements of assets within Level 3 of the fair value hierarchy:

€ million	Loans and advances to banks	Loans and advances to customers	Financial assets held for trading	Investments	Investments held by insurance companies	Non-current assets and disposal groups classified as held for sale
Balance as at Jan. 1, 2017	229	1,079	441	1,892	2,886	136
Additions (purchases)	-	389	65	23	821	6
Transfers	-	-110	271	-141	405	-
from Level 3 to Levels 1 and 2	-	-110	-4	-319	-46	-
from Levels 1 and 2 to Level 3	-	-	275	178	451	-
Disposals (sales)	-	-75	-54	-524	-769	-126
Changes resulting from measurement at fair value	-	-9	-19	53	-38	-10
through profit or loss	-	-9	-19	-2	-46	-
through other comprehensive income	-	-	-	55	8	-10
Other changes	-	-116	4	108	-28	44
Balance as at Dec. 31, 2017	229	1,158	708	1,411	3,277	50
Adjustments due to first-time adoption of IFRS 9	-229	364	-48	844	153	-
Balance restated as at Jan. 1, 2018	-	1,522	660	2,255	3,430	50
Additions (purchases)	-	68	60	132	1,216	1
Transfers	-	-27	-56	185	-1	-
from Level 3 to Levels 1 and 2	-	-27	-134	-108	-99	-
from Levels 1 and 2 to Level 3	-	-	78	293	98	-
Disposals (sales)	-	-619	-114	-550	-506	-51
Changes resulting from measurement at fair value	-	-19	-4	163	122	-
through profit or loss	-	-20	-4	29	72	-
through other comprehensive income	-	1	-	134	50	-
Other changes	-	3	8	-6	-	388
Balance as at Dec. 31, 2018	**-**	**928**	**554**	**2,179**	**4,261**	**388**

The table below shows the changes in the recurring fair value measurements of liabilities within Level 3 of the fair value hierarchy:

€ million	Deposits from banks	Debt certificates issued including bonds	Financial liabilities held for trading	Other liabilities	Subordinated capital
Balance as at Jan. 1, 2017	1	514	1,510	19	349
Additions (issues)	-	32	23	-	-
Transfers	-1	-	-467	-	-
from Level 3 to Level 2	-1	-	-470	-	-
from Level 2 to Level 3	-	-	3	-	-
Disposals (settlements)	-	-	-	-	-122
Changes resulting from measurement at fair value through profit or loss	-	-3	4	-4	-9
Other changes	-	-	8	-	-
Balance as at Dec. 31, 2017	-	543	1,078	15	218
Adjustments due to first-time adoption of IFRS 9	-	-	-	-	36
Balance restated as at Jan. 1, 2018	-	543	1,078	15	254
Additions (issues)	-	21	25	-	-
Transfers	-	-	-187	-	-
from Level 3 to Level 2	-	-	-252	-	-
from Level 2 to Level 3	-	-	65	-	-
Disposals (settlements)	-	-	-	-7	-205
Changes resulting from measurement at fair value through profit or loss	-	1	-18	-1	-4
Other changes	-	-	9	-	-
Balance as at Dec. 31, 2018	**-**	**565**	**907**	**7**	**45**

As part of the processes for fair value measurement, the DZ BANK Group reviews whether the valuation methods used for the measurement are typical and whether the valuation inputs used in the valuation methods are observable in the market. This review takes place at every balance sheet date, i.e. at least every 6 months. On the basis of this review, the fair value measurements are assigned to the levels of the fair value hierarchy. In the DZ BANK Group, transfers between the levels generally take place as soon as there is a change in the inputs that is relevant to categorization in the fair value hierarchy.

In each step of these processes, both the distinctive features of the particular product type and the distinctive features of the business models of the group entities are taken into consideration.

Transfers of fair values from Levels 1 and 2 to Level 3 of the fair value hierarchy during the financial year are largely attributable to a revised estimate of the market observability of the valuation inputs used in the valuation methods. Transfers from Level 3 to Levels 1 or 2 are essentially due to the availability of a price listed in an active market and to the inclusion in the valuation method of material valuation inputs observable in the market.

The amount of gains or losses recognized in profit or loss resulting from the recurring fair value measurements within Level 3 of assets and liabilities held at the balance sheet date constituted a gain of €124 million during the year under review (2017: loss of €44 million). The gains or losses are mainly included in the line items net interest income, gains and losses on trading activities, gains and losses on investments, other gains and losses on valuation of financial instruments, and gains and losses on investments held by insurance companies and other insurance company gains and losses.

For the fair values of investments held by insurance companies reported within Level 3, a worsening in the credit rating or a rise in the interest rate of 1 percent would lead to the recognition of a €32 million loss in the income statement (2017: loss of €5 million) and a loss of €1 million under other comprehensive income/loss (2017: loss of €1 million). In the case of the fair values of loans and advances to customers, the same change would lead to the recognition of a €27 million loss in the income statement (2017: loss of €8 million). A loss of €1 million would have been recognized in other comprehensive income in 2017. For the fair values of investments, there would be a €27 million loss under other comprehensive income/loss (2017: loss of €8 million) and a €23 million loss in the income statement (2017: loss of €17 million). Within financial assets held for trading, the changes would give rise to a loss of €11 million recognized in profit or loss (2017: loss of €5 million); however, changes within financial liabilities held for trading would result in a gain of €2 million recognized in profit or loss (2017: no change recognized in profit or loss). Within other liabilities, no change would have been recognized in the income statement as at the reporting date (2017: loss of €1 million).

The fair values of bonds without liquid markets that are reported within financial assets held for trading, investments, and loans and advances to customers are given an individual adjustment spread or are measured using Bloomberg Valuation Service prices, which are observable in the market. All other things being equal, a rise of 1 percent in the relevant measurement assumptions would lead to the recognition of a loss of €7 million in the income statement (2017: loss of €43 million) and a loss of €22 million in other comprehensive income/loss (2017: gain of €1 million). Historical spreads are used for bonds recognized under subordinated capital whose spread components are no longer observable in the market. All other things being equal, an increase of 1 percent in the spread would lead to a €4 million increase in fair value that would be recognized in the income statement (2017: increase of €3 million).

An alternative assumption about the credit spreads used could lead to a significant change in the fair values of some of the ABSs reported under financial assets held for trading and under investments. All other things being equal, a rise of 1 percent in these credit spreads would lead to the recognition of a loss of €2 million in the income statement (2017: loss of €3 million). In 2018, the changes would not have given rise to any gain or loss to be recognized in other comprehensive income (2017: loss of €1 million).

Measurement of some of the commodities reported under financial assets and financial liabilities held for trading is based on the benchmark volatility of a comparable underlying. All other things being equal, an increase of 1 percent in the volatility would lead to the recognition of a gain of €2 million in the income statement (2017: gain of €2 million).

An alternative assumption about the liquidity spreads used could lead to a significant change in respect of collateralized loan obligations reported under investments and under financial assets held for trading. All other things being equal, a rise in the liquidity spread assumptions by 1 percent would lead to a €7 million decrease in the fair values of these financial assets that would be recognized in the income statement (2017: decrease of €4 million).

Sensitivity analysis is used to calculate the aforementioned changes in the fair value measurements. Non-performing exposures and strategically held investments in subsidiaries and other shareholdings whose fair values are calculated using an income capitalization approach are not included in the sensitivity analysis.

Exercise of option pursuant to IFRS 13.48

The option offered by IFRS 13.48 of measuring a net risk position for financial assets and financial liabilities is used for portfolios whose components are recognized under the balance sheet items loans and advances to banks, loans and advances to customers, financial assets held for trading, investments, and financial liabilities held for trading.

>> 75 Assets and liabilities not measured at fair value on the balance sheet

Fair value hierarchy

Recurring fair value measurements of assets and liabilities that are not recognized at fair value on the balance sheet, but whose fair value must be disclosed, are assigned to the levels of the fair value hierarchy as follows:

	Level 1		Level 2		Level 3	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Assets	**529**	**19**	**196,735**	**188,064**	**159,583**	**151,378**
Cash and cash equivalents	-	-	51,459	43,637[1]	-	-
Loans and advances to banks	-	9	87,008	84,809[1]	4,390	3,625
Loans and advances to customers	-	-	34,675	34,197	132,336	132,181
Investments	529	-	18,411	5,319	442	1,157
Investments held by insurance companies	-	10	4,693	19,519	14,850	14,192
Property, plant and equipment, and investment property	-	-	131	192	155	173
Other assets	-	-	338	391	1,338	50
Non-current assets and disposal groups classified as held for sale	-	-	20	-	6,072	-
Liabilities	**3,158**	**4,709**	**244,535**	**239,336**	**66,038**	**63,367**
Deposits from banks	-	-	137,017	130,618	1,748	1,765
Deposits from customers	-	-	62,675	59,454	60,356	56,868
Debt certificates issued including bonds	3,158	4,709	44,141	48,880	-	-
Provisions	-	-	21	5	141	123
Other liabilities	-	-	338	227	1,292	1,288
Subordinated capital	-	-	115	152	2,501	3,323
Liabilities included in disposal groups classified as held for sale	-	-	228	-	-	-

1 Amount restated (see note 2).

Fair value measurements within Levels 2 and 3

The fair value measurements of assets and liabilities that are not recognized at fair value on the balance sheet largely correspond to the fair value measurements of assets and liabilities that are recognized at fair value on the balance sheet.

The following table shows the valuation techniques and the unobservable inputs used in these techniques for the fair value measurements at Level 3 of the fair value hierarchy as at the balance sheet date.

Class according to IFRS 13	**Assets/liabilities**	**Fair value (€ million)**	**Valuation technique**	**Unobservable inputs**
Loans and advances to banks	Loans	4,390	DCF method	Credit spread, recovery rate
Loans and advances to customers	Building loans	45,449	Amortized cost	-
	Loans	86,887	DCF method	Credit spread, recovery rate, internal spread
Investments	ABSs	181	DCF method	Credit spread
	Bonds with adjustment spread	261	DCF method	BVAL price adjustment
Investments held by insurance companies		255	Cost	Nominal amounts
	Investment property	3,544	DCF method	Future rent, reference prices in the market
	Loans and bank accounts	10,989	DCF method	Yield curves, credit spread
	Loans	62	Cost	Nominal amounts
Property, plant and equipment	Investment property	155	Valuation reports	-
Other assets	Credit balances with banks	409	Cost	Nominal amounts
	Other receivables	929	Cost	Nominal amounts
Non-current assets and disposal groups classified as held for sale	Loans	6,072	DCF method	Credit spread

Class according to IFRS 13	**Assets/liabilities**	**Fair value (€ million)**	**Valuation technique**	**Unobservable inputs**
Deposits from banks	Home savings deposits	1,652	Cost	-
	Loans	96	DCF method	Credit spread
Deposits from customers	Home savings deposits	59,996	Cost	-
	Loans	339	DCF method	Credit spread
	Other payables	4	Cost	-
	Overpayments on consumer finance loans	17	Cost	-
Provisions	Provisions for loan commitments	141	Settlement amount	-
Other liabilities	Loans	484	Cost	Nominal amounts
	Non-controlling interests in special funds	95	Cost	Nominal amounts
	Subordinated liabilities	59	DCF method	Yield curves, credit spread
	Registered securities	30	Cost	Nominal amounts
	Other payables	211	Cost	Nominal amounts
	Liabilities from capitalization transactions	413	Cost	Nominal amounts
Subordinated capital	Bonds with adjustment spread	2,501	DCF method	Credit spread

The following table shows the valuation techniques and the unobservable inputs used in these techniques for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2017.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Loans and advances to banks	Loans	3,625	DCF method	Credit spread, recovery rate
Loans and advances to customers	Loans	91,152	DCF method	Credit spread, recovery rate, internal spread
	Building loans	40,838	Amortized cost	-
	Shareholders' loans, profit-sharing rights, silent partnerships	191	DCF method	Internal credit ratings
Investments	Mortgage-backed securities	610	DCF method	Duration
	Shares and other variable-yield securities and investments in subsidiaries, joint ventures, and associates	234	Cost	-
	ABSs	186	DCF method	Credit spread
	Bearer securities	95	DCF method	Credit spread
	RMBSs/CMBSs	27	DCF method	Liquidity spread
	Profit-participation certificates	5	DCF method	Estimated cash flows
Investments held by insurance companies	Investment property	3,257	DCF method	Future rent, reference prices in the market
		33	Cost	-
	Loans and bank accounts	10,769	DCF method	Yield curves, credit spread
	Loans	69	Cost	-
	Shares and other variable-yield securities and investments in subsidiaries, joint ventures, and associates	64	Cost	-
Property, plant and equipment	Investment property	173	Valuation reports	-
Other assets	Credit balances with banks	50	Cost	-

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Deposits from banks	Home savings deposits	1,633	Amortized cost	-
	Loans	132	DCF method	Credit spread
Deposits from customers	Home savings deposits	56,642	Amortized cost	-
	Loans	219	DCF method	Credit spread
	Overpayments on consumer finance loans	7	Cost	-
Provisions	Provisions for loan commitments	123	Settlement amount	-
Other liabilities	Loans	510	Cost	-
	Liabilities from capitalization transactions	321	Cost	-
	Other payables	248	Cost	-
	Non-controlling interests in special funds	92	Cost	-
	Registered securities	30	Cost	-
	Liabilities from financial guarantee contracts	87	Settlement amount	-
Subordinated capital	Share capital repayable on demand	13	Amount repayable	-
	Bearer securities	3,310	DCF method	Credit spread

>> 76 Financial liabilities designated as at fair value through profit or loss

A residual value method is used to determine changes in fair value attributable to changes in the DZ BANK Group's own credit risk. In this method, the measurement effect caused by changes in own credit risk is determined by deducting the measurement effect caused by factors other than the change in own credit risk from the overall change in fair value. The cumulative changes in fair value resulting from changes in own credit risk amounted to €35 million in 2018. The use of this method ensures that the changes in fair value attributable to changes in own credit risk are not distorted by other effects caused by changes in market risk.

The following overview compares fair values with the amounts contractually required to be paid at maturity to the creditors concerned for liabilities designated as at fair value through profit or loss, but whose changes in fair value attributable to own credit risk are reported in other comprehensive income:

	Dec. 31, 2018	
€ million	Fair value	Amount repayable
Deposits from banks	5,767	5,689
Deposits from customers	10,697	9,297
Debt certificates issued including bonds	16,763	16,716
Subordinated capital	380	358
Total	**33,607**	**32,060**

In the course of the year under review, only a negligible loss was reclassified to retained earnings within equity as a result of the recognition of measurement effects in connection with changes in the DZ BANK Group's own credit risk.

Likewise, the derecognition of financial liabilities only led to a negligible loss that had previously been reported in other comprehensive income/loss.

The following overview shows the fair value of financial liabilities designated as at fair value through profit or loss in accordance with the provisions of IAS 39 compared with the amounts contractually required to be repaid at maturity to the creditors concerned:

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

	Dec. 31, 2017	
€ million	Fair value	Amount repayable
Deposits from banks	5,176	5,113
Deposits from customers	11,224	9,601
Debt certificates issued including bonds	13,780	13,767
Subordinated capital	603	573
Total	**30,783**	**29,054**

>> 77 Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities reference standard master agreements, such as ISDA Master Agreements and German Master Agreements for Financial Futures. However, these standard master agreements do not generally satisfy the offsetting criteria in IAS 32.42 because the legal right to set off the amounts under these agreements is contingent on the occurrence of a future event.

The following tables show financial assets that were offset as at the balance sheet date or that are subject to a legally enforceable global netting agreement or similar arrangement:

AS AT DECEMBER 31, 2018

€ million	Gross amount of financial assets before offsetting	Gross amount of offset financial liabilities	Net amount of financial assets (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral received	
Derivatives	25,348	8,606	16,742	12,015	2,764	1,963
Reverse repos/securities borrowing	10,677	-	10,677	10,192	-	485
Total	**36,025**	**8,606**	**27,419**	**22,207**	**2,764**	**2,448**

AS AT DECEMBER 31, 2017

€ million	Gross amount of financial assets before offsetting	Gross amount of offset financial liabilities	Net amount of financial assets (carrying amount)	Associated amounts not offset on the balance sheet: Financial instruments	Associated amounts not offset on the balance sheet: Cash collateral received	Net amount
Derivatives	26,570	7,910	18,660	13,142	2,497	3,021
Reverse repos/securities borrowing	10,243	-	10,243	10,138	-	105
Total	**36,813**	**7,910**	**28,903**	**23,280**	**2,497**	**3,126**

The following tables show financial liabilities that were offset as at the balance sheet date or that are subject to a legally enforceable global netting agreement or similar arrangement:

AS AT DECEMBER 31, 2018

€ million	Gross amount of financial liabilities before offsetting	Gross amount of offset financial assets	Net amount of financial liabilities (carrying amount)	Associated amounts not offset on the balance sheet: Financial instruments	Associated amounts not offset on the balance sheet: Cash collateral furnished	Net amount
Derivatives	29,441	10,753	18,688	12,328	5,637	723
Repos/securities lending	7,188	-	7,188	7,164	-	24
Other financial instruments	43	43	-	-	-	-
Total	**36,672**	**10,796**	**25,876**	**19,492**	**5,637**	**747**

AS AT DECEMBER 31, 2017

€ million	Gross amount of financial liabilities before offsetting	Gross amount of offset financial assets	Net amount of financial liabilities (carrying amount)	Associated amounts not offset on the balance sheet: Financial instruments	Associated amounts not offset on the balance sheet: Cash collateral furnished	Net amount
Derivatives	29,008	9,342	19,666	12,367	6,037	1,262
Repos/securities lending	8,277	-	8,277	8,238	-	39
Total	**37,285**	**9,342**	**27,943**	**20,605**	**6,037**	**1,301**

>> 78 Sale and repurchase agreements, securities lending

Transfers of financial assets

In 2018, the only transfers carried out by the DZ BANK Group in which the transferred assets remained on the balance sheet in their entirety were transfers under sale and repurchase agreements (repos), in which the DZ BANK Group was the original seller, and transfers as part of securities lending transactions.

Sale and repurchase agreements

The entities in the DZ BANK Group enter into sale and repurchase agreements using standard banking industry master agreements, notably the Global Master Repurchase Agreement (GMRA) and the master agreement provided by the International Securities Market Association (ISMA). Under these agreements, the buyer of the securities is permitted to make use of the securities without restriction (with no requirement for a prior counterparty default) and return securities of the same type. If the fair value of the securities received or transferred in such transactions increases or decreases, the entity concerned may be required to furnish additional collateral or may demand additional collateral.

As at the balance sheet date, the sale and repurchase agreements entered into by companies in the DZ BANK Group were exclusively genuine sale and repurchase agreements.

Sale and repurchase agreements in which DZ BANK acts as a seller (repos)

Under sale and repurchase agreements, bonds and other fixed-income securities classified as financial assets measured at fair value and financial assets measured at amortized cost are temporarily transferred to another party. As at the balance sheet date, the carrying amounts of securities subject to such sale and repurchase agreements were:

€ million	Dec. 31, 2018
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**2,097**
Financial assets mandatorily measured at fair value through profit or loss	**500**
Financial assets held for trading	500
Financial assets designated as at fair value through profit or loss	**800**
Investments	800
Financial assets measured at fair value through other comprehensive income	**797**
Investments	797
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**1,139**
Investments	1,139
Total	**3,236**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	Dec. 31, 2017
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**3,838**
Financial instruments held for trading	**900**
Financial assets held for trading	900
Fair value option	**236**
Investments	236
Available-for-sale financial assets	**2,702**
Investments	2,702
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**481**
Loans and receivables	**224**
Investments	224
Held-to-maturity investments	**257**
Investments	257
Total	**4,319**

As at the balance sheet date, additional collateral with a carrying amount of €83 million had been furnished in connection with sale and repurchase agreements (December 31, 2017: €49 million). This collateral is recognized under financial assets held for trading and under loans and advances to banks; it may be sold or repledged by the recipient even if the provider is not in default.

The carrying amounts of liabilities arising from sale and repurchase agreements were as follows:

€ million	Dec. 31, 2018
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT FAIR VALUE	**2,009**
Liabilities associated with financial assets mandatorily measured at fair value through profit or loss	**500**
Liabilities associated with financial assets held for trading	500
Liabilities associated with financial assets designated as at fair value through profit or loss	**749**
Liabilities associated with investments	749
Liabilities associated with financial assets measured at fair value through other comprehensive income	**760**
Liabilities associated with investments	760
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**1,087**
Liabilities associated with investments	1,087
Total	**3,096**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	Dec. 31, 2017
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT FAIR VALUE	**3,802**
Liabilities associated with financial assets held for trading	**900**
Liabilities associated with financial assets held for trading	900
Liabilities associated with financial assets classified as fair value option	**242**
Liabilities associated with investments	242
Liabilities associated with available-for-sale financial assets	**2,660**
Liabilities associated with investments	2,660
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**323**
Liabilities associated with loans and receivables	**117**
Liabilities associated with investments	117
Liabilities associated with held-to-maturity investments	**206**
Liabilities associated with investments	206
Total	**4,125**

Sale and repurchase agreements in which DZ BANK acts as the buyer (reverse repos)

In reverse repo transactions, bonds and other fixed-income securities are bought on a temporary basis. As at December 31, 2018, the fair value of securities involved in such transactions was €10,653 million (December 31, 2017: €10,138 million).

The receivables arising from these reverse repo transactions and reported under financial assets held for trading and under investments amounted to €10,642 million as at the balance sheet date (December 31, 2017: €10,138 million). As part of the collateral management requirements, the original seller provides the DZ BANK Group with additional collateral for reverse repo transactions in which the fair value of the securities purchased is less than the amounts receivable from the seller.

Securities lending

Securities lending transactions are undertaken on the basis of the Global Master Securities Lending Agreement (GMSLA) or on the basis of individual contractual arrangements. Under these agreements, the borrower of the securities is permitted to make use of the securities without restriction and return securities of the same type. If the fair value of the securities received or transferred in such transactions increases or decreases, the entity concerned may be required to furnish additional collateral or may demand additional collateral.

Securities lending

In securities lending transactions, shares and other variable-yield securities and/or bonds and other fixed-income securities are temporarily transferred to another party. All securities lent by the DZ BANK Group are classified as financial assets at fair value. As at the balance sheet date, the carrying amounts of securities lent under securities lending arrangements were as follows:

€ million	Dec. 31, 2018
Financial assets measured at fair value through profit or loss	**715**
Financial assets held for trading	715
Financial assets measured at fair value through other comprehensive income	**2,189**
Investments held by insurance companies	2,189
Total	**2,904**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	Dec. 31, 2017
Financial instruments held for trading	**245**
Financial assets held for trading	245
Available-for-sale financial assets	**2,589**
Investments held by insurance companies	2,589
Total	**2,834**

Collateral is provided or received as part of collateral management arrangements in connection with financial assets held for trading and investments held by insurance companies that are lent under securities lending agreements. In this process, all positions with the counterparty concerned are netted to determine the collateral to be provided or received.

As at the balance sheet date, additional collateral with a carrying amount of €9 million had been furnished in connection with securities lending (December 31, 2017: €9 million). This collateral is recognized under financial assets held for trading and may be sold or repledged by the recipient even if the provider is not in default.

Securities borrowing

The fair value of borrowed securities as at the balance sheet date was as follows:

€ million	Dec. 31, 2018	Dec. 31, 2017
Bonds and other fixed-income securities	2,377	1,699
Shares and other variable-yield securities	28	18
Total	**2,405**	**1,717**

In addition to securities subject to sale and repurchase agreements or that have been borrowed, bonds and other fixed-income securities and shares and other variable-yield securities are accepted as additional collateral. These may be sold or repledged as collateral, even if the recipient is not in default. As at December 31, 2018, the fair value of the additional collateral received was €23 million (December 31, 2017: €146 million).

Securities subject to a sale and repurchase or lending agreement that the recipient may sell or repledge as collateral with no requirement for a prior counterparty default

All securities transferred to another party by entities in the DZ BANK Group under sale and repurchase agreements or securities lending agreements may be sold or repledged as collateral by the recipient without restriction.

The carrying amounts of the individual balance sheet items concerned are as follows:

€ million	Dec. 31, 2018	Dec. 31, 2017
Financial assets held for trading	1,215	1,145
Investments	2,736	3,419
Investments held by insurance companies	2,189	2,589
Total	**6,140**	**7,153**

>> 79 Collateral

The breakdown of the carrying amount of financial assets pledged as collateral for liabilities is as follows:

€ million	Dec. 31, 2018	Dec. 31, 2017
Loans and advances to banks	56,023	53,907
Loans and advances to customers	220	409
Financial assets held for trading	10,752	9,814
Investments	1,013	1,002
Investments held by insurance companies	895	713
Total	**68,903**	**65,845**

Of the total financial assets pledged as collateral for liabilities, financial assets held for trading and investments with a carrying amount of €4,709 million (December 31, 2017: €3,147 million) may be sold or repledged as collateral by the recipient, even if the relevant entity in the DZ BANK Group is not in default.

Funds received from German federal and state development banks that are to be specifically used for the purposes of development program loans are mainly passed on to affiliated banks. The corresponding loans and advances to affiliated banks serve as collateral with the German federal and state development banks.

The loans and advances to customers pledged as collateral are building loans issued as part of KfW development program loans. The amounts due to Germany's KfW development bank are secured by assigning to KfW the receivables arising from the forwarding of the development loans together with the collateral furnished by the borrowers.

Securities and money market placements recognized as financial assets held for trading are pledged as collateral for exchange-traded forward transactions, non-exchange-traded derivatives and for forward forex transactions. These arrangements are governed by standard industry collateral agreements.

The investments pledged as collateral for the most part comprise securities furnished as collateral for transactions with central banks.

The investments held by insurance companies are predominantly securities pledged as collateral as part of the reinsurance business; this collateral may only be sold or pledged by the recipient in the event of default by the provider.

>>80 Items of income, expense, gains, and losses

Net gains and losses

The breakdown of net gains or net losses on financial instruments by IFRS 9 category for financial assets and financial liabilities is as follows:

€ million	2018
Financial instruments measured at fair value through profit or loss	**-326**
Financial instruments mandatorily measured at fair value through profit or loss	218
Contingent considerations in a business combination	-11
Financial instruments designated as at fair value through profit or loss	-533
Financial assets measured at fair value through other comprehensive income	**1,739**
Financial assets mandatorily measured at fair value through other comprehensive income	1,571
of which: gains and losses recognized in profit or loss	1,895
gains and losses recognized in other comprehensive income	-489
gains and losses reclassified on derecognition from cumulative other comprehensive income to profit or loss	165
Financial assets designated as at fair value through other comprehensive income	168
Financial assets measured at amortized cost	**5,964**
Financial liabilities measured at amortized cost	**-2,818**

Net gains or net losses comprise gains and losses on fair value measurement through profit or loss, impairment losses and reversals of impairment losses, and gains and losses on the sale or early repayment of the financial instruments concerned. These items also include interest income and interest expense, current income, income from profit-pooling, profit-transfer agreements, partial profit-transfer agreements, and expenses from the transfer of losses.

In connection with financial liabilities designated as at fair value through profit or loss, a gain of €35 million was recognized in other comprehensive income/loss and a loss of €639 million in profit or loss, which predominantly related to interest expense.

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	2017
Financial instruments at fair value through profit or loss	**1,310**
Financial instruments held for trading	1,143
Financial instruments designated as at fair value through profit or loss	167
Available-for-sale financial assets	**2,399**
Held-to-maturity investments	**24**
Loans and receivables	**5,662**
Financial liabilities measured at amortized cost	**-3,009**

Interest income and expense

The following total interest income and expense arose in connection with financial assets and financial liabilities that are not measured at fair value through profit or loss:

€ million	2018
Interest income	**7,468**
From financial assets measured at amortized cost including finance leases	6,074
From financial assets measured at fair value through other comprehensive income	1,394
Interest expense	**-2,818**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

€ million	2017
Interest income	7,933
Interest expense	-3,009

Fee and commission income and expenses

€ million	2018	2017
Fee and commission income		
from financial instruments not at fair value through profit or loss	192	172
from trust and other fiduciary activities	3,018	2,906
Fee and commission expenses		
for financial instruments not at fair value through profit or loss	-233	-210
for trust and other fiduciary activities	-1,290	-1,176

Gains and losses on derecognition of assets measured at amortized cost

The following gains and losses arose on derecognition of financial assets measured at amortized cost:

€ million	2018
Gains on derecognition of financial assets measured at amortized cost	**152**
Loans and advances to banks and customers	12
Investments	129
Investments held by insurance companies	11
Losses on derecognition of financial assets measured at amortized cost	**-20**
Loans and advances to banks and customers	-5
Investments	-3
Investments held by insurance companies	-12

The derecognition of the financial assets was attributable to a reduction in the duration of securities portfolios and to early redemptions in accordance with customer wishes.

>> 81 Derivatives

Derivatives are used primarily to hedge against market risk as well as for trading purposes. As at the balance sheet date, the breakdown of the portfolio of derivatives was as follows:

	Nominal amount					Fair value			
	Time to maturity			Total amount		Positive		Negative	
€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
INTEREST-LINKED CONTRACTS	134,082	387,474	496,534	1,018,090	883,075	14,788	16,014	14,617	16,820
OTC products									
Forward rate agreements	11,700	-	-	11,700	4,687	-	-	-	-
Interest-rate swaps	100,759	338,173	470,364	909,296	786,079	12,968	14,130	12,048	13,850
Interest-rate options – bought	6,341	22,371	9,797	38,509	36,024	1,323	1,405	110	112
Interest-rate options – written	8,397	26,291	16,373	51,061	49,182	391	332	2,459	2,857
Other interest-rate contracts	2,060	-	-	2,060	1,686	106	147	-	-
Exchange-traded products									
Interest-rate futures	4,825	639	-	5,464	5,417	-	-	-	1
CURRENCY-LINKED CONTRACTS	99,163	26,374	10,641	136,178	135,895	1,228	1,752	1,977	2,119
OTC products									
Cross-currency swaps (excl. portfolio hedging)	9,210	20,308	10,416	39,934	42,768	523	879	1,321	1,241
Forward forex transactions	77,522	4,765	172	82,459	85,216	643	775	590	822
Forex options – bought	5,844	319	-	6,163	3,299	23	28	15	16
Forex options – written	6,329	976	17	7,322	4,438	38	70	45	37
Exchange-traded products									
Forex futures	134	1	-	135	80	-	-	-	-
Forex options	124	5	36	165	94	1	-	6	3
SHARE-/INDEX-LINKED CONTRACTS	18,928	11,701	3,143	33,772	28,510	405	321	1,860	753
OTC products									
Share/index swaps	3,280	-	-	3,280	-	2	-	-	-
Share/index options – bought	11	54	2	67	3,788	3	61	-	-
Share/index options – written	116	186	-	302	416	-	-	42	13
Other share/index contracts	571	3,354	1,745	5,670	4,700	38	54	462	98
Exchange-traded products									
Share/index futures	510	84	14	608	876	-	-	-	-
Share/index options	14,440	8,023	1,382	23,845	18,730	362	206	1,356	642
OTHER CONTRACTS	3,263	3,430	10,230	16,923	17,205	52	41	78	45
OTC products									
Precious metal contracts (excl. gold derivatives)	-	-	-	-	29	-	1	-	-
Commodities contracts	35	4	-	39	90	-	-	4	1
Other contracts	2,902	3,370	10,211	16,483	16,561	49	37	64	32
Exchange-traded products									
Futures	138	1	-	139	184	-	2	1	-
Options	188	55	19	262	341	3	1	9	12
CREDIT DERIVATIVES	1,718	10,107	5,344	17,169	21,404	225	367	74	77
Protection buyer									
Credit default swaps	367	2,109	477	2,953	5,401	7	1	34	76
Protection seller									
Credit default swaps	1,351	7,977	4,808	14,136	15,927	211	358	40	1
Total return swaps	-	21	59	80	76	7	8	-	-
Total	257,154	439,086	525,892	1,222,132	1,086,089	16,698	18,495	18,606	19,814

The derivatives held at the balance sheet date involved the following counterparties:

	Fair value			
	Positive		Negative	
€ million	**Dec. 31, 2018**	Dec. 31, 2017	**Dec. 31, 2018**	Dec. 31, 2017
OECD central governments	72	85	35	46
OECD banks	13,967	15,902	16,250	17,929
OECD financial services institutions	172	193	367	246
Other companies, private individuals	2,421	2,305	1,855	1,475
Non-OECD banks	66	10	99	118
Total	**16,698**	**18,495**	**18,606**	**19,814**

The Union Investment Group has capital preservation commitments under section 1 (1) no. 3 of the German Personal Pension Plan Certification Act (AltZertG) amounting to €13,808 million (December 31, 2017: €12,708 million). These commitments are the total amount of the pension contributions paid by investors into the individual variants of the *UniProfiRente* and *UniProfiRente Select* products, which represent the minimum amount that must be made available at the start of the payout phase under statutory provisions, and the guaranteed payout amounts for existing contracts that are already in the payout phase. The group also has minimum payment commitments of €2,635 million (December 31, 2017: €3,814 million) in connection with genuine guarantee funds launched by fund management companies in the group.

>> 82 Hedge accounting

Risk management strategy

The DZ BANK Group enters into fair value hedges, cash flow hedges, and hedges of net investments in foreign operations in order to eliminate or reduce accounting mismatches as part of its risk management strategy.

Hedged items

Fair value hedges are used in the hedging of interest-rate risk. In this context, interest-rate risk refers to the risk of an adverse change in the fair value of fixed-income financial instruments caused by a change in market interest rates. The hedged financial assets are loans and advances to banks and customers that are categorized as ‘financial assets measured at amortized cost’ or that arise in connection with finance leases. Bonds in the category ‘financial assets measured at fair value through other comprehensive income’ are also designated as hedged items in fair value hedges. Hedged financial liabilities are deposits from banks and customers, mortgage Pfandbriefe, other bonds, and subordinated liabilities, all of which are measured at amortized cost. Interest-rate risk portfolios under both assets and liabilities are identified and designated as hedged items in portfolio hedges. Fair value hedges are also used in connection with loan commitments given.

Cash flow hedges are designated in connection with hedging exposure to currency risk. Currency risk forms part of market risk and relates to those hedged items denominated in foreign currency. It refers to the risk that financial position and financial performance could be adversely impacted by fluctuations in exchange rates.

Hedged items are expected receipt of interest payments and fee and commission income, together with payments made for administrative expenses, in each case in a foreign currency different from the reporting currency (euros).

Hedges of net investments in foreign operations are designated in connection with hedging exposure to currency risk. The hedged items are investments in joint ventures and associates accounted for using the equity method and denominated in foreign currency.

Hedging instruments

Swaps and swaptions are designated as hedging instruments in fair value hedges of financial assets and financial liabilities.

Forward forex transactions are used as hedging instruments in cash flow hedges and hedges of net investments in foreign operations.

In the DZ BANK Group, hedging instruments are reported under hedging instruments (positive fair values) and hedging instruments (negative fair values).

Assessment of hedge effectiveness

The prerequisite for recognizing a hedge is that the hedge must be highly effective on both a prospective and retrospective basis. Highly effective in this case means that the changes in fair value or expected cash flows for the hedged items must be almost fully offset by the changes in fair value or expected cash flows for the hedging instruments. In the case of the individual hedges entered into by the DZ BANK Group, this is achieved by ensuring that the main features of hedged items that influence their value match those of the hedging instruments and that there is a hedging ratio of 100 percent (1:1 hedging). In portfolio hedges, there is no direct economic relationship between hedged item and hedging instrument. An individual hedging ratio based on the sensitivities of the hedged items and hedging instruments is used to ensure that the respective changes in fair value more or less balance each other out.

Hedge effectiveness must be assessed and documented at every balance sheet date as a minimum.

For individual hedges accounted for in application of the rules under IFRS 9, any hedge ineffectiveness is quantified retrospectively and recognized in profit or loss. IFRS 9 does not define effectiveness in terms of a mandatory range of values. If a hedge no longer satisfies the effectiveness criterion in relation to the hedge ratio, the hedge ratio must be adjusted (recalibration). If it is no longer possible to adjust the hedge ratio or if the risk management objective for the hedge has changed, the hedge must be de-designated.

Portfolio hedges that continue to be accounted for in application of the rules under IAS 39 are deemed to be highly effective if the changes in the fair value of the hedged items are offset by the changes in the fair value of the hedging instruments within the range of 80 percent to 125 percent specified by IAS 39. If this assessment identifies that a hedge has not achieved the required effectiveness, the hedge must be reversed retrospectively to the balance sheet date of the last assessment in which the hedge was found to be effective. In 2017, these rules were also applied to individual hedges.

In the case of fair value hedges, prospective effectiveness is assessed by using sensitivity analyses (based on the basis point value method) and linear regression analysis; it is also assessed qualitatively with the critical-terms-match method. Retrospective effectiveness is assessed primarily by using the dollar offset method, a noise threshold value, and linear regression analysis. In these methods, the cumulative changes in the fair value of the hedged items attributable to the hedged risk are compared with the changes in the fair value of the hedging instruments.

The critical-terms-match method is used to assess the prospective effectiveness of cash flow hedges on a qualitative basis. The retrospective and prospective effectiveness of cash flow hedges is also assessed quantitatively by comparing the changes in the present value of the expected or actual cash flows for the hedged items against the changes in the fair values of the hedging instruments.

The prospective effectiveness of hedges of net investments in foreign operations is assessed by means of the critical-terms-match method and sensitivity analyses. The dollar offset method is used for the retrospective assessment of effectiveness.

Gains and losses and hedge ineffectiveness from hedge accounting

In hedge accounting, hedge ineffectiveness arises when the changes in the fair value of hedging instruments do not fully offset the changes in the fair value of the hedged items. The ineffective portions of hedges are recognized in profit or loss under other gains and losses on valuation of financial instruments.

Hedge ineffectiveness can arise in fair value hedges of interest-rate risk. This can occur where the changes in the fair values of hedged items and hedging instruments do not balance each other out in full because of differences in maturities, cash flows, and/or discount rates.

Extent of risks managed by the use of hedges

The table below presents information on the volume of hedged items and hedging instruments designated as hedges for the purposes of hedging interest-rate risk:

AS AT DECEMBER 31, 2018

€ million	Carrying amount	Nominal amount of hedging instruments	Fair value hedge adjustments included in carrying amount of hedged items		Fair value changes as basis for measuring hedge ineffectiveness for the period
			Existing hedges	Terminated hedges	
Assets	**68,435**	**18,822**	**612**	**29**	**-517**
Loans and advances to banks	73		2	-	-1
Loans and advances to customers	2,180		22	-1	33
Investments	3,823		70	3	8
Non-current assets and disposal groups classified as held for sale	2,660		-9	4	10
Portfolio hedges of interest-rate risk	58,816		527	23	-37
Hedging instruments (positive fair values)	883	18,822			-530
Liabilities	**34,469**	**60,817**	**188**	**163**	**1,640**
Deposits from banks	1,089		9	1	14
Deposits from customers	5,502		208	-6	-8
Debt certificates issued including bonds	447		-	5	-4
Subordinated capital	34		-	-	-
Portfolio hedges of interest-rate risk	24,881		-29	163	44
Hedging instruments (negative fair values)	2,516	60,817			1,594

In the course of 2018, all cash flow hedges designated in connection with hedging exposure to currency risk were discontinued. The ineffectiveness measured from the countervailing changes in fair value in respect of the corresponding hedged items and hedging instruments amounted to €5 million.

Of the gains and losses reclassified to the income statement, a loss of €2 million was recognized under net interest income, a gain of €1 million under administrative expenses, and a loss of €2 million under net fee and commission income. In 2017 under IAS 39, gains of €20 million in connection with cash flow hedges had been recognized in other comprehensive income/loss. Losses totaling €2 million reclassified to the income statement were predominantly recognized under administrative expenses. All cash flows hedged in 2017 were received or paid out in the year under review and were thus required to be recognized in profit or loss.

As at the reporting date, the DZ BANK Group accounted for hedges of net investments in foreign operations that had been designated in connection with hedging exposure to currency risk. Hedging instruments with a total nominal amount of €173 million, but only a negligible carrying amount, gave rise to changes in fair value of approximately €1 million. On the other side of the hedging equation, there were only small changes in the fair value of the hedged items. This resulted in hedging ineffectiveness of around €1 million, which was recognized in profit or loss under other gains and losses on valuation of financial instruments.

Effects of hedging instruments on cash flows

The following tables show the residual maturities of the hedging instruments entered into by the DZ BANK Group by type of risk:

Interest-rate risk

AS AT DECEMBER 31, 2018

	≤ 1 month	>1 month – 3 months	>3 months – 1 year	>1 year – 5 years	> 5 years
Nominal amount (€ million)	272	557	3,102	33,252	42,456
Average hedged interest rate (%)	3.08	1.60	1.63	1.72	2.86

Currency risk

AS AT DECEMBER 31, 2018

	≤ 1 month	>1 month – 3 months	>3 months – 1 year	>1 year – 5 years	> 5 years
Nominal amount (€ million)	173	-	-	-	-
Average hedged US dollar rate	1.14	-	-	-	-

Reconciliation of hedge accounting effects to equity components by type of risk

The following table shows a reconciliation of the effects from hedge accounting to corresponding components of equity in 2018. The relevant effects were those from cash flow hedges and from hedges of net investments in foreign operations. These types of hedges were used only in connection with hedging the exposure to currency risk.

€ million	Cash flow hedge reserve	Reserve from hedges of net investments in foreign operations
	Currency risk	Currency risk
Balance as at Jan. 1, 2018	5	-15
GAINS AND LOSSES ON CASH FLOW HEDGES	**-6**	
Gains (+)/losses (-) arising during the reporting period	**-3**	
Gains (-)/losses (+) reclassified to the income statement	**-3**	
Amount by which the hedged item has impacted the income statement	-3	
GAINS AND LOSSES ON HEDGES OF NET INVESTMENTS IN FOREIGN OPERATIONS		**-6**
Gains (+)/losses (-) arising during the reporting period		**-13**
Gains (-)/losses (+) reclassified to the income statement		**7**
Amount by which the hedged item has impacted the income statement		7
OTHER ADJUSTMENTS	**1**	**-**
INCOME TAXES	**-**	**8**
Balance as at Dec. 31, 2018	-	-13

>> 83 Nature and extent of risks arising from financial instruments and insurance contracts

With the exception of the qualitative and quantitative disclosures pursuant to IFRS 7.35-36, the disclosures on the nature and extent of risks arising from financial instruments (IFRS 7.31-42) and insurance contracts (IFRS 4.38-39A) are included in the opportunity and risk report within the group management report. The disclosures pursuant to IFRS 7.35-36 can be found in the notes to the consolidated financial statements. Disclosures on the maturity analysis in accordance with IFRS 7.39(a) and (b) and IFRS 4.39(d)(i), together with disclosures on the claims rate trend for direct non-life insurance business and for the inward reinsurance business in accordance with IFRS 4.39(c)(iii), can be found within the notes to the consolidated financial statements in notes 41 and 84.

Credit risk management practices

The rules for recognizing loss allowances are based on the calculation of expected losses for loans and advances to banks, loans and advances to customers, investments, investments held by insurance companies, and other assets. Loss allowances are recognized only for those financial assets that are not measured at fair value through profit or loss. These are:

– Financial assets measured at amortized cost and
– Debt instruments held as financial assets measured at fair value through other comprehensive income.

The impairment rules are also applied to:

– Financial guarantee contracts and loan commitments that fall within the scope of IFRS 9 and are not recognized at fair value through profit or loss,

- Lease receivables, and
- Trade receivables and contract assets pursuant to IFRS 15.

In accordance with IFRS 9, the three-stage approach is used, additionally taking POCI assets into account, to determine the expected losses:

- Stage 1: For financial assets whose credit risk has not increased significantly since initial recognition and that were not impaired upon initial recognition, the 12-month expected credit loss is recognized. Interest is recognized on the basis of the gross carrying amount.
- Stage 2: For financial assets whose credit risk has increased significantly since initial recognition, the loss allowances are determined in the amount of the assets' lifetime expected credit losses. Interest is recognized on the basis of the gross carrying amount.
- Stage 3: Financial assets are classified as impaired if one or more events have occurred with an adverse impact on the estimated future cash flows of these financial assets or they are deemed to be in default pursuant to article 178 of the Capital Requirements Regulation (CRR). The definition therein is the same as the DZ BANK Group's definition of default. Here too, loss allowances are recognized in the amount of the lifetime expected credit losses. Interest income is calculated on the amortized cost after loss allowances using the effective interest method.
- POCI assets: Financial assets that are already deemed impaired upon initial recognition are not assigned to the three-stage model and are reported separately. Credit-impaired financial assets are initially recognized at fair value rather than at their gross carrying amount. Interest is therefore recognized using a risk-adjusted effective interest rate.

The review of whether the credit risk of financial assets, financial guarantee contracts, and loan commitments has increased significantly since initial recognition is carried out on an ongoing basis, but particularly on every balance sheet date. The assessment is conducted both for individual financial assets and for portfolios of assets using quantitative and qualitative analysis. As a rule, quantitative analysis looks at the expected credit risk over the entire residual life of the financial instruments in question. If analysis based on one year does not produce a significantly different outcome, the change in the expected loss on a one-year basis is used in some cases for reasons of simplification. In both scenarios, macroeconomic information is also factored in. To this end, the credit risk as at the balance sheet date for the residual life is compared with the assets' credit risk over the same maturity period estimated at the time of initial recognition. The thresholds that indicate a significant increase in credit risk are determined for each portfolio separately relative to the portfolio's past migrations of default probability. Internal risk measurement systems, external credit ratings, and risk forecasts are also used to assess the credit risk of financial assets. This test has been extended to look at qualitative criteria that increase credit risk unless these criteria have already been incorporated into the probability of default. In general, allocation to stage 2 is assumed no later than when payments become 30 days past due. Depending on the business line, either this criterion has been defined as an additional backstop or the past-due period is already factored into the credit rating and scoring system. As a rule, however, financial assets are allocated to stage 2 well before payments become 30 days past due. Exceptions are only made in individual cases if it has been shown that there is no significant increase in credit risk, despite payments being 30 days past due.

Securities with low credit risk are not tested to ascertain whether credit risk has increased significantly. Investment-grade securities are thus assigned to stage 1. This exemption does not apply to loans and receivables.

If, on the balance sheet date, it is found that there is no longer a significant increase in credit risk compared with previous balance sheet dates, the financial assets in question are transferred back to stage 1 and the loss allowances are brought back down to the level of the 12-month expected credit loss. In the case of a transfer back from stage 3, the default status is only revoked after the necessary period of good conduct in accordance with the regulatory definition.

Expected losses are calculated as the probability-weighted present value of the expected defaults over the estimated lifetime from default events within the next 12 months for assets assigned to stage 1 of the impairment model and from default events over the entire residual life for assets assigned to stages 2 and 3. The expected losses are discounted with their original effective interest rate. This calculation uses the regulatory model (probability of default, loss given default, and expected loan amount at the time of default), with adjustments to satisfy the requirements of IFRS 9. The estimated probability of default incorporates both historical and forward-looking default information. This is applied, for example when loss allowances are determined within stage 2, in the form of shifts in the default probabilities calculated using statistical means. The calculation of the expected loss for specific exposures in stage 3 does not use this type of fundamental parameter-based approach but rather draws on individual expert appraisals of the achievable cash flows and probability-weighted scenarios at individual transaction level.

Loss histories, adjusted to reflect forecast future defaults, serve as the basis for determining expected losses. A macroeconomic scenario based on empirical estimates is also factored in. This scenario specifically looks at future trends in the labor market, interest rates in the money market, changes in GDP, inflation, and commercial real estate prices. The methods and assumptions, including the forecasts, are validated regularly.

For the purpose of calculating loss allowances for portfolios, the portfolios are grouped according to shared credit risk characteristics, e.g. type of asset, credit rating, date of origination, residual life, industry, and origin of the borrower.

Directly recognized impairment losses reduce the carrying amounts of assets directly. Unlike loss allowances, which are estimates, directly recognized impairment losses are specified in an exact amount (e.g. as a result of the notification of an insolvency ratio). As a rule, directly recognized impairment losses are recognized after all recovery and enforcement measures have been completed. Directly recognized impairment losses are also recognized for insignificant amounts.

Loss allowances and gross carrying amounts

In the DZ BANK Group, loss allowances are recognized for the classes ‘financial assets measured at fair value’, ‘financial assets measured at amortized cost’, ‘finance leases’, and ‘financial guarantee contracts and loan commitments’ in the amount of the expected credit losses. Trade receivables and contract assets that fall within the scope of IFRS 15 are assigned to the ‘financial assets measured at amortized cost’ class.

Financial assets measured at fair value

€ million	Stage 1		Stage 2		Stage 3	
	Loss allowances	Fair value	Loss allowances	Fair value	Loss allowances	Fair value
Balance as at Jan. 1, 2018	9	83,114	10	402	33	26
Addition/increase in loan drawdowns	5	20,679	-	-	-	-
Change to financial assets due to transfer between stages	3	198	-3	-198	-	-
Transfer from stage 2	3	198	-3	-198	-	-
Use of loss allowances	-1	-	-	-	-5	-
Derecognitions and repayments	-5	-22,283	-1	-29	-	-6
Changes to models/risk parameters	-5	-	-5	-	-	-
Additions	6	-	1	-	-	-
Reversals	-11	-	-6	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-1,689	-	7	-	5
Exchange differences and other changes	1	50	-1	-	-1	-
Changes in scope of consolidation	-	-1	-	-	-	-
Deferred taxes	1		3		2	
Balance as at Dec. 31, 2018	**8**	**80,068**	**3**	**182**	**29**	**25**

Financial assets measured at amortized cost

€ million	Stage 1		Stage 2		Stage 3		POCI assets	
	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount
Balance as at Jan. 1, 2018	233	315,853	212	12,364	2,377	5,350	10	32
Addition/increase in loan drawdowns	163	11,201,850	26	10,596	386	2,500	7	61
Change to financial assets due to transfer between stages	141	-541	-206	254	70	287	-	-
Transfer from stage 1	-50	-5,791	44	5,604	6	187	-	-
Transfer from stage 2	169	5,070	-286	-5,617	114	547	-	-
Transfer from stage 3	22	180	36	267	-50	-447	-	-
Use of loss allowances/directly recognized impairment losses on gross carrying amounts	-	-1	-1	-	-752	-36	-	-2
Reclassifications to non-current assets and disposal groups classified as held for sale	-5	-5,847	-	-106	-13	-40	-	-
Derecognitions and repayments	-104	-11,181,684	-72	-15,013	-482	-3,390	-13	-88
Changes to models/risk parameters	-196	-	235	-	240	-	-	-
Additions	127	-	357	-	745	-	12	-
Reversals	-323	-	-122	-	-505	-	-12	-
Modification gains	-	1	-	-	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-634	-	133	-	26	-	-
Positive changes in value of POCI assets								18
Exchange differences and other changes	-1	1,221	2	-364	35	-459	-1	1
Changes in scope of consolidation	-	8	-	-	-	-	-	-
Balance as at Dec. 31, 2018	**231**	**330,226**	**196**	**7,864**	**1,861**	**4,238**	**3**	**22**

The undiscounted expected credit losses on purchased or originated credit-impaired assets that were recognized for the first time during the reporting period totaled €92 million.

Finance leases

€ million	Stage 1		Stage 2		Stage 3	
	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount
Balance as at Jan. 1, 2018	6	2,595	10	304	18	51
Addition/increase in loan drawdowns	7	870	17	12	22	23
Change to finance leases due to transfer between stages	13	-8	-4	10	-14	-3
Transfer from stage 1	-1	-199	1	175	-	24
Transfer from stage 2	3	150	-15	-190	15	40
Transfer from stage 3	11	41	10	25	-29	-67
Use of loss allowances/directly recognized impairment losses on gross carrying amounts	-	-	-	-	-2	-
Reclassifications to non-current assets and disposal groups classified as held for sale	-1	-619	-1	-48	-2	-4
Derecognitions and repayments	-21	-1,027	-13	-93	-14	-44
Changes to models/risk parameters	-	-	-1	-	-	-
Reversals	-	-	-1	-	-	-
Exchange differences and other changes	-	-	-	1	-	-
Balance as at Dec. 31, 2018	**4**	**1,811**	**8**	**186**	**8**	**23**

Financial guarantee contracts and loan commitments

	Stage 1		Stage 2		Stage 3	
€ million	Loss allowances	Nominal amount	Loss allowances	Nominal amount	Loss allowances	Nominal amount
Balance as at Jan. 1, 2018	38	55,702	8	627	147	469
Addition/increase in loan drawdowns	70	33,294	18	415	24	41
Change to financial guarantee contracts and loan commitments due to transfer between stages	4	-317	15	250	-19	67
Transfer from stage 1	-5	-733	5	694	-	42
Transfer from stage 2	8	412	-11	-451	3	36
Transfer from stage 3	1	4	21	7	-22	-11
Reclassifications to liabilities included in disposal groups classified as held for sale	-	-549	-	-	-	-
Derecognitions and repayments	-49	-27,379	-35	-458	-74	-329
Changes to models/risk parameters	-28	-	3	-	38	-
Additions	25	-	33	-	65	-
Reversals	-53	-	-30	-	-27	-
Amortization, fair value changes, and other changes in measurement	-	74	-	-	-	-
Exchange differences and other changes	-	-38	-	-	2	2
Balance as at Dec. 31, 2018	**35**	**60,787**	**9**	**834**	**118**	**250**

Contractual modifications and derecognitions

The negotiation or modification of contractually agreed cash flows relating to a financial asset leads to a modified asset. The modification of contractually agreed cash flows can lead to the derecognition of the existing financial asset and the recognition of a new one. In the case of modifications that do not lead to the derecognition of the financial asset (non-substantial contractual modifications), the modifications of the contractually agreed cash flows are recognized as a modification gain or loss in the amount of the difference between the originally agreed cash flows and the modified cash flows discounted with the original effective interest rate. If substantial modifications are made to the contract for a financial asset, the asset is derecognized and then recognized as a new asset. The POCI asset rules apply to impaired assets (stage 3). If contractual modifications for a financial asset do not have a substantial impact, the asset is reviewed to ascertain whether credit risk has increased significantly since initial recognition. The assessment to determine whether there has been a significant deterioration in the credit quality of modified assets compares the probability of default based on the modified cash flows and on the residual maturity as at the reporting date against the probability of default based on the original cash flows and residual maturity on initial recognition.

In 2018, contractually agreed payments in relation to financial assets allocated to stage 2 of the impairment model with an amortized cost of €170 million were modified to take account of changes in contractual cash flows.

Maximum exposure to credit risk

The DZ BANK Group is exposed to credit risk from financial instruments. The maximum exposure to credit risk is represented by the fair value, amortized cost, or nominal amount of financial instruments. The following collateral is held to reduce the exposure to this maximum credit risk:

AS AT DECEMBER 31, 2018

€ million	Maximum exposure to credit risk	
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**139,120**	
Financial assets measured at fair value through profit or loss	**58,845**	
Financial assets mandatorily measured at fair value through profit or loss	49,078	
Financial assets designated as at fair value through profit or loss	9,767	
Financial assets measured at fair value through other comprehensive income	**80,275**	
Financial assets mandatorily measured at fair value through other comprehensive income	80,275	
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**340,592**	
of which: credit-impaired		
FINANCE LEASES	**2,000**	
of which: credit-impaired		
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**62,271**	
of which: credit-impaired		

€ million	Maximum credit risk	
Non-current assets and disposal groups classified as held for sale from financial assets measured at fair value	404	
Non-current assets and disposal groups classified as held for sale from financial assets measured at amortized cost	5,960	
Liabilities included in disposal groups classified as held for sale from financial guarantee contracts and loan commitments	549	

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	1,141	**-**	**303**	**39**	**2,241**	**162**
	608	**-**	**31**	**39**	**12**	**40**
	180	-	31	39	12	16
	428	-	-	-	-	24
	533	**-**	**272**	**-**	**2,229**	**122**
	533	-	272	-	2,229	122
	1,014	**2,332**	**96,178**	**1,915**	**6,405**	**18,981**
	24	183	401	170	24	771
	14	**-**	**-**	**10**	**1**	**7**
	-	-	-	6	-	1
	233	**908**	**6,368**	**1,245**	**3**	**150**
	1	25	4	7	-	10

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	4	-	-	-	-	327
	56	-	-	-	37	5,583
	9	-	-	-	4	246

A range of different collateral is held in the traditional lending business to reduce the exposure to the maximum credit risk. Specifically, this collateral includes mortgages on residential and commercial real estate, registered ship and aircraft mortgages, guarantees (including indemnities and credit insurance), financial security (e.g. certain fixed-income securities, shares, and investment fund units), blanket and individual assignments of trade receivables, and various types of physical collateral. Generally, cash collateral, high-quality government bonds, and Pfandbriefe are held in the trading business in accordance with the collateral policy to reduce the risk attaching to OTC derivatives.

As a result of changes in the credit risk, the fair value of financial assets designated as at fair value through profit or loss had declined by €3 million at the end of 2018 (December 31, 2017: increase of €16 million). As at the balance sheet date, the cumulative amount by which the fair value had changed owing to changes in the credit risk was unchanged (December 31, 2017: increase of €6 million).

The credit risk associated with financial assets designated at fair value was mitigated as at the reporting date by financial guarantee contracts with a value of €390 million (December 31, 2017: €583 million) furnished by affiliated banks.

Credit risk concentrations

The credit risk from financial instruments to which the DZ BANK Group is exposed is broken down by sector using the Deutsche Bundesbank industry codes and by geographic region using the annually updated country groups published by the International Monetary Fund (IMF). Volumes, measured on the basis of fair values and gross carrying amounts of financial assets and the credit risk from financial guarantee contracts and loan commitments, are broken down using the following credit rating classes:

- Investment grade: equates to internal rating classes 1A–3A
- Non-investment grade: equates to internal rating classes 3B–4E
- Default: equates to internal rating classes 5A–5E
- Not rated: no rating necessary or not classified

'Not rated' comprises counterparties for which a rating classification is not required.

AS AT DECEMBER 31, 2018

€ million		Financial sector	Public sector	Corporates	Retail	Industry con-glomerates
Investment grade						
Fair value	Stage 1	37,120	27,267	11,931	259	702
Gross carrying amount	Stage 1	149,644	21,409	49,012	35,950	4,597
	Stage 2	24	6	298	461	-
Nominal amount	Stage 1	22,061	209	19,310	6,203	1,791
	Stage 2	93	-	129	-	166
Non-investment grade						
Fair value	Stage 1	456	948	738	-	1
	Stage 2	-	143	-	38	1
Gross carrying amount	Stage 1	6,264	146	19,740	31,071	110
	Stage 2	44	224	1,818	3,768	51
	Stage 3	-	-	1,517	13	-
Nominal amount	Stage 1	363	-	5,904	339	52
	Stage 2	40	-	291	1	-

AS AT DECEMBER 31, 2018

€ million		Financial sector	Public sector	Corporates	Retail	Industry con-glomerates	Other
Default							
Fair value	Stage 3	-	-	-	25	-	-
Gross carrying amount	Stage 3	47	-	1,469	653	169	-
	POCI assets	-	-	10	-	-	-
Nominal amount	Stage 2	-	-	1	-	-	-
	Stage 3	27	-	213	-	-	-
Not rated							
Fair value	Stage 1	165	162	67	-	252	-
Gross carrying amount	Stage 1	2,527	947	1,128	8,096	1,380	16
	Stage 2	512	42	242	385	142	33
	Stage 3	8	-	110	275	-	-
	POCI assets	-	-	-	12	-	-
Nominal amount	Stage 1	945	9	914	2,001	686	-
	Stage 2	42	-	56	15	-	-
	Stage 3	-	-	10	-	-	-

AS AT DECEMBER 31, 2018

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Investment grade						
Fair value	Stage 1	24,206	46,554	1,305	2,150	3,064
Gross carrying amount	Stage 1	229,372	28,330	727	1,527	656
	Stage 2	754	33	1	1	-
Nominal amount	Stage 1	44,840	4,178	148	408	-
	Stage 2	199	188	1	-	-
Non-investment grade						
Fair value	Stage 1	888	1,025	-	155	75
	Stage 2	-	182	-	-	-
Gross carrying amount	Stage 1	45,428	4,183	1,492	6,228	-
	Stage 2	4,584	509	130	682	-
	Stage 3	7	748	236	539	-
Nominal amount	Stage 1	4,943	809	68	838	-
	Stage 2	277	10	17	28	-

AS AT DECEMBER 31, 2018

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Default						
Fair value	Stage 3	1	24	-	-	-
Gross carrying amount	Stage 3	1,792	269	8	269	-
	POCI assets	10	-	-	-	-
Nominal amount	Stage 2	1	-	-	-	-
	Stage 3	139	65	-	36	-
Not rated						
Fair value	Stage 1	68	421	-	-	157
Gross carrying amount	Stage 1	11,797	1,989	18	179	111
	Stage 2	968	320	1	67	-
	Stage 3	353	25	-	15	-
	POCI assets	11	1	-	-	-
Nominal amount	Stage 1	3,949	539	-	67	-
	Stage 2	103	10	-	-	-
	Stage 3	10	-	-	-	-

>> 84 Maturity analysis

AS AT DECEMBER 31, 2018

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Financial assets	**85,021**	**14,793**	**36,465**	**155,003**	**223,603**	**18,180**
Cash and cash equivalents	51,459	-	-	-	-	-
Loans and advances to banks	9,960	4,452	10,469	36,932	34,014	1
Loans and advances to customers	14,971	6,400	16,567	68,569	85,281	-
Derivatives used for hedging (positive fair values)	2	1	35	319	524	-
Financial assets held for trading	5,425	2,393	4,072	8,041	16,698	1,415
of which: non-derivative financial assets held for trading	5,166	2,020	3,182	3,876	6,678	1,415
derivatives (positive fair values)	259	373	890	4,165	10,020	-
Investments	437	632	2,556	21,326	25,323	2,016
Investments held by insurance companies	544	882	2,722	19,425	61,710	14,724
of which: non-derivative investments held by insurance companies	484	861	2,708	19,398	61,657	14,720
derivatives (positive fair values)	60	21	14	27	53	4
Other assets	2,223	33	44	391	53	24
Financial liabilities	**-100,343**	**-17,616**	**-25,756**	**-91,979**	**-107,463**	**-63,875**
Deposits from banks	-56,085	-5,364	-9,295	-40,698	-35,025	-1,652
Deposits from customers	-33,723	-1,851	-4,741	-9,245	-26,993	-60,519
Debt certificates issued including bonds	-4,965	-8,143	-6,604	-21,310	-24,507	-
Derivatives used for hedging (negative fair values)	-8	-15	-61	-660	-1,779	-
Financial liabilities held for trading	-4,172	-1,770	-4,244	-17,114	-17,179	-388
of which: non-derivative financial liabilities held for trading	-4,030	-1,321	-2,279	-11,925	-8,956	-388
derivatives (negative fair values)	-142	-449	-1,965	-5,189	-8,223	-
Other liabilities	-1,346	-423	-123	-1,231	-1,212	-1,291
of which: non-derivative other liabilities	-1,342	-401	-122	-1,140	-975	-1,289
derivatives (negative fair values)	-4	-22	-1	-91	-237	-2
Subordinated capital	-44	-50	-688	-1,721	-768	-25
Financial guarantee contracts and loan commitments	**-59,531**	**-134**	**-282**	**-324**	**-290**	**-1,310**
Financial guarantee contracts	-7,251	-24	-15	-141	-105	-65
Loan commitments	-52,280	-110	-267	-183	-185	-1,245

AS AT DECEMBER 31, 2017

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Financial assets	**76,887**	**16,493**	**36,446**	**150,490**	**228,237**	**18,247**
Cash and cash equivalents	43,637[1]	-	-	-	-	-
Loans and advances to banks	10,956[1]	3,272	9,627	35,424	34,524	2
Loans and advances to customers	13,723	6,046	15,716	64,917	91,512	15
Derivatives used for hedging (positive fair values)	5	4	71	271	742	-
Financial assets held for trading	5,813	4,947	3,103	6,501	16,138	1,563
of which: non-derivative financial assets held for trading	5,284	4,456	1,998	2,411	6,388	1,563
derivatives (positive fair values)	529	491	1,105	4,090	9,750	-
Investments	1,243	1,247	4,409	23,543	27,431	1,637
Investments held by insurance companies	766	898	3,431	19,507	57,857	15,000
of which: non-derivative investments held by insurance companies	675	875	3,418	19,480	57,813	14,989
derivatives (positive fair values)	91	23	13	27	44	11
Other assets	744	79	89	327	33	30
Financial liabilities	**-90,240**	**-21,621**	**-25,016**	**-92,818**	**-109,530**	**-60,962**
Deposits from banks	-52,068	-4,413	-8,867	-39,730	-38,217	-1,421
Deposits from customers	-28,664	-3,189	-3,031	-9,831	-30,678	-57,146
Debt certificates issued including bonds	-4,492	-10,797	-8,401	-23,954	-19,757	-336
Derivatives used for hedging (negative fair values)	-2	-15	-42	-908	-1,995	-
Financial liabilities held for trading	-4,322	-2,819	-3,756	-14,551	-16,595	-515
of which: non-derivative financial liabilities held for trading	-4,193	-2,603	-2,240	-9,778	-8,138	-515
derivatives (negative fair values)	-129	-216	-1,516	-4,773	-8,457	-
Other liabilities	-610	-369	-294	-1,113	-1,254	-1,539
of which: non-derivative other liabilities	-605	-342	-281	-1,009	-1,038	-1,539
derivatives (negative fair values)	-5	-27	-13	-104	-216	-
Subordinated capital	-82	-19	-625	-2,731	-1,034	-5
Financial guarantee contracts and loan commitments	**-37,071**	**-113**	**-398**	**-439**	**-321**	**-2,163**
Financial guarantee contracts	-6,621	-51	-54	-149	-66	-55
Loan commitments	-30,450	-62	-344	-290	-255	-2,108

1 Amount restated (see note 2).

The maturity analysis shows contractually agreed cash inflows with a plus sign and contractually agreed cash outflows with a minus sign. In the case of financial guarantee contracts and loan commitments, the potential cash outflows are shown.

The contractual maturities do not match the estimated actual cash inflows and cash outflows, especially in the case of financial guarantee contracts and loan commitments. The management of liquidity risk based on expected and unexpected cash flows is described in the opportunity and risk report within the group management report.

>> 85 Exposures to countries particularly affected by the sovereign debt crisis

The table below shows the carrying amounts of the DZ BANK Group's exposures to bonds issued by governments and public authorities in countries particularly affected by the sovereign debt crisis, broken down into the categories applied to financial instruments under IFRS 9.

	Dec. 31, 2018	
€ million	Carrying amount	Fair value
Portugal	**718**	**731**
Financial assets measured at fair value through profit or loss	347	347
Financial assets measured at fair value through other comprehensive income	322	322
Financial assets measured at amortized cost	49	62
Italy	**4,937**	**4,982**
Financial assets measured at fair value through profit or loss	1,734	1,734
Financial assets measured at fair value through other comprehensive income	2,683	2,683
Financial assets measured at amortized cost	520	565
Spain	**1,925**	**1,942**
Financial assets measured at fair value through profit or loss	1,122	1,122
Financial assets measured at fair value through other comprehensive income	563	563
Financial assets measured at amortized cost	240	257
Total	**7,580**	**7,655**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

	Dec. 31, 2017	
€ million	Carrying amount	Fair value
Portugal	**671**	**719**
Fair value option	378	378
Held-to-maturity investments	244	280
Loans and receivables	49	61
Italy	**6,054**	**6,025**
Financial instruments held for trading	20	20
Fair value option	1,348	1,348
Available-for-sale financial assets	4,216	4,216
Held-to-maturity investments	470	441
Spain	**2,211**	**2,211**
Financial instruments held for trading	211	211
Fair value option	1,110	1,110
Available-for-sale financial assets	700	700
Held-to-maturity investments	190	190
Total	8,936	8,955

Bonds issued by countries particularly affected by the sovereign debt crisis and held as part of the insurance business are only recognized in the proportion attributable to the shareholders of the DZ BANK Group.

Fair value hierarchy

The recurring fair value measurements as measured and recognized on the balance sheet are assigned to the levels of the fair value hierarchy as follows:

	Dec. 31, 2018		
€ million	Level 1	Level 2	Level 3
Portugal	**669**	**-**	**-**
Financial assets measured at fair value through profit or loss	347	-	-
Financial assets measured at fair value through other comprehensive income	322	-	-
Italy	**4,183**	**211**	**23**
Financial assets measured at fair value through profit or loss	1,715	19	-
Financial assets measured at fair value through other comprehensive income	2,468	192	23
Spain	**1,347**	**282**	**56**
Financial assets measured at fair value through profit or loss	902	164	56
Financial assets measured at fair value through other comprehensive income	445	118	-
Total	**6,199**	**493**	**79**

COMPARATIVE INFORMATION IN ACCORDANCE WITH IAS 39

	Dec. 31, 2017		
€ million	Level 1	Level 2	Level 3
Portugal	**378**	**-**	**-**
Fair value option	378	-	-
Italy	**4,419**	**1,065**	**100**
Financial instruments held for trading	-	20	-
Fair value option	1,208	79	61
Available-for-sale financial assets	3,211	966	39
Spain	**1,322**	**628**	**71**
Financial instruments held for trading	-	211	-
Fair value option	1,016	50	44
Available-for-sale financial assets	306	367	27
Total	6,119	1,693	171

Maturity analysis

AS AT DECEMBER 31, 2018

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years
Portugal	-	-	26	101	808
Italy	15	86	282	1,598	4,581
Spain	4	6	109	614	2,030
Total	**19**	**92**	**417**	**2,313**	**7,419**

AS AT DECEMBER 31, 2017

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years
Portugal	-	-	25	102	834
Italy	63	69	301	1,755	5,238
Spain	7	1	248	588	1,969
Total	**70**	**70**	**574**	**2,445**	**8,041**

The maturity analysis shows the contractually agreed cash inflows.

F Other disclosures

>> 86 Contingent liabilities

€ million	Dec. 31, 2018	Dec. 31, 2017
Contingent liabilities arising from contributions to the resolution fund for CRR credit institutions	25	11
Contingent liabilities in respect of litigation risk	10	4
Total	**35**	**15**

The contingent liabilities arising from contributions to the resolution fund for CRR credit institutions consist of irrevocable payment commitments that were made after the applications to furnish collateral in partial settlement of the annual contribution to the European bank levy for 2017 and 2018 were approved by the Single Resolution Board (SRB).

The contingent liabilities in respect of litigation risk comprise a small number of court proceedings relating to different cases. Where provisions have been recognized for particular claims, no contingent liabilities are recognized.

>> 87 Financial guarantee contracts and loan commitments

€ million	Dec. 31, 2018	Dec. 31, 2017
Financial guarantee contracts	**7,601**	**6,996**
Loan guarantees	4,022	3,765
Letters of credit	465	553
Other guarantees and warranties	3,114	2,678
Loan commitments	**54,270**	**33,509**
Credit facilities to banks	17,723	5,017
Credit facilities to customers	15,866	14,974
Guarantee credits	436	363
Letters of credit	1	27
Global limits	20,244	13,128
Total	**61,871**	**40,505**

The amounts shown for financial guarantee contracts and loan commitments are the nominal values of the commitment in each case.

>>88 Trust activities

Assets held and liabilities entered into as part of trust activities do not satisfy the criteria for recognition on the balance sheet. The following table shows the breakdown for trust activities:

€ million	Dec. 31, 2018	Dec. 31, 2017
Trust assets	**944**	**1,096**
Loans and advances to banks	143	139
Loans and advances to customers	24	44
Investments	777	913
Trust liabilities	**944**	**1,096**
Deposits from banks	71	83
Deposits from customers	873	1,013

Trust assets and trust liabilities each include trust loans amounting to €79 million (December 31, 2017: €110 million).

>>89 Business combinations

WL BANK AG Westfälische Landschaft Bodenkreditbank, Münster, was merged into Deutsche Genossenschafts-Hypothekenbank AG, Hamburg, in the year under review (transaction under common control). The effective merger date was May 28, 2018. The merger was carried out by way of absorption by transferring the assets of WL BANK in accordance with section 2 no. 1 of the German Transformation Act (UmwG). The company resulting from the merger was then renamed DZ HYP AG. As both companies were already included in the consolidated financial statements prior to the merger, there was no impact.

Goodwill is allocated to the DZ BANK Group's operating segments, each of which constitutes a cash-generating unit. As had been the case a year earlier, goodwill of €39 million was allocated to the UMH subgroup operating segment and €2 million to the TeamBank operating segment as at the balance sheet date. No goodwill was allocated to the DZ PRIVATBANK operating segment as at the reporting date (December 31, 2017: €128 million).

Goodwill is regularly tested for possible impairment in the last quarter of the financial year. If there are any indications of possible impairment, more frequent impairment tests are also carried out. In an impairment test, the carrying amount of the goodwill-bearing units is compared with the relevant recoverable amount. The carrying amount is equivalent to the equity attributable to the goodwill-bearing entity. For the purposes of the test, the goodwill is notionally increased by the amount attributable to non-controlling interests. If the recoverable amount exceeds the carrying amount, no impairment of the goodwill is recognized. The recoverable amount is determined as the value in use of the goodwill-bearing entity. Value in use is based on the DZ BANK Group's 4-year plan, from which estimated future cash flows can be derived.

The basic assumptions are determined using an overall assessment based on past experience, current market and economic conditions, and estimates of future market trends. The macroeconomic scenario used as the basis for the 4-year plan assumes that Germany and the other countries of the European Monetary Union are continuing in a phase of moderate economic recovery with a somewhat slower growth rate. It also assumes that both the euro area and the US dollar area will be hit by rising inflation, although the ECB's target for the euro area of 2.0 percent is unlikely to be exceeded for very long. Central banks are expected to adjust key interest rates accordingly after some delay. The scenario anticipates a widening of spreads on government bonds issued by the peripheral countries of the eurozone.

As had been the case in 2017, cash flows beyond the end of the 4-year period were estimated using a constant rate of growth of 1.0 percent for the following operating segments: DZ PRIVATBANK, UMH subgroup, and TeamBank.

The value in use for a goodwill-bearing entity is produced by discounting these cash flows back to the date of the impairment test. The following discount rates (before taxes) used in the calculation were determined on the basis of the capital asset pricing model in 2018: 13.15 percent for the DZ PRIVATBANK operating segment (2017: 12.64 percent), 14.02 percent for the UMH subgroup operating segment (2017: 13.58 percent), and 14.02 percent for the TeamBank operating segment (2017: 13.58 percent).

In the fourth quarter of 2018, there were indications that the goodwill allocated to the DZ PRIVATBANK operating segment might be impaired. The subsequent impairment test resulted in the recognition of an impairment loss of €128 million in respect of the goodwill. The impairment loss was recognized in other net operating income. There had been no impairment losses in the previous year.

Sensitivity analyses are also carried out in which parameters relevant to the calculation of value in use are modified within a plausible range of values. The parameters that are particularly relevant to the DZ BANK Group are the forecast cash flows and the discount rates. No impairment requirement would result in the TeamBank operating segment or in the UMH subgroup in any of the scenarios.

>> 90 Leases

Finance leases

DZ BANK GROUP AS LESSOR

€ million	Dec. 31, 2018	Dec. 31, 2017
Gross investment	**2,164**	**3,203**
Up to 1 year	711	1,007
More than 1 year and up to 5 years	1,330	1,929
More than 5 years	123	267
less unearned finance income	**-144**	**-263**
Net investment	2,020	2,940
less present value of unguaranteed residual values	**-42**	**-57**
Present value of minimum lease payment receivables	**1,978**	**2,883**
Up to 1 year	642	882
More than 1 year and up to 5 years	1,225	1,763
More than 5 years	111	238

As at the balance sheet date, the accumulated loss allowance for uncollectible minimum lease payments at lessor companies amounted to €20 million (December 31, 2017: €26 million).

Within the DZ BANK Group, the DVB and VR LEASING subgroups are active as lessors. The entities in the DVB subgroup primarily enter into finance leases for ships and ship containers. As had been the case at the end of 2017, the total term of these leases runs for up to 7 years. The companies in the VR LEASING subgroup predominantly enter into leases with customers for equipment.

Operating leases

DZ BANK GROUP AS LESSOR

€ million	Dec. 31, 2018	Dec. 31, 2017
Total future minimum lease payments under non-cancelable leases	**842**	**769**
Up to 1 year	177	142
More than 1 year and up to 5 years	371	374
More than 5 years	294	253

In 2018, contingent minimum lease payments of €1 million (2017: €1 million) were recognized as income.

Entities in the DVB subgroup enter into operating leases for ships as the lessor. As at the balance sheet date, the lease terms were unchanged on the previous year at up to 9 years. Leases are also entered into for residential property and business premises. Some of these leases have renewal options. A small volume of leases related to office furniture and equipment.

DZ BANK GROUP AS LESSEE

€ million	Dec. 31, 2018	Dec. 31, 2017
Total future minimum lease payments under non-cancelable leases	**943**	**839**
Up to 1 year	160	153
More than 1 year and up to 5 years	484	452
More than 5 years	299	234

As at the balance sheet date, the total future minimum lease payments expected to be received under non-cancelable subleases amounted to €17 million (December 31, 2017: €10 million).

In 2018, minimum lease payments of €149 million (2017: €123 million) and contingent rents of €22 million (2017: €22 million) were recognized as expenses.

Operating leases in the DZ BANK Group are leases for properties and business premises, some of which contain extension options or have their lease payments linked to a price index. There are also leases for office furniture and equipment in which some of the lease payments are dependent on the quantity of hardware used and the number of licenses provided.

Sale and leaseback transactions

Some companies in the DZ BANK Group, particularly individual companies in the VR LEASING subgroup, enter into sale and leaseback agreements. The classification of such leases as finance leases or operating leases depends on the structure of each individual transaction.

>> 91 Disclosures on revenue from contracts with customers

Effects in the income statement

Disclosures on revenue from contracts with customers, broken down by operating segment

2018

€ million	DZ BANK	BSH	DVB
Income type			
Fee and commission income from securities business	317	-	-
Fee and commission income from asset management	-	-	-
Fee and commission income from payments processing including card processing	216	-	1
Fee and commission income from lending business and trust activities	68	-	65
Fee and commission income from financial guarantee contracts and loan commitments	45	-	3
Fee and commission income from international business	11	-	-
Fee and commission income from building society operations	-	31	-
Other fee and commission income	57	55	28
Fee and commission income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	-
Other operating income	-	-	-
Other income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	-
Total	**714**	**86**	**97**
Main geographical markets			
Germany	714	76	35
Rest of Europe	-	10	45
Rest of World	-	-	17
Total	**714**	**86**	**97**
Type of revenue recognition			
At a point in time	257	86	31
Over a period of time	457	-	66
Total	**714**	**86**	**97**

In the reporting period, the DZ BANK Group recognized revenue from contracts with customers in an amount of €3 million that had been included in contract liabilities at the beginning of the year.

	DZ HYP	DZ PRIVAT-BANK	R+V	TeamBank	UMH	VR LEASING	Other/ Consolidation	**Total**
	-	195	-	-	2,432	-	-151	2,793
	-	223	-	-	16	-	-17	222
	-	2	-	-	-	-	50	269
	4	-	-	3	-	-	22	162
	7	-	-	-	-	-	-3	52
	-	-	-	-	-	-	-	11
	-	-	-	-	-	-	-	31
	-	11	-	139	-	37	-118	209
	-	-	57	-	-	-	-	57
	-	-	-	10	4	-	11	25
	-	-	56	-	-	-	-	56
	11	**431**	**113**	**152**	**2,452**	**37**	**-206**	**3,887**
	11	129	113	152	1,843	37	-144	2,966
	-	300	-	-	609	-	-62	902
	-	2	-	-	-	-	-	19
	11	**431**	**113**	**152**	**2,452**	**37**	**-206**	**3,887**
	8	73	6	152	344	37	-179	815
	3	358	107	-	2,108	-	-27	3,072
	11	**431**	**113**	**152**	**2,452**	**37**	**-206**	**3,887**

Effects on the balance sheet

Receivables, contract assets, and contract liabilities

Receivables from contracts with customers in which the recognized income is not subject to calculation using the effective interest method are accounted for in application of the rules in IFRS 15. Contract assets and contract liabilities are also recognized as a result of circumstances in which the fulfilment of the counter-performance is conditional on something other than the passage of time.

The contract liabilities amounted to €38 million as at the reporting date. These arose from the property development and service businesses.

Changes in receivables, contract assets, and contract liabilities from contracts with customers

€ million	Loans and advances to banks	Loans and advances to customers	Other receivables (other assets)	Contract liabilities
Balance as at Jan. 1, 2018	5	75	139	23
Additions	41	433	2,074	18
Derecognitions	-41	-399	-2,071	-3
Other	-	-	-3	-
Balance as at Dec. 31, 2018	**5**	**109**	**139**	**38**

'Other' is used to report other changes, such as currency translation effects and effects from changes in the scope of consolidation.

Other disclosures on revenue from contracts with customers

Performance obligations

Performance obligations are satisfied predominantly over a period of time. Within any year, performance obligations over time are billed mainly on a monthly or quarterly basis. Performance obligations related to a point in time are satisfied when the service in question has been performed. The related fees are normally due after the service has been provided. In the property development business, the performance obligation is satisfied gradually with the completion of the individual stages of construction. The consideration does not vary for the most part.

If advance payments are received, this leads to the recognition of contract liabilities, which are then reversed again over the maturity of the contract.

>> 92 Letters of comfort

Except in the event of political risk, DZ BANK has undertaken to ensure, in proportion to its shareholding for the consolidated entity DZ PRIVATBANK, and in total for DZ HYP, that these companies are able to meet their contractual obligations. These entities are identified in the list of DZ BANK Group's shareholdings (note 103) as being covered by a letter of comfort. DZ BANK has also issued subordinated letters of comfort in respect of DZ BANK Capital Funding LLC I, DZ BANK Capital Funding LLC II, and DZ BANK Capital Funding LLC III, all based in Wilmington. In addition, DZ BANK has issued 5 subordinated letters of comfort in respect of DZ BANK Perpetual Funding (Jersey) Limited, St. Helier, Jersey, each relating to different classes of preferred shares.

>> 93 Employees

Average number of employees by employee group:

	Dec. 31, 2018	Dec. 31, 2017
Female employees	**13,973**	**13,698**
Full-time employees	8,614	8,512
Part-time employees	5,359	5,186
Male employees	**16,759**	**16,581**
Full-time employees	15,758	15,644
Part-time employees	1,001	937
Total	**30,732**	**30,279**

>> 94 Auditor fees

The total fees charged for 2018 by the independent auditors of the consolidated financial statements, Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart, broken down by type of service are as follows:

€ million	2018	2017
Auditing services	14.5	18.5
Other attestation services	1.1	1.0
Tax consultancy services	-	0.2
Other services	2.2	3.2
Total	**17.8**	**22.9**

The fees for auditing services comprise expenses relating to the audit of the consolidated financial statements and group management report of DZ BANK as well as the audits of the annual financial statements and management reports of DZ BANK and consolidated subsidiaries carried out by the auditors of the consolidated financial statements. The fees for auditing services also comprise expenses relating to the review by the auditor of the condensed interim consolidated financial statements and interim group management report. The fees for other attestation services comprise the fees charged for the audit in accordance with section 36 of the German

Securities Trading Act (WpHG) and services for which the auditors' professional seal must or can be applied. The fees for other services resulted from the auditing of funds of UMH and from consulting services.

>> 95 Remuneration for the Board of Managing Directors and Supervisory Board of DZ BANK

In 2018, overall remuneration for DZ BANK's Board of Managing Directors from the group in accordance with IAS 24.17 amounted to €13.0 million (2017: €16.7 million). This total is broken down into short-term employee benefits of €8.5 million (2017: €11.2 million), post-employment benefits of €3.0 million (2017: €3.6 million), and share-based payments of €1.5 million (2017: €1.9 million). The remuneration for the Board of Managing Directors in 2018 and 2017 included the total bonus awarded to the Board of Managing Directors for the year in question. Supervisory Board remuneration amounted to €1.0 million (2017: €0.9 million) and consisted of payments due in the short term.

The remuneration for the Board of Managing Directors included contributions of €0.3 million (2017: €0.3 million) to defined contribution pension plans. DZ BANK has defined benefit obligations for the members of the Board of Managing Directors amounting to €37.8 million (December 31, 2017: €32.0 million).

In 2018, the total remuneration for the Board of Managing Directors of DZ BANK for the performance of their duties in DZ BANK and its subsidiaries pursuant to section 314 (1) no. 6a HGB was €10.3 million (2017: €13.3 million), while the total remuneration for the Supervisory Board for the performance of these duties amounted to €1.0 million (2017: €0.9 million).

The total remuneration paid to former members of the Board of Managing Directors or their surviving dependants pursuant to section 314 (1) no. 6b HGB amounted to €10.4 million in 2018 (2017: €11.1 million). DZ BANK has defined benefit obligations for former members of the Board of Managing Directors or their surviving dependants amounting to €165.6 million (2017: €180.1 million).

>> 96 Share-based payment transactions

The entities in the DZ BANK Group have entered into share-based payment agreements with the members of the Board of Managing Directors and with certain other salaried employees.

DZ BANK has entered into agreements governing variable remuneration paid over several years with the members of the Board of Managing Directors, heads of division, and a group of selected salaried employees (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. In the case of members of the Board of Managing Directors and heads of division, 80 percent of the total variable remuneration is deferred over a period of up to 6 years from when the bonus is determined. For risk takers below the level of head of division with variable remuneration of more than €130,000, 80 percent of the total variable remuneration is deferred over a period of up to 4 years from when the bonus is determined. For risk takers below the level of head of division with variable remuneration of more than €50,000 and up to €130,000, 70 percent of the total variable remuneration is deferred over a period of up to 4 years from when the bonus is determined. Amounts are paid out after taking into account deferral or retention periods. The deferred portion of the variable remuneration may be reduced or even fully withdrawn if there is an adverse change in the value of DZ BANK shares or if there are negative contributions to profits from DZ BANK, individual divisions, or individual activities. A rise in the value of DZ BANK shares does not lead to an increase in the deferred remuneration. The value of the shares is determined each year by means of an independent business valuation. The deferred portion of the variable remuneration for members of the Board of Managing Directors is reduced by 50 percent if the share price falls by between 7.5 percent and 12.5 percent. If the share price drops by more than 12.5 percent, the deferred portion of the variable remuneration is canceled. In the case of heads of division and risk takers below the level of head of division, the deferred portion of the variable remuneration is reduced by 25 percent if the share price falls by between 15 percent and 20 percent. If the share price drops by between 20 percent and 25 percent, the deferred portion of the variable remuneration is reduced by 50 percent. If the share price drops by more than 25 percent, the deferred portion of the variable remuneration is canceled in full. If the change in the share price does not reach the specified threshold values, the deferred portion of the variable remuneration is not reduced as a result of the change in the share price. Based on a value per DZ BANK share of €9.10 as at December 31, 2015, a value per share of €9.15 as at December 31, 2016, a value per share of €8.65 as at December 31, 2017 (adjusted share value following the merger), and the value per share of €8.65 as at December 31, 2018, it can currently be assumed that the deferred remuneration will be paid in full. No options have been granted for these groups of employees.

The following summary shows the change in unpaid share-based payment components at DZ BANK:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2017	3.0	13.5
Remuneration granted	2.6	11.6
Payment of remuneration granted in 2016	-0.8	-3.3
Payment of remuneration granted in previous years	-1.3	-1.5
Unpaid share-based payments as at Dec. 31, 2017	3.5	20.3
Remuneration granted	1.9	8.2
Payment of remuneration granted in 2017	-0.8	-5.3
Payment of remuneration granted in previous years	-1.4	-2.7
Unpaid share-based payments as at Dec. 31, 2018	**3.2**	**20.5**

Share-based payments are granted in the year after they have been earned.

DZ PRIVATBANK has entered into an agreement on variable remuneration components with the members of its Board of Managing Directors. In this agreement, a specific reference bonus amount has been linked to the attainment of various corporate targets; attainment will be determined on the basis of internal key performance indicators. The reference bonus will be set after the annual financial statements have been formally adopted by the Supervisory Board, at the latest. The amount determined annually in this way will be paid out over 5 years. Except for the initial payout amount of 20 percent of the reference bonus, which will be paid out immediately after the bonus amount has been set, the following 4 annual payments (each equating to 20 percent of the variable remuneration) will depend on the change in the enterprise value of DZ PRIVATBANK S.A. Depending on the change in enterprise value (which will be measured over 4 periods, with one-year, two-year, three-year, and four-year analysis periods respectively), there can be payment of the full amount, cancelation of the payment, or a median scenario in which 50 percent of the annual amount is paid out. The changes in enterprise value are defined as three bands: a change of better than a 10 percent fall, a fall of between 10 percent and 15 percent, and a change of worse than 15 percent. The enterprise value is determined each year by means of an independent business valuation.

The following summary shows the change in unpaid share-based payment components at DZ PRIVATBANK:

€ million	Board of Managing Directors
Unpaid share-based payments as at Jan. 1, 2017	2.9
Remuneration granted	0.4
Payment of remuneration granted in 2016	-0.1
Payment of remuneration granted in previous years	-0.4
Unpaid share-based payments as at Dec. 31, 2017	2.8
Remuneration granted	0.5
Payment of remuneration granted in 2017	-0.1
Payment of remuneration granted in previous years	-0.5
Unpaid share-based payments as at Dec. 31, 2018	**2.7**

The variable components of the remuneration for the Board of Managing Directors and a group of selected salaried employees (risk takers) at R+V depend on whether both quantitative and qualitative targets are achieved. The variable remuneration depends on the change in value of the shares in R+V Versicherungs AG within the last 3 financial years. In these arrangements, the share value equates to the fair market value (section 11 (2) of the German Valuation Act (BewG)) of the unlisted shares in R+V Versicherung AG as at December 31 of the year in question. The variable remuneration is settled in cash. The portion of the bonus subject to payout restrictions will be paid out after 3 years without any reduction if the share value equates to more than 85 percent of the value at the end of the baseline year. If the share value is between 75 percent and 85 percent of this figure, the bonus portion subject to payout restrictions is reduced by half. If the share value falls below 75 percent, payment of the part of the bonus subject to payout restrictions is canceled in full.

The following table shows the changes in unpaid remuneration components at R+V:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2017	1.2	-
Remuneration granted	0.6	0.1
Payment of remuneration granted in 2016	-1.2	-
Unpaid share-based payments as at Dec. 31, 2017	0.6	0.1
Remuneration granted	0.7	0.1
Unpaid share-based payments as at Dec. 31, 2018	**1.3**	**0.2**

At DVB, the variable salary payments to the Board of Managing Directors and risk takers up to 2017 included a bonus, which was determined by the Supervisory Board each year on the basis of agreements on targets. It was paid in installments over the 4 years after the financial year to which it related.

Each payment was subject to certain conditions (e.g. employment contract not having been terminated) and penalty arrangements (e.g. compliance with internal policies). A further condition applicable to all 4 bonus installments was that 50 percent of each tranche was subject to an additional one-year holding period and was therefore not paid immediately. During this holding period, the value of the retained tranche was replaced by a share-based payment instrument linked to the performance of DVB. In this mechanism, the value of the retained tranche was initially converted into notional shares in DVB (phantom shares). At the end of the subsequent year, the tranche due for payment was calculated by multiplying the allocated phantom shares by the price of DVB shares on the Frankfurt Stock Exchange, plus the dividend distributed during the course of the year. In 2017, the calculation was based on a compensation price of €22.60 per share instead of the Frankfurt

Stock Exchange share price because DVB's shares were delisted on August 17, 2017. The bonus portions still converted into phantom shares on the date of the delisting were paid out in 2018 on the basis of the cash settlement per share for the non-controlling interests. Share-based payment instruments were discontinued in 2018.

In 2018, no phantom shares (2017: 64,026 phantom shares) were granted as a bonus for previous financial years. All phantom shares granted in 2017 were exercised in the reporting period. There were no longer any outstanding phantom shares as at the reporting date. The fair value of the phantom shares as at December 31, 2017 was €1.5 million.

The following summary shows the change in unpaid share-based payment components at DVB:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2017	0.2	1.4
Remuneration granted	-	1.5
Payment of remuneration granted in 2016	-0.1	-0.9
Payment of remuneration granted in previous years	-0.1	-0.5
Unpaid share-based payments as at Dec. 31, 2017	-	1.5
Payment of remuneration granted in 2017	-	-0.5
Payment of remuneration granted in previous years	-	-0.9
Reduction of share-based payments	-	-0.1
Unpaid share-based payments as at Dec. 31, 2018	**-**	**-**

In 2018, the agreements described above gave rise to expenses for share-based payment transactions in the DZ BANK Group of €9.6 million (2017: €11.8 million). As at December 31, 2018, the provisions recognized for share-based payment transactions in the DZ BANK Group amounted to €43.8 million (December 31, 2017: €45.6 million).

>> 97 Related party disclosures

DZ BANK enters into transactions with related parties (persons or entities) as part of its ordinary business activities. All of this business is transacted on an arm's length basis. Most of these transactions involve typical banking products and financial services.

Transactions with related parties (entities)

€ million	Dec. 31, 2018	Dec. 31, 2017
Loans and advances to banks	**141**	**13**
to joint ventures	141	13
Loans and advances to customers	**155**	**206**
to subsidiaries	74	120
joint ventures	21	29
associates	60	57
Financial assets held for trading	**4**	**5**
of subsidiaries	4	5
Investments	**5**	**-**
joint ventures	5	-
Investments held by insurance companies	**98**	**96**
of subsidiaries	98	96
Other assets	**34**	**23**
of subsidiaries	20	22
pension plans for the benefit of employees	14	1
Deposits from banks	**97**	**606**
owed to joint ventures	97	606
Deposits from customers	**219**	**231**
owed to subsidiaries	213	223
associates	6	8
Other liabilities	**19**	**22**
of subsidiaries	12	14
joint ventures	2	3
pension plans for the benefit of employees	5	5
Subordinated capital	**21**	**21**
of pension plans for the benefit of employees	21	21

€ million	Dec. 31, 2018	Dec. 31, 2017
Financial guarantee contracts	**11**	**10**
for subsidiaries	11	10
Loan commitments	**333**	**14**
to subsidiaries	76	10
joint ventures	256	-
associates	1	4

Income of €10 million (2017: €23 million) in the total reported net interest income, income of €9 million (2017: expenses of €3 million) in the total reported net fee and commission income, and expenses of €13 million (2017: €6 million) in the gains and losses on investments held by insurance companies and other insurance company gains and losses were attributable to transactions with related parties (entities).

Transactions with related parties (persons)

Related parties (persons) are key management personnel who are directly or indirectly responsible for the planning, management, and supervision of the activities of DZ BANK, as well as their close family members. For the purposes of IAS 24, the DZ BANK Group considers the members of the Board of Managing Directors and the members of the Supervisory Board to be key management personnel. As at December 31, 2018, the DZ BANK Group's loans and loan commitments to related parties (persons) amounted to €1.0 million (December 31, 2017: €1.2 million).

Like unrelated parties, key management personnel and their close family members also have the option of obtaining further financial services from the DZ BANK Group, for example in the form of insurance contracts, home savings contracts, and leases. Where they made use of this option, the transactions were carried out on an arm's-length basis.

>> 98 Events after the balance sheet date

A prospective purchaser notified its intention to acquire the shares in Českomoravská stavební spořitelna, a.s. (ČMSS) held by BSH. In response, the Board of Managing Directors of BSH decided to enter into negotiations for the sale of the shares. Subject to the consent of the Supervisory Board of BSH, the sale is planned to take place in the first half of 2019. A positive contribution to earnings is anticipated from the sale. ČMSS is included in the consolidated financial statements of DZ BANK as a joint venture and is accounted for using the equity method (see note 30).

On February 26, 2019, DVB signed a contract of sale with Volkswagen Financial Services AG, Braunschweig, for the sale of LogPay Financial Services GmbH. The sale was published on the following day in an ad hoc announcement and is subject to antitrust approvals.

In addition, DVB signed a contract of sale on March 1, 2019 with MUFG Bank, Ltd., Tokyo, and BOT Lease Co., Ltd., Tokyo, for the transfer of the credit portfolios in DVB's aviation finance business, including the aviation investment management and aviation asset management operating activities. The sale was published on the same day in an ad hoc announcement and is subject to antitrust approvals. The sale is expected to be completed in the second half of 2019.

>> 99 Board of Managing Directors

Wolfgang Kirsch
(Chief Executive Officer until December 31, 2018)

Uwe Fröhlich
(Co-Chief Executive Officer since January 1, 2019)
Responsibilities: Cooperative Banks/Verbund; Communication, Marketing, CR; Research and Economics; Strategy & Group Development; Structured Finance

Dr. Cornelius Riese
(Co-Chief Executive Officer since January 1, 2019)
Responsibilities: Group Audit; Legal; Strategy & Group Development

Uwe Berghaus
Responsibilities: Corporate Banking Baden-Württemberg; Corporate Banking Bavaria; Corporate Banking North and East; Corporate Banking West/Central; Investment Promotion; Central Corporate Banking

Dr. Christian Brauckmann
Responsibilities: IT; Organisation

Ulrike Brouzi
(Member of the Board of Managing Directors since September 1, 2018)
Responsibilities: Bank Finance; Compliance; Group Finance; Group Financial Services

Wolfgang Köhler
Responsibilities: Capital Markets Trading; Capital Markets Institutional Clients; Capital Markets Retail Clients; Group Treasury

Michael Speth
Responsibilities: Group Risk Controlling; Credit; Credit Special

Thomas Ullrich
Responsibilities: Group Human Resources; Operations; Payments & Accounts; Transaction Management

Stefan Zeidler
(Member of the Board of Managing Directors until March 31, 2018)

>> 100 General Executive Manager

Uwe Fröhlich
(until December 31, 2018)

>> 101 Supervisory Board

Henning Deneke-Jöhrens
(Chairman of the Supervisory Board since May 30, 2018)
Chief Executive Officer
Volksbank eG Hildesheim-Lehrte-Pattensen

Helmut Gottschalk
(Chairman of the Supervisory Board until May 30, 2018)
Bank director (ret.)

Ulrich Birkenstock
(Deputy Chairman of the Supervisory Board)
Employee
R+V Allgemeine Versicherung AG

Martin Eul
(Deputy Chairman of the Supervisory Board since May 30, 2018)
Chief Executive Officer
Dortmunder Volksbank eG

Werner Böhnke
(Deputy Chairman of the Supervisory Board until May 30, 2018)
Bank director (ret.)

Heiner Beckmann
Senior manager
R+V Allgemeine Versicherung AG

Hermann Buerstedde
Employee
Union Asset Management Holding AG

Uwe Goldstein
Spokesman of the Board of Managing Directors
Raiffeisenbank Frechen-Hürth eG

Timm Häberle
(Member of the Supervisory Board since May 30, 2018)
Chief Executive Officer
VR-Bank Neckar-Enz eG

Dr. Peter Hanker
Spokesman of the Board of Managing Directors
Volksbank Mittelhessen eG

Andrea Hartmann
Employee
Bausparkasse Schwäbisch Hall AG

Pilar Herrero Lerma
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

Dr. Dierk Hirschel
Head of the Economic Policy Division
ver.di Bundesverwaltung

Marija Kolak
President
Bundesverband der Deutschen Volksbanken
und Raiffeisenbanken e.V. (BVR)

Renate Mack
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

Rainer Mangels
Employee
R+V Rechtsschutz-
Schadenregulierungs-GmbH

Stephan Schack
Spokesman of the Board of Managing Directors
Volksbank Raiffeisenbank eG, Itzehoe

Gregor Scheller
Chief Executive Officer
Volksbank Forchheim eG

Uwe Spitzbarth
Head of the Financial Services Division
ver.di Bundesverwaltung

Sigrid Stenzel
Regional Group Director
ver.di Bayern

Ingo Stockhausen
(Member of the Supervisory Board since May 30, 2018)
Chief Executive Officer
Volksbank Oberberg eG

Dr. Wolfgang Thomasberger
Chief Executive Officer
VR Bank Rhein-Neckar eG

>> 102 Supervisory mandates held by members of the Board of Managing Directors and employees

Within DZ BANK

As at December 31, 2018, members of the Board of Managing Directors and employees also held mandates on the statutory supervisory bodies of major companies. These and other notable mandates are listed below. Companies included in the consolidation are indicated with an asterisk (*).

Members of the Board of Managing Directors

Wolfgang Kirsch (Chief Executive Officer until December 31, 2018)	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (*) Chairman of the Supervisory Board (until December 31, 2018) R+V Versicherung AG, Wiesbaden (*) Chairman of the Supervisory Board (until December 31, 2018) Union Asset Management Holding AG, Frankfurt am Main (*) Chairman of the Supervisory Board (until December 31, 2018)
Uwe Fröhlich (Co-Chief Executive Officer since January 1, 2019)	DZ HYP AG, Hamburg and Münster (*) Chairman of the Supervisory Board DZ PRIVATBANK S.A., Strassen (*) Chairman of the Supervisory Board VR-LEASING AG, Eschborn (*) Chairman of the Supervisory Board
Dr. Cornelius Riese (Co-Chief Executive Officer since January 1, 2019)	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (*) Member of the Supervisory Board (until December 31, 2018) Chairman of the Supervisory Board (since January 1, 2019) R+V Versicherung AG, Wiesbaden (*) Member of the Supervisory Board (until December 31, 2018) Chairman of the Supervisory Board (since January 1, 2019) TeamBank AG Nürnberg, Nuremberg (*) Member of the Supervisory Board (since January 23, 2019) Union Asset Management Holding AG, Frankfurt am Main (*) Member of the Supervisory Board (until December 31, 2018) Chairman of the Supervisory Board (since January 1, 2019) VR-LEASING AG, Eschborn (*) Member of the Supervisory Board

Uwe Berghaus	DZ HYP AG, Hamburg and Münster (*) Member of the Supervisory Board
	EDEKABANK AG, Hamburg Member of the Supervisory Board
Dr. Christian Brauckmann	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
	DZ PRIVATBANK S.A., Strassen (*) Deputy Chairman of the Supervisory Board
	Fiducia & GAD IT AG, Frankfurt am Main Member of the Supervisory Board
Ulrike Brouzi	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (*) Member of the Supervisory Board (since January 1, 2019)
	R+V Allgemeine Versicherung AG, Wiesbaden (*) Member of the Supervisory Board (since January 1, 2019)
	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board (since January 1, 2019)
	Salzgitter AG, Salzgitter Member of the Supervisory Board
Wolfgang Köhler	DVB Bank SE, Frankfurt am Main (*) Chairman of the Supervisory Board
	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board

Michael Speth	BAG Bankaktiengesellschaft, Hamm Member of the Supervisory Board
	DVB Bank SE, Frankfurt am Main (*) Member of the Supervisory Board
	DZ HYP AG, Hamburg and Münster (*) Member of the Supervisory Board
	R+V Allgemeine Versicherung AG, Wiesbaden (*) Member of the Supervisory Board (until December 31, 2018)
	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board (until December 31, 2018)
	R+V Versicherung AG, Wiesbaden (*) Member of the Supervisory Board (since January 3, 2019)
	TeamBank AG Nürnberg, Nuremberg (*) Deputy Chairman of the Supervisory Board (until December 31, 2018)
	VR-LEASING AG, Eschborn (*) Deputy Chairman of the Supervisory Board (since January 1, 2019)
Thomas Ullrich	Deutsche WertpapierService Bank AG, Frankfurt am Main Chairman of the Supervisory Board
	TeamBank AG Nürnberg, Nuremberg (*) Chairman of the Supervisory Board
	VR Payment GmbH, Frankfurt am Main (*) (until January 3, 2019: Card Process GmbH, Karlsruhe) Chairman of the Supervisory Board

DZ BANK employees

Rolf Büscher	ReiseBank AG, Frankfurt am Main (*) Member of the Supervisory Board
Dr. Thomas Kettern (until December 31, 2018)	Raiffeisen Waren GmbH, Kassel Member of the Supervisory Board

Winfried Münch	AKA Ausfuhrkredit-Gesellschaft mbH, Frankfurt am Main Member of the Supervisory Board
Dr. Peter Neu	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Gregor Roth	equensWorldline SE, Utrecht Deputy Chairman of the Supervisory Board ReiseBank AG, Frankfurt am Main (*) Chairman of the Supervisory Board VR Payment GmbH, Frankfurt am Main (*) (until January 3, 2019: Card Process GmbH, Karlsruhe) Member of the Supervisory Board
Peter Tenbohlen	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Dr. Ulrich Walter	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Dagmar Werner	Banco Cooperativo Español S.A., Madrid Member of the Board of Directors

In the DZ BANK Group

As at December 31, 2018, members of the Boards of Managing Directors and employees also held mandates on the statutory supervisory bodies of the following major companies in Germany. Companies included in the consolidation are indicated with an asterisk (*).

Reinhard Klein Chief Executive Officer Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Kreditservice GmbH, Schwäbisch Hall (*) Member of the Supervisory Board
Peter Magel Member of the Board of Managing Directors Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Kreditservice GmbH, Schwäbisch Hall (*) Member of the Supervisory Board

Claudia Klug General Executive Manager Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Facility Management GmbH, Schwäbisch Hall Chairwoman of the Supervisory Board
Dr. Norbert Rollinger Chief Executive Officer R+V Versicherung AG	Condor Lebensversicherungs-AG, Hamburg (*) Chairman of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board Raiffeisendruckerei GmbH, Neuwied Member of the Supervisory Board R+V Allgemeine Versicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Krankenversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Lebensversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Service Center AG, Wiesbaden Chairman of the Supervisory Board SECURITAS HOLDING GmbH, Berlin Member of the Supervisory Board Union Asset Management Holding AG, Frankfurt am Main (*) Member of the Supervisory Board
Claudia Andersch Member of the Board of Managing Directors R+V Versicherung AG	CHEMIE Pensionsfonds AG, Munich (*) Member of the Supervisory Board Condor Lebensversicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Deputy Chairwoman of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Chairwoman of the Supervisory Board

Jens Hasselbächer Member of the Board of Managing Directors R+V Versicherung AG	R+V Direktversicherung AG, Wiesbaden (*) Deputy Chairman of the Supervisory Board R+V Krankenversicherung AG, Wiesbaden (*) Deputy Chairman of the Supervisory Board
Dr. Christoph Lamby Member of the Board of Managing Directors R+V Versicherung AG	Condor Allgemeine Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board Extremus Versicherungs-AG, Cologne Member of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Member of the Supervisory Board
Tillmann Lukosch Member of the Board of Managing Directors R+V Versicherung AG	Condor Allgemeine Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Direktversicherung AG, Wiesbaden (*) Member of the Supervisory Board
Dr. Edgar Martin Member of the Board of Managing Directors R+V Versicherung AG	GDV Dienstleistungs-GmbH, Hamburg Member of the Supervisory Board R+V Direktversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board Sprint Sanierung GmbH, Cologne (*) Chairman of the Supervisory Board

Julia Merkel Member of the Board of Managing Directors R+V Versicherung AG	KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Member of the Supervisory Board Südzucker AG, Mannheim Member of the Supervisory Board
Marc René Michallet Member of the Board of Managing Directors R+V Versicherung AG	CHEMIE Pensionsfonds AG, Munich (*) Member of the Supervisory Board Condor Allgemeine Versicherungs-AG, Hamburg (*) Deputy Chairman of the Supervisory Board Condor Lebensversicherungs-AG, Hamburg (*) Deputy Chairman of the Supervisory Board GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG, Stuttgart (*) Chairman of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Member of the Supervisory Board
Alexander Boldyreff Chief Executive Officer TeamBank AG Nürnberg	SCHUFA Holding AG, Wiesbaden Chairman of the Supervisory Board
Hans Joachim Reinke Chief Executive Officer Union Asset Management Holding AG	Union Investment Institutional GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board Union Investment Privatfonds GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board Union Investment Real Estate GmbH, Hamburg (*) Deputy Chairman of the Supervisory Board Union Investment Service Bank AG, Frankfurt am Main (*) Chairman of the Supervisory Board

Alexander Schindler
Member of the Board of Managing Directors
Union Asset Management Holding AG

Quoniam Asset Management GmbH, Frankfurt am Main (*)
Chairman of the Supervisory Board

Union Investment Institutional GmbH, Frankfurt am Main (*)
Chairman of the Supervisory Board

Jens Wilhelm
Member of the Board of Managing Directors
Union Asset Management Holding AG

Union Investment Privatfonds GmbH, Frankfurt am Main (*)
Deputy Chairman of the Supervisory Board

Union Investment Real Estate GmbH, Hamburg (*)
Chairman of the Supervisory Board

Union Investment Service Bank AG, Hamburg (*)
Deputy Chairman of the Supervisory Board

Sonja Albers
Employee
Union Asset Management Holding AG

Union Investment Service Bank AG, Frankfurt am Main (*)
Member of the Supervisory Board

Nikolaus Sillem
Member of the Board of Managing Directors
Union Investment Institutional GmbH

Quoniam Asset Management GmbH, Frankfurt am Main (*)
Deputy Chairman of the Supervisory Board

Jörn Stobbe
Member of the Board of Managing Directors
Union Investment Institutional Property GmbH and Union Investment Real Estate GmbH

1. FC Köln GmbH & Co. KGaA, Cologne
Member of the Supervisory Board

Dr. Reinhard Kutscher
Chief Executive Officer
Union Investment Real Estate GmbH

Deutsche Genossenschafts-Hypothekenbank AG, Hamburg (*)
Member of the Supervisory Board

>> 103 List of shareholdings

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
AER Holding N.V. 1)	Willemstad, Curaçao	100.00		20	0
Agder Ocean Reefer II DIS 1)	Oslo, Norway	0.00		0	0
Agder Ocean Reefer III DIS 1)	Oslo, Norway	0.00		0	0
Agder Ocean Shipping KS 1)	Oslo, Norway	0.00		0	0
AGIMA Aktiengesellschaft für Immobilien-Anlage 5)	Frankfurt am Main	100.00		84,043	0
APZ Auto-Pflege-Zentrum GmbH 1)	Darmstadt	100.00		7,623	2,118
APZ Beteiligungs GmbH 1)	Darmstadt	81.70		n/a	n/a
APZ CarMotion GmbH 1)	Fischamend, Austria	100.00		n/a	n/a
Aquila Aircraft Leasing Ltd. 1)	Dublin, Ireland	0.00		-401	-401
ARATOS GmbH 1)	Eschborn	100.00		87	62
ARATOS GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	76	43
ASPASIA GmbH 1)	Eschborn	100.00		56	31
ASPASIA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	742	37
Assimoco S.p.A. 1)	Segrate (Mi), Italy	66.88		179,151	19,095
Assimoco Vita S.p.A. 1)	Segrate (Mi), Italy	82.14		140,523	11,266
attrax S.A. 1)	Luxembourg, Luxembourg	100.00		48,629	19,912
Aufbau und Handelsgesellschaft mbH 1)	Stuttgart	94.90		525	0
AURIGA GmbH 1)	Eschborn	100.00		624	1,572
AXICA Kongress- und Tagungszentrum Pariser Platz 3 GmbH 5)	Berlin	100.00		26	0
Bathgate Trading Opco LLC 1)	Majuro, Marshall Islands	0.00		1	-20
BAUFINEX GmbH 1)	Schwäbisch Hall	70.00		n/a	n/a
Bausparkasse Schwäbisch Hall Aktiengesellschaft - Bausparkasse der Volksbanken und Raiffeisenbanken - 5)	Schwäbisch Hall	96.94		1,812,302	0
Berwick Shipping LLC 1)	Majuro, Marshall Islands	0.00		-102	1,135
Beteiligungsgesellschaft Westend 1 mbH & Co. KG 1)	Frankfurt am Main	94.90		17,885	400
BFL Gesellschaft des Bürofachhandels mbH & Co. KG 1)	Eschborn	73.17	73.38	13,378	14,606
BFL Leasing GmbH 1)	Eschborn	100.00		30,517	15,774
Bischoff GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	21	20
Bluebell Aircraft Leasing Ltd. i.L. 1)	Floriana, Malta	100.00	0.00	753	789
Bonham Aircraft Leasing Ltd. 1)	George Town, Cayman Islands	0.00		128	-420
Braveheart Shipping Holdco LLC 1)	Majuro, Marshall Islands	0.00		0	0
Braveheart Shipping Opco LLC 1)	Majuro, Marshall Islands	0.00		-117	21,017
BWG Baugesellschaft Württembergischer Genossenschaften mbH 1)	Stuttgart	94.78		9,965	0
CALYPSO GmbH 1)	Eschborn	100.00		-733	-82
Canadian Iron Ore Railcar Leasing LP 1)	Hamilton, Canada	0.00		-5,281	-2,516
CANOPOS GmbH 1)	Eschborn	100.00		27	2
CANOPOS GmbH & Co. Immobilien KG 1) 6)	Eschborn	100.00		3	28
Capital Lease Limited 1)	Hong Kong, Hong Kong	100.00		68	-404
carexpert Kfz-Sachverständigen GmbH 1)	Walluf	60.00		4,158	-448
CATHENA GmbH 1)	Eschborn	100.00		51	26
CHEMIE Pensionsfonds AG 1)	Munich	100.00		26,318	2,000
Chiefs Aircraft Holding (Malta) Limited 1)	Floriana, Malta	0.00		2,534	2,534
CI CONDOR Immobilien GmbH 1)	Hamburg	100.00		20,100	0
CIORL Partner Ltd. 1)	Toronto, Canada	0.00		-5,281	-2,516
compertis Beratungsgesellschaft für betriebliches Vorsorgemanagement mbH 1)	Wiesbaden	100.00		4,315	560
Condor Allgemeine Versicherungs-Aktiengesellschaft 1) 5)	Hamburg	100.00		41,762	0
Condor Dienstleistungs GmbH 1)	Hamburg	100.00		290	52
Condor Lebensversicherungs-Aktiengesellschaft 1)	Hamburg	94.98		51,742	0
Container Investment Fund I LLC 1)	Majuro, Marshall Islands	0.00		-22,820	-22,820
Cruise Ship InvestCo LLC 1)	Majuro, Marshall Islands	0.00		0	0
DCAL Aircraft Malta Ltd. 1)	Floriana, Malta	0.00		2,732	2,732
DEGEAKZENT Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		42	16
DEGEAKZENT Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	0.00	51.00	20	20
DEGEALPHA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		29	1
DEGEALPHA Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Hamm-Heessen KG 1)	Eschborn	90.00	66.67	3	0
DEGEARKADE Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	2
DEGEARKADE Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	100.00		3	64

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
DEGEASPEKT Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		29	2
DEGEASPEKT Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	100.00		3	38
DEGEASTURA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		62	37
DEGEASTURA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	100.00		-813	99
DEGEAVUS Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		32	5
DEGEBALTA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		26	1
DEGECASTELL GmbH 1)	Eschborn	100.00		26	-1
DEGECEBER Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		26	0
DEGECEDO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		261	9
DEGECIVO Grundstücksverwaltungsgesellschaft mbH Berlin 1)	Berlin	100.00		28	2
DEGECOMO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		24	0
DEGECULA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		275	249
DEGECULA Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Sindelfingen KG 1)	Eschborn	6.00	75.50	321	330
DEGEDELTA Vermietungsgesellschaft für Betriebsvorrichtungen mbH 1)	Eschborn	100.00		26	0
DEGEDOMUS Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		25	-1
DEGEFULVA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		37	11
DEGEIMPULS Grundstücksverwaltungsgesellschaft Objekt Hattingen mbH 1)	Eschborn	100.00		24	-1
DEGEKONZEPT Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		62	14
DEGEMALVA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	1
DEGEMALVA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1) 6)	Eschborn	100.00		3	43
DEGEMENAR Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	0
DEGEMINAX Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		48	23
DEGEMOBIL Vermietungsgesellschaft für Betriebsvorrichtungen mbH 1)	Eschborn	100.00		33	7
DEGEMOLTO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		28	3
DEGEMONTES Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		229	203
DEGEMONTES Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	95.00	75.00	245	242
DEGEMOX Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		26	1
DEGEMOX Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	100.00		3	38
DEGENITOR Grundstücksverwaltungsgesellschaft mbH 1) 5)	Eschborn	100.00		26	0
DEGEPRIMUS Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		60	34
DEGEPRIMUS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	5.00	75.50	42	41
DEGEPROJEKT Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		44	-75
DEGEPROLOG Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		26	0
DEGEPROMO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		34	1
DEGEPROMO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1) 6)	Eschborn	100.00		-32	-2
DEGERIA Beteiligungsgesellschaft mbH 1)	Eschborn	100.00		26	0
DEGERIPA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		43	17
DEGERIPA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	6.00	76.00	-621	11
DEGESAMOS Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	1
DEGESAMOS Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Neuss KG 1)	Eschborn	90.00	66.67	3	0
DEGESAPOR Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		29	1
DEGESAPOR Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	100.00		3	41
DEGESERA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	1
DEGESERA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	0.00	51.00	678	84
DEGESERVO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	1
DEGESERVO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	100.00		3	188
DEGESIDUX Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		26	1
DEGESIGNUM Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		58	32
DEGESIGNUM Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	6.00	75.50	40	39
DEGESILEX Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		62	36
DEGESILEX Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Karlsfeld KG 1)	Eschborn	5.00	75.50	-615	280
DEGESILVA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	2

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
DEGESISTO Grundstücksverwaltungsgesellschaft mbH 1) 5)	Eschborn	100.00		114	0
DEGESOLVO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	1
DEGESOLVO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG i.L. 1)	Eschborn	1.18	6.66	4	0
DEGESUR Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		26	0
DEGETAMESIS Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		53	27
DEGETAMESIS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	10.00	75.50	1,966	95
DEGETANTUS Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		25	-1
DEGETERRA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		41	15
DEGETERRA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	6.00	75.50	-413	140
DEGETIBUR Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		54	28
DEGETIBUR Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	6.00	67.34	36	34
DEGETRINUM Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		50	25
DEGETRINUM Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	6.00	75.50	25	30
DEGEVIA Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	1
DEGEVIA Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Rhede Gronauer Strasse 21 KG 1) 6)	Eschborn	90.00	66.67	3	0
DEGEVITRO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		25	0
DESPINA GmbH 1)	Eschborn	100.00		40	15
Deucalion Capital I (UK) Ltd. 1)	London, UK	0.00		-2,773	-2,773
Deucalion Capital II (MALTA) Limited 1)	Valletta, Malta	0.00		-1,392	-1,225
Deucalion Capital II (UK) Ltd. 1)	London, UK	0.00		2,351	2,351
Deucalion Capital II Limited 1)	George Town, Cayman Islands	0.00		-5,075	-4,990
Deucalion Capital VI Limited 1)	George Town, Cayman Islands	0.00		-667	-667
Deucalion Capital VIII Limited 1)	George Town, Cayman Islands	0.00		12,927	12,604
Deucalion Engine Leasing (Ireland) Ltd. 1)	Dublin, Ireland	0.00		1,016	1,016
Deucalion Ltd. 1)	George Town, Cayman Islands	0.00		19,231	19,231
DEVIF-Fonds Nr. 150 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	0.00		n/a	n/a
DEVIF-Fonds Nr. 2 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	0.00		n/a	n/a
DEVIF-Fonds Nr. 250 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	0.00		n/a	n/a
DEVIF-Fonds Nr. 500 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	0.00		n/a	n/a
DEVIF-Fonds Nr. 528 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	0.00		n/a	n/a
DEVIF-Fonds Nr. 60 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	0.00		n/a	n/a
DG LEASING GmbH 1)	Eschborn	100.00		26	0
DG Participacoes Ltda. 1)	São Paulo, Brazil	100.00		0	0
Dilax Beteiligungs Verwaltungsgesellschaft mbH 1)	Berlin	100.00		25	0
Dilax Beteiligungsgesellschaft mbH & Co. KG 1)	Berlin	92.39		2,859	-158
Dilax France SAS 1)	Valence, France	100.00		420	168
Dilax Intelcom AG 1)	Ermatingen, Switzerland	100.00		730	412
Dilax Intelcom GmbH 1)	Berlin	72.01		2,181	-915
Dilax Intelcom Iberica S.L.U. 1)	Madrid, Spain	100.00		123	62
Dilax Management Investment Reserve GmbH 1)	Berlin	100.00		232	-3
Dilax Management Investment Verwaltungsgesellschaft mbH 1)	Berlin	100.00		22	-1
Dilax Management Investmentgesellschaft mbH & Co. KG 1)	Berlin	99.50		200	-3
Dilax Systems Inc. 1)	Saint Lambert, Canada	100.00		504	200
Dilax Systems UK Ltd. 1)	London, UK	100.00		-1,478	-406
DILAX Systems US Inc 1)	City of Wilmington, County of New Castle, USA	100.00		n/a	n/a
DOBAS Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		29	4
Drem Shipping LLC 1)	Majuro, Marshall Islands	0.00		-14	141
DRITTE DG Vermietungsgesellschaft für Immobilien mbH 1) 5)	Eschborn	100.00		26	0
DUNAVAGON s.r.o. 1)	Dunajská Streda, Slovakia	100.00	0.00	1,903	1,903
DURO Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		27	2
DV01 Szarazfoldi Jarmukolcsonzo rt 1)	Áporka, Hungary	100.00		-250	-250
DVB Bank America N.V. 1)	Willemstad, Curaçao	100.00		110,992	22,297
DVB Bank SE 5)	Frankfurt am Main	100.00		451,568	0
DVB Capital Markets LLC 1)	New York, USA	100.00		2,925	-308
DVB Group Merchant Bank (Asia) Ltd. 1)	Singapore, Singapore	100.00		345,419	26,899
DVB Holding GmbH 1) 5)	Frankfurt am Main	100.00		13,000	0

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
DVB Investment Management N.V. 1)	Willemstad, Curaçao	100.00		218	0
DVB Transport Finance Limited 1)	London, UK	100.00		46,292	261
DVG Deutsche Vermögensverwaltungs-Gesellschaft mit beschränkter Haftung 5)	Frankfurt am Main	100.00		82	0
DVL Deutsche Verkehrs-Leasing GmbH i.L. 1)	Eschborn	74.90		2,485	-13
DZ BANK Capital Funding LLC I 2) 4)	Wilmington, USA	100.00		300,895	6,599
DZ BANK Capital Funding LLC II 2) 4)	Wilmington, USA	100.00		500,716	6,467
DZ BANK Capital Funding LLC III 2) 4)	Wilmington, USA	100.00		350,302	4,182
DZ BANK Capital Funding Trust I	Wilmington, USA	0.00	100.00	300,001	6,594
DZ BANK Capital Funding Trust II	Wilmington, USA	0.00	100.00	500,001	6,460
DZ BANK Capital Funding Trust III	Wilmington, USA	0.00	100.00	350,001	4,179
DZ BANK Perpetual Funding (Jersey) Limited 4)	St. Helier, Jersey	0.00	100.00	260,482	1,272
DZ BANK Perpetual Funding Issuer (Jersey) Limited	St. Helier, Jersey	0.00		0	0
DZ BANK Sao Paulo Representacao Ltda. 2)	São Paulo, Brazil	100.00		355	102
DZ Beteiligungsgesellschaft mbH Nr. 11 5)	Frankfurt am Main	100.00		6,620	0
DZ Beteiligungsgesellschaft mbH Nr. 14 5)	Frankfurt am Main	100.00		51	0
DZ Beteiligungsgesellschaft mbH Nr. 18 5)	Frankfurt am Main	100.00		64,726	0
DZ Beteiligungsgesellschaft mbH Nr. 21 5)	Frankfurt am Main	100.00		25	0
DZ Beteiligungsgesellschaft mbH Nr. 22	Frankfurt am Main	100.00		21	-1
DZ Beteiligungsgesellschaft mbH Nr. 23 5)	Frankfurt am Main	100.00		25	0
DZ Beteiligungsgesellschaft mbH Nr. 24	Frankfurt am Main	100.00		20	-1
DZ CompliancePartner GmbH (GenoTec GmbH until January 17, 2019)	Neu-Isenburg	100.00		n/a	n/a
DZ FINANCIAL MARKETS LLC	New York, USA	100.00		3,919	63
DZ Gesellschaft für Grundstücke und Beteiligungen mbH 5)	Frankfurt am Main	100.00		1,461	0
DZ HYP AG 3) 5)	Hamburg/Münster	96.39		1,762,331	0
DZ Immobilien + Treuhand GmbH 5)	Münster	94.50		4,055	0
DZ Polska Spólka Akcyjna w likwidacji	Warsaw, Poland	100.00		69,454	705
DZ PRIVATBANK (Schweiz) AG 1)	Zurich, Switzerland	100.00		156,549	641
DZ PRIVATBANK S.A. 3)	Strassen, Luxembourg	91.27		640,561	11,382
DZ Versicherungsvermittlung Gesellschaft mbH 5)	Frankfurt am Main	100.00		51	0
DZ Vierte Beteiligungsgesellschaft mbH 5)	Frankfurt am Main	100.00		265,487	0
e@syCredit Marketing und Vertriebs GmbH 1)	Nuremberg	100.00		25	0
ENDES Grundstücksverwaltungsgesellschaft mbH 1) 5)	Eschborn	100.00		26	0
Englische Strasse 5 GmbH 1)	Wiesbaden	90.00		17,870	610
EPI Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		52	13
Finch Aircraft Leasing Limited 1)	Dublin, Ireland	0.00		-2	-120
FKS-NAVIGIUM GmbH 1)	Eschborn	100.00		-641	-126
FLORIN GmbH 1)	Eschborn	100.00		54	29
FLORIN GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	-28	35
FPAC (Malta) Limited 1)	Floriana, Malta	100.00		0	0
fragWILHELM GmbH 1)	Wiesbaden	100.00		n/a	n/a
Fundamenta-Lakáskassza Lakás-takarékpénztár Zrt. 1)	Budapest, Hungary	51.25		151,185	22,179
Fundamenta-Lakáskassza Pénzügyi Közvetitö Kft. 1)	Budapest, Hungary	100.00		4,373	377
GAF Active Life 1 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	96.55		68,573	0
GAF Active Life 2 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	94.98		65,672	0
GENO Broker GmbH 5)	Frankfurt am Main	100.00		10,000	0
GENO-Beteiligungsgesellschaft mbH	Düsseldorf	100.00		1,148	-2
Genossenschaftlicher Informations Service GIS GmbH	Frankfurt am Main	100.00		4,288	89
Glen Campbell Opco LLC 1)	Majuro, Marshall Islands	0.00		-190	-212
Glencoe Shipping Holdco LLC 1)	Majuro, Marshall Islands	0.00		-14	-12
GMS Management und Service GmbH 1)	Nidderau	100.00		79	29
Goldberg Zweite Grundstücksverwaltungsgesellschaft Sütex mbH & Co. KG 1) 6)	Eschborn	94.50	88.00	1,294	338
Green Eagle Investments N.V. 1)	Willemstad, Curaçao	100.00		-6,270	-6,270
Grundstücksverwaltungsgesellschaft Sütex mbH 1)	Eschborn	100.00		23	0
GWG 1. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		2,000	726
GWG 2. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		3,000	876
GWG 3. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		7,000	869
GWG 4. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		9,000	911
GWG Beteiligungsgesellschaft mbH 1)	Stuttgart	100.00		26	0
GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG 1)	Stuttgart	91.56		316,386	28,215
GWG Hausbau GmbH 1) 5)	Stuttgart	94.48		2,750	0
GWG ImmoInvest GmbH 1)	Stuttgart	94.90		8,735	2,793

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
GWG Wohnpark Sendling GmbH 1)	Stuttgart	94.00		3,653	347
GZ-Immobilien-Management GmbH & Co. Objekt KG	Frankfurt am Main	100.00		0	-4
GZ-Trust Consult GmbH i.L.	Stuttgart	100.00		838	359
Havel Nordost Zweite Grossmobilien GmbH 1)	Eschborn	100.00		42	17
Havel Nordost Zweite Grossmobilien GmbH & Co. Vermietungs KG 1)	Zehdenick	0.00	52.00	3,809	1,226
Hawk Aircraft Leasing Limited 1)	Dublin, Ireland	0.00		-46	-46
Hibiscus Aircraft Leasing Limited 1)	Floriana, Malta	0.00		439	439
Highlanders Aircraft Leasing (IRL) Ltd. 1)	Dublin, Ireland	0.00		192	192
Hollandse Scheepshypotheekbank N.V. 1)	Rotterdam, Netherlands	100.00		707	0
Hudson Services LLC 1)	Majuro, Marshall Islands	0.00		-799	-84
HumanProtect Consulting GmbH 1)	Cologne	100.00		216	36
Immobilien-Gesellschaft 'DG Bank-Turm, Frankfurt am Main, Westend' mbH & Co. KG des genossenschaftlichen Verbundes 1)	Frankfurt am Main	95.97		186,392	25,232
Immobilien-Verwaltungsgesellschaft 'DG BANK-Turm, Frankfurt am Main, Westend' mbH	Frankfurt am Main	100.00		55	20
IMPETUS Bietergesellschaft mbH 5)	Düsseldorf	100.00		54,063	0
Intermodal Investment Fund IX LLC 1)	Majuro, Marshall Islands	100.00		21	21
IPConcept (Luxemburg) S.A. 1)	Strassen, Luxembourg	100.00		4,580	8,758
IPConcept (Schweiz) AG 1)	Zurich, Switzerland	100.00		6.158	351
Iron Maple Rail Ltd. 1)	Vancouver, Canada	100.00		-10,563	-10,563
ITF International Transport Finance Suisse AG 1)	Zurich, Switzerland	100.00		-43,457	-7,479
Ivanhoe Shipping Opco LLC 1)	Majuro, Marshall Islands	0.00		266	186
IZD-Beteiligung S.à.r.l. 1)	Luxembourg, Luxembourg	99.50		131	20,867
JASPIS GmbH 1)	Eschborn	100.00		41	15
JASPIS GmbH & Co. Immobilien KG 1) 6)	Eschborn	100.00		10	20
K2 Aircraft Malta Ltd 1)	Floriana, Malta	100.00		4	4
KALAMOS GmbH 1)	Eschborn	100.00		474	449
Kalsubai Shipping and Offshore Private Ltd. 1)	Mumbai, India	0.00		0	14,334
Kälte Eckert GmbH 1)	Markgröningen	70.00		7,026	-374
KBIH Beteiligungsgesellschaft für Industrie und Handel mbH	Frankfurt am Main	100.00		21,103	7,825
KISSELBERG Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		9	0
KISSELBERG Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Eschborn	6.00	66.67	8,011	441
KRAVAG Umweltschutz und Sicherheitstechnik GmbH 1)	Hamburg	100.00		269	30
KRAVAG-ALLGEMEINE Versicherungs-Aktiengesellschaft 1)	Hamburg	100.00		119,361	12,103
KRAVAG-LOGISTIC Versicherungs-Aktiengesellschaft 1)	Hamburg	51.00		205,389	13,717
KTP Beteiligungs GmbH & Co. KG 1)	Frankfurt am Main	100.00		25,769	718
KTP Verwaltungs GmbH 1)	Frankfurt am Main	100.00		22	-2
KV MSN 27602 Aircraft Ltd. 1)	Dublin, Ireland	0.00		-10	127
Lantana Aircraft Leasing Limited 1)	Floriana, Malta	0.00		-24,114	-24,875
Leith Shipping LLC 1)	Majuro, Marshall Islands	0.00		222	312
LEKANIS GmbH 1)	Eschborn	100.00		41	16
LEKANIS GmbH & Co. Immobilien KG 1) 6)	Eschborn	100.00		21	81
Linton Shipping LLC 1)	Majuro, Marshall Islands	0.00		0	84
LISENE GmbH 1)	Eschborn	100.00		44	19
LISENE GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	24	23
LITOS GmbH 1)	Eschborn	100.00		41	16
LITOS GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	21	43
LogPay Financial Services GmbH 1) 5) 6)	Eschborn	100.00		2,000	0
LogPay Mobility Services GmbH 1)	Eschborn	100.00		0	0
Maple Leaf Shipping Holdco LLC 1)	Majuro, Marshall Islands	0.00		4,554	-67
MD Aviation Capital Pte. Ltd. 1)	Singapore, Singapore	100.00		-22,115	-22,115
MDAC 1 Pte Ltd. 1)	Singapore, Singapore	100.00		-4,957	-4,957
MDAC 11 Pte Ltd. 1)	Singapore, Singapore	100.00		-551	-551
MDAC 2 Pte Ltd. 1)	Singapore, Singapore	100.00		-5,574	-5,574
MDAC 3 Pte Ltd. 1)	Singapore, Singapore	100.00		14,188	14,188
MDAC 4 Pte Ltd. 1)	Singapore, Singapore	100.00		-1,760	-1,760
MDAC 5 Pte. Ltd. 1)	Singapore, Singapore	100.00		-6,758	-6,758
MDAC 6 Pte Ltd. 1)	Singapore, Singapore	100.00		3,655	3,655
MDAC 7 (Ireland) Ltd. 1)	Dublin, Ireland	100.00		1,676	1,676
MDAC 8 Pte Ltd. 1)	Singapore, Singapore	100.00		-681	-681
MDAC 9 Pte Ltd. 1)	Singapore, Singapore	100.00		419	419

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € ’000	Profit/loss in € ’000
MDAC Malta Ltd. 1)	Floriana, Malta	0.00		0	0
MI-Fonds 384 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds 388 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds 391 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds 392 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds F 57 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds F 59 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds F45 Metzler Investmtent GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds F46 Metzler Investmtent GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds F47 Metzler Investmtent GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds J01 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MI-Fonds J03 Metzler Investment GmbH 1)	Frankfurt am Main	0.00		n/a	n/a
MINTAKA GmbH 1)	Eschborn	100.00		44	19
MINTAKA GmbH & Co. Immobilien KG 1) 6)	Eschborn	100.00		-138	8
MODULUS GmbH 1)	Eschborn	100.00		52	27
MODULUS GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	34	32
Morgenstern Miet + Leasing GmbH 1)	Eschborn	95.00		26	0
Mount Diamir LLC 1)	Majuro, Marshall Islands	0.00		0	0
Mount Pleasant Shipping Pte. Ltd. 1)	Singapore, Singapore	100.00		536	446
Mount Rinjani Shipping Pte. Ltd. 1)	Singapore, Singapore	100.00		1,738	1,738
Mount Santubong Ltd. 1)	Labuan, Malaysia	100.00		2,499	2,499
Mount Ulriken LLC 1)	Majuro, Marshall Islands	100.00		495	495
MS ‘Mumbai Trader’ GmbH & Co. KG 1)	Bremen	0.00		0	0
MSN1164 Freighter Ltd. 1)	Dublin, Ireland	0.00		-734	12,702
MSU Management-, Service- und Unternehmensberatung GmbH 1)	Landau in der Pfalz	74.00		778	145
NELO Dritte GmbH 1)	Eschborn	100.00		48	22
NELO Dritte GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	28	27
NELO Fünfte GmbH 1)	Eschborn	100.00		44	19
NELO Fünfte GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	25	23
NFC Labuan Shipleasing I Ltd. 1)	Labuan, Malaysia	100.00		1,889	5,273
NFC Shipping Fund C LLC 1)	Majuro, Marshall Islands	0.00		6,694	6,672
NOVA Achte GmbH 1)	Eschborn	100.00		42	17
NOVA Neunte GmbH 1)	Eschborn	100.00		41	16
NOVA Siebte GmbH 1)	Eschborn	100.00		42	17
NOVA Siebte GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	22	20
NTK Immobilien GmbH 1)	Hamburg	100.00		26	0
NTK Immobilien GmbH & Co. Management KG 2)	Hamburg	100.00		1,068	-160
Ocean Containerships II DIS 1)	Oslo, Norway	0.00		0	0
Ocean Giant LLC 1)	Majuro, Marshall Islands	0.00		-104	12,609
Pascon GmbH 1)	Wiesbaden	100.00		31	6
PAVONIS GmbH 1)	Eschborn	100.00		100	75
PCAM Issuance II SA Issue RV AVL 001 1)	Luxembourg, Luxembourg	0.00		n/a	n/a
PDZ Personaldienste & Zeitarbeit GmbH 5)	Darmstadt	100.00		60	0
Pension Consult-Beratungsgesellschaft für Altersvorsorge mbH 1)	Munich	100.00		1,511	108
Philip Trading Opco LLC 1)	Majuro, Marshall Islands	0.00		-85	-1,867
Phoenix Beteiligungsgesellschaft mbH 5)	Düsseldorf	100.00		108,349	0
Puffin Aircraft Leasing Ltd. 1)	Dublin, Ireland	0.00		-13	-183
Quoniam Asset Management GmbH 1)	Frankfurt am Main	88.00	100.00	37,189	22,451
Quoniam Funds Selection SICAV - Global Credit Cash Duration EUR hedged I dis 1)	Luxembourg, Luxembourg	0.00		n/a	n/a
R+V Allgemeine Versicherung Aktiengesellschaft 1) 5)	Wiesbaden	95.00		774,177	0
R+V Deutschland Real (RDR) 1)	Hamburg	0.00		n/a	n/a
R+V Dienstleistungs GmbH 1)	Wiesbaden	100.00		623	4
R+V Direktversicherung AG 1) 5)	Wiesbaden	100.00		13,320	0
R+V Erste Anlage GmbH 1)	Wiesbaden	100.00		1,055	-9
R+V INTERNATIONAL BUSINESS SERVICES Ltd., Dublin 1)	Dublin, Ireland	100.00		1,053	-1,986
R+V KOMPOSIT Holding GmbH 1) 5)	Wiesbaden	100.00		1,813,882	0
R+V Krankenversicherung AG 1)	Wiesbaden	100.00		89,485	12,000
R+V Kureck Immobilien GmbH 1)	Wiesbaden	100.00		41	4
R+V Leben Wohn GmbH & Co. KG 1)	Wiesbaden	100.00		71,400	690
R+V Lebensversicherung Aktiengesellschaft 1)	Wiesbaden	100.00		634,981	0
R+V Luxembourg Lebensversicherung S.A. 1)	Strassen, Luxembourg	100.00		330,014	48,561

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
R+V Mannheim P2 GmbH 1)	Wiesbaden	94.00		57,309	1,821
R+V Pensionsfonds AG 1)	Wiesbaden	100.00		29,353	1,900
R+V Pensionskasse AG 1)	Wiesbaden	100.00		103,133	-3,039
R+V Personen Holding GmbH 1)	Wiesbaden	100.00		1,094,609	117,118
R+V Rechtsschutz-Schadenregulierungs-GmbH 1)	Wiesbaden	100.00		277	130
R+V Service Center GmbH 1) 5)	Wiesbaden	100.00		2,869	0
R+V Service Holding GmbH 1) 5)	Wiesbaden	100.00		177,780	0
R+V Treuhand GmbH 1)	Wiesbaden	100.00		42	1
R+V Versicherung AG 5)	Wiesbaden	92.12		2,149,774	0
RC II S.a.r.l. 1)	Luxembourg, Luxembourg	90.00		9,054	-422
ReiseBank Aktiengesellschaft 1)	Frankfurt am Main	100.00		19,267	9,013
RISALIS GmbH 1)	Eschborn	100.00		45	20
RISALIS GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	20	18
RUBINOS GmbH 1)	Eschborn	100.00		137	112
RUV Agenturberatungs GmbH 1)	Wiesbaden	100.00		486	201
RV AIP S.a.r.l 1)	Luxembourg, Luxembourg	100.00		n/a	n/a
RV AIP S.C.S SICAV-SIF - RV TF 2 Infra Debt 1)	Luxembourg, Luxembourg	100.00		n/a	n/a
RV AIP S.C.S. SICAV-SIF 1)	Luxembourg, Luxembourg	99.00		n/a	n/a
S2 Shipping and Offshore Ptd Ltd. 1)	Singapore, Singapore	100.00		-9,691	-9,691
SAREMA GmbH 1)	Eschborn	100.00		51	26
SAREMA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	52.00	34	410
Scheepvaartmaatschappij Ewout B.V 1)	Schiphol, Netherlands	100.00		370	370
Schuster Versicherungsmakler GmbH 1)	Bielefeld	51.00		367	-149
Schuster Versicherungsservice GmbH 1)	Bielefeld	100.00		37	0
Schwäbisch Hall Facility Management GmbH 1)	Schwäbisch Hall	51.00		9,143	1,003
Schwäbisch Hall Kreditservice GmbH 1) 5)	Schwäbisch Hall	100.00		27,775	0
Schwäbisch Hall Wohnen GmbH Gesellschaft für wohnwirtschaftliche Dienstleistungen 1)	Schwäbisch Hall	100.00		621	3
SECURON Versicherungsmakler GmbH 1)	Hannover	51.00		707	209
Shamrock Trading Opco LLC 1)	Majuro, Marshall Islands	0.00		-19	-167
Shipping and Intermodal Investment Management Fund I LLC 1)	Majuro, Marshall Islands	0.00		53,408	53,380
Shipping and Intermodal Investment Management Fund II LLC 1)	Majuro, Marshall Islands	0.00		40,160	40,421
SHT Schwäbisch Hall Training GmbH 1)	Schwäbisch Hall	100.00		6,055	434
SIIM Marlin Holdings LLC 1)	Majuro, Marshall Islands	72.04		-645	1,468
Sinaloa Aircraft Leasing Ltd 1)	Floriana, Malta	0.00		-44	-22
Sprint Sanierung GmbH 1)	Cologne	100.00		31,611	608
SRF I Ltd. 1)	Floriana, Malta	0.00		-2,677	-2,609
SRF III Ltd. 1)	Floriana, Malta	0.00		-5,074	-5,079
Stani Trading Opco LLC 1)	Majuro, Marshall Islands	0.00		-200	-1.841
Stephenson Capital Limited 1)	George Town, Cayman Islands	0.00		-1,681	-1,681
TeamBank AG Nürnberg 2) 5)	Nuremberg	92.44		539,699	0
TEGANON GmbH 1)	Eschborn	100.00		27	2
TEGANON GmbH & Co. Immobilien KG 1) 6)	Eschborn	100.00		3	21
Terra Maris I LLC 1)	Majuro, Marshall Islands	100.00		-6,752	-6,752
Tiger Aircraft Leasing (UK) Limited 1)	London, UK	0.00		-2,351	-2,351
TILIAS GmbH 1)	Eschborn	100.00		45	20
TILIAS GmbH & Co. Immobilien KG 1)	Eschborn	50.00	76.00	25	24
TOPAS GmbH 1)	Eschborn	100.00		50	25
TOPAS GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	31	30
Twenty Holding Private Limited 1)	Singapore, Singapore	0.00		-489	478
UI Management S.a.r.l. 1)	Luxembourg, Luxembourg	100.00		n/a	n/a
UI Vario: 2 issued by Union Investment Luxembourg S.A. 1)	Luxembourg, Luxembourg	0.00		n/a	n/a
UII European Hospitality Fund 1)	Hamburg	0.00		n/a	n/a
UII Issy 3 Moulins SARL 1)	Paris, France	100.00		8	-1
UII PSD KN ImmoInvest GP GmbH 1)	Hamburg	100.00		54	23
UII SCE Immobilien GmbH & Co. KG 1)	Hamburg	100.00		n/a	n/a
UII SCE Management GP GmbH 1)	Hamburg	100.00		25	0
UII Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		22	1
UIN Union Investment Institutional Fonds Nr. 560 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 578 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 635 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 669 1)	Frankfurt am Main	0.00		n/a	n/a

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
UIN Union Investment Institutional Fonds Nr. 715 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 716 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 772 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 817 1)	Frankfurt am Main	0.00		2,222,753	-477
UIN Union Investment Institutional Fonds Nr. 825 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 833 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 834 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 839 1)	Frankfurt am Main	0.00		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 913 1)	Frankfurt am Main	0.00		n/a	n/a
UIR FRANCE 1 S.a.r.l. 1)	Paris, France	100.00		15	-7
UIR FRANCE 2 S.a.r.l. 1)	Paris, France	100.00		20	-7
UIR Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		92	2
UMB Unternehmens-Managementberatungs GmbH 1)	Wiesbaden	100.00		2,901	844
UMBI GmbH 1)	Wiesbaden	100.00		101	27
UniAbsolute Return Globalny FIZ 1)	Warsaw, Poland	0.00		n/a	n/a
UniGotówkowy Aktywa Polskie 1)	Warsaw, Poland	0.00		n/a	n/a
UniInstitutional Global Credit 1)	Luxembourg, Luxembourg	0.00		n/a	n/a
UniObligacje: Globalne Rynki Wschodzace 1)	Warsaw, Poland	0.00		n/a	n/a
Union Asset Management Holding AG 2)	Frankfurt am Main	96.57		940,464	341,275
Union Investment Austria GmbH 1)	Vienna, Austria	100.00		16,309	1,279
Union Investment Financial Services S.A. 1)	Luxembourg, Luxembourg	100.00		20,553	3,182
Union Investment Institutional GmbH 1) 6)	Frankfurt am Main	100.00		83,970	0
Union Investment Institutional Property GmbH 1) 6)	Hamburg	90.00		23,365	6,974
Union Investment Luxembourg S.A. 1)	Luxembourg, Luxembourg	100.00		209,940	45,102
Union Investment Privatfonds GmbH 1) 6)	Frankfurt am Main	100.00		460,942	0
Union Investment Real Estate Asia Pacific Pte. Ltd. 1)	Singapore, Singapore	100.00		1,020	109
Union Investment Real Estate Austria AG 1)	Vienna, Austria	94.50		6,857	700
Union Investment Real Estate France S.A.S. 1)	Paris, France	100.00		3,585	1,354
Union Investment Real Estate GmbH 2) 6)	Hamburg	94.50		150,589	44,148
Union Investment Service Bank AG 1) 6)	Frankfurt am Main	100.00		63,115	0
Union Investment Towarzystwo Funduszy Inwestycyjnych S. A. 1)	Warsaw, Poland	100.00		32,383	5,973
Union IT-Services GmbH 1) 6)	Frankfurt am Main	100.00		3,032	0
Union Service-Gesellschaft mbH 1) 6)	Frankfurt am Main	100.00		6,833	0
UniRak Nordamerika 1)	Luxembourg, Luxembourg	0.00		n/a	n/a
Unterstützungskasse der Condor Versicherungsgesellschaften GmbH 1)	Hamburg	66.67		26	0
URA Verwaltung GmbH 1)	Vienna, Austria	100.00		34	3
VAUTID (SHANGHAI) Wear Resistant Material Trading Co. Ltd. 1)	Shanghai, China	100.00		1,154	330
VAUTID Austria GmbH 1)	Marchtrenk, Austria	100.00		826	134
VAUTID GmbH 1)	Ostfildern	82.51		5,389	-101
VAUTID INDIA PRIVATE LIMITED 1)	Mumbai, India	100.00		-235	-256
VAUTID LATAM S.A. 1)	Quito, Ecuador	74.00		331	-121
VAUTID MIDDLE EAST F.Z.E 1)	Ajman Free Zone, United Arab Emirates	100.00		85	-47
VB A330 Leasing Ltd 1)	George Town, Cayman Islands	100.00		-487	-487
VisualVest GmbH 1) 6)	Frankfurt am Main	100.00		14,525	325
VMB Vorsorgemanagement für Banken GmbH 1)	Overath	100.00		53	6
VR Consultingpartner GmbH 2)	Frankfurt am Main	100.00		1,494	-478
VR DISKONTBANK GmbH 1) 5)	Eschborn	100.00		200,147	0
VR Equity Gesellschaft für regionale Entwicklung in Bayern mbH 1)	Frankfurt am Main	100.00		2,162	-81
VR Equitypartner Beteiligungskapital GmbH & Co. KG UBG 2)	Frankfurt am Main	100.00		36,021	8,193
VR Equitypartner GmbH 5)	Frankfurt am Main	100.00		69,070	0
VR Equitypartner Management GmbH 1)	Frankfurt am Main	100.00		363	18
VR FACTOREM GmbH 1) 5)	Eschborn	100.00		39,385	0
VR GbR 2)	Frankfurt am Main	100.00		204,144	0
VR HYP GmbH 1)	Hamburg	100.00		24	0
VR Kreditservice GmbH 1) 5)	Hamburg	100.00		25	0
VR Mittelstandskapital Unternehmensbeteiligungs GmbH 2)	Düsseldorf	100.00		935	40
VR Payment GmbH (CardProcess GmbH until January 3, 2019)	Frankfurt am Main	90.00		40,328	15,387
VR Real Estate GmbH 1)	Hamburg	100.00		24	0
VR Smart Guide GmbH 1)	Eschborn	100.00		507	-1,514
VR WERT Gesellschaft für Immobilienbewertung mbH 1) 5)	Hamburg	100.00		100	0
VR Zentralregulierungs GmbH 1)	Eschborn	100.00		10	15

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR-IMMOBILIEN-LEASING GmbH 1) 5)	Eschborn	100.00		14,123	0
VR-LEASING ABYDOS GmbH 1)	Eschborn	100.00		51	26
VR-LEASING ABYDOS GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	32	108
VR-LEASING AKANTHUS GmbH 1)	Eschborn	100.00		27	2
VR-LEASING AKANTHUS GmbH & Co. Immobilien KG 1)	Eschborn	100.00		3	26
VR-LEASING Aktiengesellschaft 5)	Eschborn	100.00		211,070	0
VR-LEASING ALDEBARA GmbH 1)	Eschborn	100.00		43	17
VR-LEASING ALDEBARA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	-482	1
VR-LEASING AMETRIN GmbH 1)	Eschborn	100.00		27	2
VR-LEASING AMETRIN GmbH & Co. Immobilien KG 1)	Eschborn	100.00		3	31
VR-LEASING ARINA GmbH 1)	Eschborn	100.00		227	202
VR-LEASING ARINA GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	242	5,124
VR-LEASING ARKI GmbH 1)	Eschborn	100.00		52	27
VR-LEASING ARKI GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	34	32
VR-LEASING ASINE GmbH 1)	Eschborn	100.00		47	22
VR-LEASING ASINE GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	-96	51
VR-LEASING ASOPOS GmbH 1)	Eschborn	100.00		27	2
VR-LEASING ASOPOS GmbH & Co. Immobilien KG 1)	Eschborn	100.00		3	17
VR-LEASING ATRIA GmbH 1)	Eschborn	100.00		41	16
VR-LEASING ATRIA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	55.00	21	20
VR-LEASING AVENTURIN GmbH 1)	Eschborn	100.00		40	15
VR-LEASING AVENTURIN GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	19	18
VR-LEASING BETA GmbH 1)	Eschborn	100.00		27	2
VR-LEASING BETA GmbH & Co. Immobilien KG 1)	Eschborn	100.00		3	22
VR-Leasing Beteiligungs GmbH 1)	Eschborn	100.00		105,221	21,856
VR-LEASING DELOS GmbH 1)	Eschborn	100.00		27	2
VR-LEASING DELOS GmbH & Co. Immobilien KG 1)	Eschborn	100.00		3	26
VR-LEASING DIVO GmbH 1)	Eschborn	100.00		56	31
VR-LEASING DIVO GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	39	38
VR-LEASING DOBAS GmbH & Co. Immobilien KG 1)	Eschborn	100.00		5	47
VR-LEASING ERIDA GmbH 1)	Eschborn	100.00		41	0
VR-LEASING FABIO GmbH 1)	Eschborn	100.00		37	12
VR-LEASING FABIO GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	15	14
VR-LEASING FAGURA GmbH & Co. Erste Immobilien KG 1) 6)	Eschborn	100.00		3	15
VR-LEASING FAGURA GmbH & Co. Sechste Immobilien KG 1)	Eschborn	6.00	76.00	28	21
VR-LEASING FAGURA GmbH & Co. Siebte Immobilien KG 1)	Eschborn	6.00	68.00	22	21
VR-LEASING FARINA GmbH 1)	Eschborn	100.00		39	13
VR-LEASING FARINA GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	17	16
VR-LEASING FERRIT GmbH & Co. Erste Immobilien KG 1)	Eschborn	6.00	76.00	1,012	93
VR-LEASING FERRIT GmbH & Co. Fünfte Immobilien KG 1)	Eschborn	6.00	76.00	21	19
VR-LEASING FLAVUS GmbH 1)	Eschborn	100.00		40	15
VR-LEASING FLAVUS GmbH & Co. Immobilien KG 1)	Eschborn	100.00		-1,589	-11
VR-LEASING FULVIUS GmbH 1)	Eschborn	100.00		221	196
VR-LEASING Hauptverwaltung GmbH & Co. KG 1)	Eschborn	94.80	76.00	5,000	-1
VR-LEASING IKANA GmbH 1)	Eschborn	100.00		192	167
VR-LEASING Immobilien-Holding GmbH & Co. KG 1) 6)	Eschborn	0.00	51.00	200	101
VR-LEASING IRIS GmbH 1)	Eschborn	100.00		24	-1
VR-LEASING ISORA GmbH 1)	Eschborn	100.00		240	215
VR-LEASING KOSMOS GmbH 1) 5)	Eschborn	100.00		89	0
VR-LEASING LEROS GmbH 1)	Eschborn	100.00		237	212
VR-LEASING LIMNOS GmbH 1)	Eschborn	100.00		43	18
VR-LEASING LIMNOS GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	23	22
VR-LEASING LOTIS GmbH 1)	Eschborn	100.00		344	319
VR-LEASING LOTIS GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	380	799
VR-LEASING LYRA GmbH 1)	Eschborn	100.00		55	30
VR-LEASING LYRA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	37	36
VR-LEASING MAGADIS GmbH 1)	Eschborn	100.00		74	49
VR-LEASING MAGADIS GmbH & Co. Immobilien KG 1)	Eschborn	0.00	51.00	51	61
VR-LEASING MALAKON GmbH 1)	Eschborn	100.00		37	12
VR-LEASING MALAKON GmbH & Co. Immobilien KG 1)	Eschborn	15.00	75.50	15	213
VR-LEASING MANEGA GmbH 1)	Eschborn	100.00		39	13

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR-LEASING MANEGA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	75.50	5	23
VR-LEASING MANIOLA GmbH 1)	Eschborn	100.00		25	-1
VR-LEASING MARKASIT GmbH 1)	Eschborn	100.00		24	-1
VR-LEASING MAROS GmbH 1)	Eschborn	100.00		42	17
VR-LEASING MAROS GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	22	21
VR-LEASING MARTES GmbH 1)	Eschborn	100.00		25	-1
VR-LEASING MENTHA GmbH 1)	Eschborn	100.00		26	1
VR-LEASING MENTUM GmbH 1)	Eschborn	100.00		49	23
VR-LEASING MENTUM GmbH & Co. Immobilien KG 1)	Eschborn	7.80	51.00	5,241	577
VR-LEASING METRO GmbH & Co. Objekte Rhein-Neckar KG 1)	Eschborn	100.00		-207	233
VR-LEASING MILETOS GmbH 1)	Eschborn	100.00		45	20
VR-LEASING MILETOS GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	26	25
VR-LEASING MILIUM GmbH 1)	Eschborn	100.00		40	15
VR-LEASING MILIUM GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	20	18
VR-LEASING MUNDA GmbH 1)	Eschborn	100.00		27	2
VR-LEASING MUNDA GmbH & Co. Immobilien KG 1)	Eschborn	100.00		3	58
VR-LEASING MUSCAN GmbH 1)	Eschborn	100.00		25	-1
VR-LEASING MUSTELA GmbH 1)	Eschborn	100.00		53	28
VR-LEASING NALANDA GmbH 1)	Eschborn	100.00		44	19
VR-LEASING NALANDA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	75.50	19	23
VR-LEASING NAPOCA GmbH 1)	Eschborn	100.00		40	14
VR-LEASING NAPOCA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	51.00	57	143
VR-LEASING NATANTIA GmbH 1)	Eschborn	100.00		45	1
VR-LEASING NAVARINO GmbH 1)	Eschborn	100.00		70	45
VR-LEASING NAVARINO GmbH & Co. Immobilien KG 1)	Eschborn	100.00		-195	201
VR-LEASING NESTOR GmbH 1)	Eschborn	100.00		51	25
VR-LEASING NESTOR GmbH & Co. Immobilien KG 1)	Eschborn	6.00	75.50	26	31
VR-LEASING NETTA GmbH 1)	Eschborn	100.00		57	27
VR-LEASING NETTA GmbH & Co. Immobilien KG 1) 6)	Eschborn	94.00	51.00	20	34
VR-LEASING NOVA Fünfte GmbH 1)	Eschborn	100.00		56	31
VR-LEASING ONDATRA GmbH 1)	Eschborn	100.00		72	46
VR-LEASING ONDATRA GmbH & Co. Immobilien KG 1)	Eschborn	0.00	51.00	57	55
VR-LEASING ONYX GmbH 1)	Eschborn	100.00		43	17
VR-LEASING ONYX GmbH & Co. Immobilien KG 1)	Eschborn	100.00		22	94
VR-LEASING OPAVA GmbH 1)	Eschborn	100.00		558	531
VR-LEASING OPAVA GmbH & Co. Immobilien KG 1)	Eschborn	100.00		-1,137	634
VR-LEASING OPHIR GmbH 1)	Eschborn	100.00		31	5
VR-LEASING OPHIR GmbH & Co. Immobilien KG 1)	Eschborn	100.00	83.66	-6,077	708
VR-LEASING OPTIMA GmbH 1)	Eschborn	100.00		74	49
VR-LEASING OPTIMA GmbH & Co. Immobilien KG 1)	Eschborn	0.00	51.00	-35	83
VR-LEASING ORDO GmbH 1)	Eschborn	100.00		41	15
VR-LEASING PAROS GmbH 1)	Eschborn	100.00		31	6
VR-LEASING PAROS GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	-31	10
VR-LEASING POCO GmbH & Co. Immobilien KG 1)	Eschborn	0.00	52.00	-10	36
VR-LEASING REGELSCHULE GmbH & Co. Immobilien KG 1)	Eschborn	0.00	51.00	19	18
VR-LEASING SALIX GmbH 1)	Eschborn	100.00		79	53
VR-LEASING SALIX GmbH & Co. Immobilien KG 1)	Eschborn	0.00	51.00	65	63
VR-LEASING SALONA GmbH 1)	Eschborn	100.00		35	9
VR-LEASING SALONA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	75.50	12	11
VR-LEASING SAMARA GmbH 1)	Eschborn	100.00		94	68
VR-LEASING SAMARA GmbH & Co. Immobilien KG 1)	Eschborn	100.00		87	87
VR-LEASING SANAGA GmbH 1)	Eschborn	100.00		25	0
VR-LEASING SANIDOS GmbH 1)	Eschborn	100.00		44	19
VR-LEASING SANIDOS GmbH & Co. Immobilien KG 1)	Eschborn	4.00	52.00	27	26
VR-LEASING SARITA GmbH 1)	Eschborn	100.00		42	17
VR-LEASING SARITA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	22	21
VR-LEASING SASKIA GmbH 1)	Eschborn	100.00		43	18
VR-LEASING SASKIA GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	23	21
VR-LEASING SEPIA GmbH 1)	Eschborn	100.00		31	6
VR-LEASING SEPIA GmbH & Co. Immobilien KG 1)	Eschborn	4.00	52.00	809	8
VR-LEASING SIGUNE GmbH 1)	Eschborn	100.00		43	18

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR-LEASING SIGUNE GmbH & Co. Immobilien KG 1)	Eschborn	6.00	68.00	23	22
VR-LEASING SIMA GmbH 1)	Eschborn	100.00		24	-1
VR-LEASING SINABIS GmbH 1)	Eschborn	100.00		35	9
VR-LEASING SINABIS GmbH & Co. Immobilien KG 1)	Eschborn	6.00	75.50	12	11
VR-LEASING SIRIUS GmbH 1)	Eschborn	100.00		27	2
VR-LEASING SIRIUS GmbH & Co. Immobilien KG 1) 6)	Eschborn	100.00		3	31
VR-LEASING SOLIDUS Elfte GmbH 1)	Eschborn	100.00		47	22
VR-LEASING SOLIDUS Elfte GmbH & Co. Immobilien KG 1)	Eschborn	94.00	76.00	27	26
VR-LEASING SOLIDUS Neunte GmbH 1)	Eschborn	100.00		25	0
VR-LEASING SOLIDUS Neunzehnte GmbH 1)	Eschborn	100.00		45	20
VR-LEASING SOLIDUS Neunzehnte GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	26	24
VR-LEASING SOLIDUS Sechzehnte GmbH 1)	Eschborn	100.00		42	17
VR-LEASING SOLIDUS Sechzehnte GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	22	20
VR-LEASING SOLIDUS Vierzehnte GmbH 1)	Eschborn	100.00		41	16
VR-LEASING SOLIDUS Zweite GmbH 1)	Eschborn	100.00		55	30
VR-LEASING SOLIDUS Zweite GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	37	36
VR-LEASING SOLIDUS Zwölfte GmbH 1)	Eschborn	100.00		27	2
VR-LEASING TELLUR GmbH 1)	Eschborn	100.00		47	22
VR-LEASING TELLUR GmbH & Co. Immobilien KG 1)	Eschborn	6.00	76.00	28	27
VR-ZR GmbH & Co. KG 1)	Eschborn	100.00		n/a	n/a
Wadi Funding LLC 1)	Majuro, Marshall Islands	100.00		8,555	8,555
Wadi Woraya I LLC 1)	Majuro, Marshall Islands	100.00		-3,528	-3,525
Wadi Woraya III LLC 1)	Majuro, Marshall Islands	100.00		-1,825	-1,823
Waverley Shipping Opco LLC 1)	Majuro, Marshall Islands	0.00		260	334
WBS Wohnwirtschaftliche Baubetreuungs- und Servicegesellschaft mbH 1)	Stuttgart	94.90		19,247	47
Weinmann GmbH & Co. Objekt Eichwald KG 1) 6)	Eschborn	100.00		3	48
WGZ FINANCE PUBLIC LIMITED COMPANY	Dublin, Ireland	100.00		6,747	397
WGZ Immobilien + Management GmbH 1) 5)	Münster	100.00		35	0
WGZ ImmobilienKontor GmbH 1)	Münster	100.00		67	3
WGZ ImmobilienKontor GmbH & Co. KG 1)	Münster	100.00		841	1,104
WGZ ImmobilienKontor GmbH & Co. KG 1)	Münster	100.00		841	1,104

JOINT VENTURES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
38321 & 38329 Aircraft Leasing (Cayman) Ltd. 1)	Grand Cayman, Cayman Islands	50.00	0.00	10,121	2,436
AerCap Partners I Ltd. 1)	Shannon, Ireland	0.00		n/a	n/a
AerCap Partners II Ltd. 1)	Shannon, Ireland	0.00		n/a	n/a
BAU + HAUS Management GmbH 1)	Wiesbaden	50.00		10,006	847
BEA Union Investment Management Limited 1)	Hong Kong, Hong Kong	49.00		60,315	12,764
Cella Intermodal Investment Fund LLC 1)	Majuro, Marshall Islands	50.00		n/a	n/a
Ceskomoravska stavebni sporitelna a.s. 1)	Prague, Czech Republic	45.00		323,805	34,524
D8 Product Tankers I LLC 1)	Majuro, Marshall Islands	50.00		n/a	n/a
D8 Product Tankers Investments LLC 1)	Majuro, Marshall Islands	50.00		n/a	n/a
Deutsche WertpapierService Bank AG	Frankfurt am Main	50.00		193,702	22,115
DUO PLAST Holding GmbH 1)	Lauterbach	47.43		20,132	3,209
DZ BANK Galerie im Städel Kunstverwaltungsgesellschaft mbH	Frankfurt am Main	50.00		15	-2
Genossenschafts-Kraftfutterwerk Gesellschaft mit beschränkter Haftung 1)	Braunschweig	16.85	50.00	n/a	n/a
GMS Holding GmbH 1)	Paderborn	58.89	45.00	12,993	2,836
Herakleitos 3050 LLC 1)	Majuro, Marshall Islands	50.00		n/a	n/a
Intermodal Investment Fund IV LLC 1)	Majuro, Marshall Islands	50.00		22,252	3,123
Intermodal Investment Fund VIII LLC 1)	Majuro, Marshall Islands	50.00	0.00	6,439	874
IZD-Holding S.à.r.l. 1)	Luxembourg, Luxembourg	50.30	50.00	1,280	43,275
MS Oceana Schifffahrtsgesellschaft mbH & Co. KG 1)	Hamburg	0.00		7,041	-595
MS Octavia Schifffahrtsgesellschaft mbH & Co. KG 1)	Hamburg	0.00		5,695	-1,063
Norafin Verwaltungs GmbH 1)	Mildenau	44.72		21,808	997
Prvá stavebná sporitel'na, a.s. 1)	Bratislava, Slovakia	32.50		243,381	16,272
R+V Kureck Immobilien GmbH Grundstücksverwaltung Braunschweig 1)	Wiesbaden	50.00		7,566	310
Raiffeisen Banca Pentru Locuinte S.A. 1)	Bucharest, Romania	33.32		14,187	1,102
TrustBills GmbH	Hamburg	25.00		-1,125	-2,572
Versicherungs-Vermittlungsgesellschaft des Sächsischen Landesbauernverbandes mbH 1)	Dresden	50.00		203	24
Versicherungs-Vermittlungsgesellschaft mbH des Bauernverbandes Mecklenburg-Vorpommern e.V. (VVB) 1)	Neubrandenburg	50.00		164	10
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Brandenburg (VVB) 1)	Teltow	50.00		32	3
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Sachsen-Anhalt e.V. (VVB) 1)	Magdeburg	50.00		60	5
Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse) Ltd. 1)	Tianjin, China	24.90		368,643	-1,652

ASSOCIATES

Name	Location	Shareholding	Voting rights, if different	Equity in € ’000	Profit/loss in € ’000
A330 Parts Ltd. 1)	Newark, USA	20.00		10,121	2,436
adorsys GmbH & Co. KG 1)	Nuremberg	25.89		1,340	2,218
adorsys Verwaltungs GmbH 1)	Nuremberg	25.90		29	1
Aer Lucht Limited 1)	Dublin, Ireland	47.80		n/a	n/a
Artemis Gas 1 Shipping Inc. 1)	Piraeus, Greece	20.00		n/a	n/a
Bankenkonsortium der Zenit GmbH, GbR	Düsseldorf	33.30		0	0
bbv-service Versicherungsmakler GmbH 1)	Munich	25.20		2,142	614
Bergina AS 1)	Grimstad, Norway	40.00		n/a	n/a
Danae Gas Shipping Inc 1)	Majuro, Marshall Islands	5.00		n/a	n/a
Dr. Förster Holding GmbH 1)	Neu-Isenburg	20.06		25	0
Dr. Neuberger Holding GmbH 1)	Wiesbaden	40.00		n/a	n/a
Epic Gas Ltd. 1)	Tortola, Virgin Islands	15.71	0.16	n/a	n/a
European Convenience Food GmbH 1)	Garrel	44.29		8,172	-351
European Property Beteiligungs-GmbH 1)	Frankfurt am Main	38.90	33.20	2,815	1,825
Flag Hope Shipping Limited 1)	Monrovia, Liberia	25.00		n/a	n/a
Flag Tom Shipping Limited 1)	Monrovia, Liberia	25.00		n/a	n/a
GBS Beteiligungsgesellschaft mbH 1)	Bayreuth	42.33		2,367	-454
GGB-Beratungsgruppe GmbH	Stuttgart	23.13		-1,123	-1,858
GHM Holding GmbH 1)	Erolzheim	40.00		17,219	-17
GHM MPP Reserve GmbH 1)	Regenstauf	50.00		357	-4
GHM MPP Verwaltungs GmbH 1)	Remscheid	50.00		21	-1
Global Asic GmbH 1)	Dresden	30.80		1,118	-101
Global Offshore Services B.V. 1)	Amsterdam, Netherlands	32.13		n/a	n/a
Goldeck Zetti Beteiligungsgesellschaft mbH 1)	Leipzig	39.23		31,334	684
Gram Car Carriers Holdings Pte. Ltd. 1)	Singapore, Singapore	5.88		n/a	n/a
Groneweg Verwaltungsgesellschaft mbH 1)	Greven	48.00		17,598	2,344
Hör Technologie GmbH 1)	Weiden i.d.OPf.	62.78	49.99	24,872	3,313
Hudson Chemical Tankers Ltd 1)	Middlesex, UK	25.00		n/a	n/a
Imperial Rose SA 1)	Majuro, Marshall Islands	25.00		n/a	n/a
Imperial Sea SA 1)	Majuro, Marshall Islands	25.00		n/a	n/a
Kapitalbeteiligungsgesellschaft für die mittelständische Wirtschaft in Nordrhein-Westfalen mbH - KBG -	Neuss	23.60		3,244	477
KCM Bulkers International Limited 1)	Tortola, Virgin Islands	49.00		n/a	n/a
KCM Bulkers Ltd. 1)	Tortola, Virgin Islands	49.00		n/a	n/a
KOTANI JV CO. BV 1)	Amsterdam, Netherlands	0.00		75,060	10,720
KTP Holding GmbH 1)	Bous	37.36		38,295	3,880
LogPay Transport Services GmbH 1)	Eschborn	49.02		0	276
Mandarin Containers Limited 1)	Tortola, Virgin Islands	17.01		n/a	n/a
MON A300 Leasing Ltd. 1)	George Town, Cayman Islands	20.00		73	1,560
MON Engine Parts Inc. 1)	Wilmington, USA	20.00		3,373	297
Mount Faber KS i.L. 1)	Oslo, Norway	0.00		n/a	n/a
MSEA Aframax Holdings LLC 1)	Majuro, Marshall Islands	48.00		n/a	n/a
MSEA Marlin Holdings LLC 1)	Majuro, Marshall Islands	32.19		n/a	n/a
MSN 1272&1278 Aircraft Leasing 1)	Grand Cayman, Cayman Islands	20.00		n/a	n/a
n3k Informatik GmbH 1)	Heilbronn	58.33	49.99	10,812	1,092
Ostertag DeTeWe Group GmbH 1)	Walddorfhäslach	58.52	49.90	n/a	n/a
PI-SM GmbH 1)	Ehringshausen	40.80		2,422	-155
SCL GmbH 1)	Butzbach	49.00		3,765	1,966
SRF Railcar Leasing Limited 1)	Cashel, Ireland	49.00		n/a	n/a
TAP Ltd. 1)	Hamilton, Bermuda	38.05		n/a	n/a
TES Holding Ltd. 1)	Bridgend, UK	40.00		28,308	-4,853
Touax Rail Finance 3 Ltd. 1)	Bracetown, Ireland	28.92		n/a	n/a
Treuhand- und Finanzierungsgesellschaft für Wohnungs- und Bauwirtschaft mit beschränkter Haftung. Treufinanz	Düsseldorf	33.14		1,979	-220
TREVA Entertainment GmbH i. L. 1)	Hamburg	32.70		1,269	-529
United MedTec Holding GmbH 1)	Bückeburg	41.01		9,750	230
Weisshaar Holding GmbH 1)	Deisslingen	84.94	49.92	3,668	-582
Wessel-Werk Beteiligungsverwaltung GmbH i.L. 1)	Karlsruhe	45.00		-2,088	-1,527
WÜRTT. GENO-HAUS GmbH & Co. KG	Stuttgart	29.70		35,884	1,548
ZBI Partnerschafts-Holding GmbH 1)	Erlangen	49.90		6,074	985
ZT Finance GmbH 1)	Weilheim	26.67		-21	-20

SHAREHOLDINGS OF 20% OR MORE

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
ANDROS GmbH & Co. Immobilien KG 1)	Gilching	20.00	8.00	27	99
ARDIAN Infrastructure Fund V B S.C.S., SICAV-RAIF 1)	Luxembourg, Luxembourg	31.80	0.00	n/a	n/a
Assiconf S.r.l. 1)	Turin, Italy	20.00	0.00	80	6
ASSICRA Servizi Assisurativi Banche di Credito Cooperativo Abruzzo e Molise S.r.l. 1)	Pescara, Italy	25.00	0.00	376	28
BCC RISPARMIO & PREVIDENZA S.G.R.P.A. 1)	Milan, Italy	25.00		38,393	12,806
BLE Bau- und Land-Entwicklungsgesellschaft Bayern GmbH 1)	Munich	20.00		247	-45
BRASIL FLOWERS S.A. 1)	Barbacena, Brazil	45.00		n/a	n/a
Burghofspiele GmbH 1)	Eltville	20.00		61	-14
Bürgschaftsbank Brandenburg GmbH	Potsdam	25.31		29,088	1,486
Bürgschaftsbank Mecklenburg-Vorpommern GmbH	Schwerin	30.38		16,562	212
Bürgschaftsbank Sachsen-Anhalt GmbH	Magdeburg	29.73		15,612	454
Bürgschaftsbank Thüringen GmbH	Erfurt	22.13		25,946	642
Cheyne Real Estate Credit (CRECH) Fund IV Loans SCS SICAV-SIF 1)	Luxembourg, Luxembourg	20.83		n/a	n/a
CMMT Partners L.P. 1)	Camden, USA	26.64	0.00	n/a	n/a
Corpus Sireo Health Care III SICAV-FIS 1)	Luxembourg, Luxembourg	33.33	0.00	54,751	2,388
Corpus Sireo Health Care IV SICAV-FIS 1)	Luxembourg, Luxembourg	66.67	0.00	26,209	115
Credit Suisse Global Infrastructure SCA SICAR 1)	Luxembourg, Luxembourg	30.09		320,954	107,991
DZ BANK Mikrofinanzfonds eG 2)	Frankfurt am Main	30.64	0.82	193	6
Finatem II GmbH & Co. KG 1)	Frankfurt am Main	20.20		20,149	9,537
FREUNDE DER EINTRACHT FRANKFURT Aktiengesellschaft 1)	Frankfurt am Main	32.05		4,653	-1
GbR Ottmann GmbH & Co. Südhausbau KG, München VR Hausbau AG, Stuttgart (GbR 'Ackermannbogen.de-Wohnen am Olympiapark') 1)	Munich	50.00		2	-86
GENO-Haus Stuttgart Beteiligungs GmbH	Stuttgart	33.33		30	1
GENO-Haus Stuttgart GmbH & Co. KG Verwaltungsgesellschaft	Stuttgart	45.45		13	0
GENOPACE GmbH 1) 6)	Berlin	22.49		200	0
Global Infrastructure Partners III-C2, L.P. 1)	New York, USA	27.97	0.00	n/a	n/a
Golding Mezzanine SICAV IV 1)	Munsbach, Luxembourg	49.98		11,863	1,851
GTIS Brazil II S-Feeder LP 1)	Edinburgh, UK	100.00	0.00	20,195	-9,401
Hermann-Löns-Grundstücks- und Entwicklungs GbR 1)	Münster	50.00		1,059	1,008
Kreditgarantiegemeinschaft in Baden-Württemberg Verwaltungs-GmbH	Stuttgart	20.00		1,023	0
Macquarie Asia Infrastructure Fund 2 SCSp 1)	Luxembourg, Luxembourg	50.48	0.00	n/a	n/a
Macquarie Asia Infrastructure Fund EU Feeder L.P 1)	London, UK	100.00	0.00	n/a	n/a
MB Asia Real Estate Feeder (Scot.) L.P. 1)	Edinburgh, UK	34.80	0.00	7,188	-1,634
Medico 12 GmbH & Co. KG 1)	Frankfurt am Main	99.98		1,869	301
Nuveen Immobilien GmbH 1)	Frankfurt am Main	50.00		132	10
Nuveen Immobilien GmbH & Co. GB I KG 1)	Frankfurt am Main	73.91	73.21	20,888	2,759
paydirekt GmbH	Frankfurt am Main	33.33		16,278	-4,421
PT. VAUTID WEAR TECHNOLOGY INDONESIA 1)	Tangerang (Banten), Indonesia	50.00		130,427	9,283
RV-CVIII Holdings, LLC 1)	Camden, USA	100.00		39,544	1,072
Schroder Italien Fonds GmbH & Co. KG 1)	Frankfurt am Main	23.08	19.74	728	-26
Schroder Property Services B.V. S.à.r.l. 1)	Amsterdam, Netherlands	30.00		255	87
Technology DZ Venture Capital Fund I GmbH & Co. KG i.L. 1)	Munich	34.33		7,595	-96
TF H III Technologiefonds Hessen Gesellschaft mit beschränkter Haftung	Wiesbaden	25.00		5,597	-87
TF H Technologie-Finanzierungsfonds Hessen Gesellschaft mit beschränkter Haftung (TF H GmbH) i.L.	Wiesbaden	33.33		570	-2
Tishman Speyer Brazil Feeder (Scots/D), L.P. 1)	Edinburgh, UK	100.00		21,901	2,539
Tishman Speyer European Real Estate Venture VIII Parallel SCSp 1)	Luxembourg, Luxembourg	55.88	0.00	n/a	n/a
Tishman Speyer European Strategic Office Fund Feeder, L.P. 1)	London, UK	97.18		19,895	7,249
TXS GmbH 1)	Ellerau	24.50		1,498	616
VAUTID & HUIFENG (WUHU) Wear Resistant Material Co. Ltd. 1)	Wuhu, China	50.00		730	108
VAUTID Arabia Coating & Treatment of Metals LLC 1)	Ras Al Khaimah, United Arab Emirates	24.50	0.00	196	-37
Vautid North America, Inc. 1)	Carnegie, USA	100.00	0.00	-311	36
VBI Beteiligungs GmbH 1)	Vienna, Austria	24.50		623	-292
VR-NetWorld GmbH 2)	Bonn	43.48		5,633	384
ZhangJiaGang Vautid Yao Yu Wear Resistance Material Co., Ltd. 1)	Yangshe Town, China	50.00		201	67

MORE THAN 5% OF VOTING RIGHTS (LARGE CORPORATIONS)

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Banco Cooperativo Español S.A.	Madrid, Spain	12.02		503,220	36,391
DEPFA BeteiligungsHolding II Gesellschaft mit beschränkter Haftung 1)	Düsseldorf	10.00		240	-16
EDEKABANK Aktiengesellschaft	Hamburg	8.35		157,870	6,091
equensWorldline SE	Utrecht, Netherlands	11.89		862,859	20,622
EURO Kartensysteme GmbH	Frankfurt am Main	19.60		11,835	199
PANELLINIA BANK SOCIETE ANONYME (under special liquidation)	Athens, Greece	8.42	5.28	50,143	-12,637
Protektor Lebensversicherungs-AG 1)	Berlin	5.27		105,796	384
Raiffeisendruckerei GmbH 1)	Neuwied	7.88		8,914	3,345
SCHUFA Holding AG 1)	Wiesbaden	17.94		88,595	29,348

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
'Hotel Wagramerstrasse 8' Errichtungs- und BetriebsgmbH & Co KG 1)	Vienna, Austria	0.00		23,896	1,486
ABE Clearing S.A.S a Capital Variable	Paris, France	1.92		24,722	4,321
AERS Consortio AG 1)	Stuttgart	16.50		125	-19
Airport Garden Services and Business Center S.A. 1)	Brussels-Zaventem, Belgium	0.33		273	184
AKA Ausfuhrkredit-Gesellschaft mit beschränkter Haftung	Frankfurt am Main	0.31		238,732	11,080
Akademie Badischer Volksbanken und Raiffeisenbanken GmbH 1)	Karlsruhe	0.03		n/a	0
Almack Mezzanine I LP 1)	London, UK	9.82		6	64,126
Anlegerentschädigung von Wertpapierfirmen GmbH 1)	Vienna, Austria	0.57	1.61	n/a	n/a
Architrave GmbH 1)	Berlin	13.00		n/a	n/a
Assicoop-Assicurazioni Cooperative S.r.l. 1)	Catania, Italy	0.41	0.00	n/a	n/a
assistance partner GmbH & Co. KG 1)	Munich	5.01	0.00	1,246	0
Bank Polskiej Spoldzielczosci Spolka Akcyjna	Warsaw, Poland	1.00		189,384	362
Baro Beteiligungs-GmbH & Co. KG 1)	Münster	5.10		500	-1.426
BayBG Bayerische Beteiligungsgesellschaft mbH	Munich	9.38		232,843	6,129
Bayerische Raiffeisen- Beteiligungs-Aktiengesellschaft 2)	Beilngries	1.85		846,313	33,848
Berliner Volksbank eG 1)	Berlin	0.00	0.10	1,029,942	19,628
Beteiligungs-Aktiengesellschaft der bayerischen Volksbanken 1)	Pöcking	1.14		232,305	7,409
BGG Bayerische Garantiegesellschaft mit beschränkter Haftung für mittelständische Beteiligungen	Munich	13.15		51,389	2,653
Blackrock Renewable Income Europe Fund 1)	London, UK	7.69		n/a	n/a
Blackstone Real Estate Partners Europe III L.P. 1)	New York, USA	1.62	0.00	70	644,548
Blackstone Real Estate Partners International I.E. L.P. 1)	New York, USA	9.77		17	3,051
BTG Beteiligungsgesellschaft Hamburg mbH	Hamburg	10.00		4,322	163
Bürgschaftsbank Bremen GmbH	Bremen	4.86		7,400	562
Bürgschaftsbank Hessen GmbH	Wiesbaden	15.87		19,989	827
Bürgschaftsbank Nordrhein-Westfalen GmbH Kreditgarantiegemeinschaft	Neuss	15.75		35,440	1,282
Bürgschaftsbank Rheinland-Pfalz GmbH	Mainz	14.31		16,605	79
Bürgschaftsbank Sachsen GmbH	Dresden	14.66	16.59	42,015	1,645
Bürgschaftsbank Schleswig-Holstein GmbH	Kiel	11.79		40,182	971
BürgschaftsGemeinschaft Hamburg GmbH	Hamburg	6.36		25,243	744
Caprese S.A. 1)	Brussels-Zaventem, Belgium	0.00		4,766	-457
Cash Logistik Security AG 1)	Düsseldorf	4.10		2,520	-1,481
Cassa Centrale Banca - Credito Cooperativo del Nord Est Società per Azioni	Trento, Italy	3.69		1,073,685	13,431
Celt S. A. 1)	Kraków, Poland	4.44	0.00	n/a	n/a
Centrast S. A. 1)	Warsaw, Poland	0.64		n/a	n/a
CLS Group Holdings AG	Lucerne, Switzerland	0.69		518	1,904
Coop System S.p.A. 1)	Rome, Italy	1.97		n/a	n/a
Copenhagen Infrastructure III K/S 1)	Copenhagen K, Denmark	5.77	0.00	n/a	n/a
Cruz Martins & Wahl Lda. 1)	Lousado, Portugal	10.00		7,415	-264
Curzon Capital Partners III LP 1)	London, UK	11.99	0.00	n/a	n/a
Curzon Capital Partners IV LP 1)	London, UK	10.73	0.00	0	0
DePfa Beteiligungsholding III Gesellschaft mit beschränkter Haftung 1)	Düsseldorf	0.40		318	-15
Deutsche Bauernsiedlung - Deutsche Gesellschaft für Landentwicklung (DGL) mbH 1)	Frankfurt am Main	16.26		6,681	-122
Deutsche Börse Commodities GmbH	Frankfurt am Main	16.20	14.48	6,768	4,016
Deutscher Genossenschafts-Verlag eG 2)	Wiesbaden	1.54	1.37	10,344	1,414
DG ANLAGE Holland-Fonds 'Nieuwegein, 's-Hertogenbosch' GmbH & Co. KG (DGI 48)	Frankfurt am Main	0.57		0	3,225
DG IMMOBILIEN MANAGEMENT Gesellschaft mbH	Frankfurt am Main	5.01		5,406	1,461
DG Immobilien-Anlagegesellschaft 'Berlin, Pariser Platz 3' Dr. Neumann & Prüske KG (DGI 43) i.L.	Frankfurt am Main	6.24		10,942	324
DG Immobilien-Anlagegesellschaft Nr. 32 'Chemnitz, Essen' Schütze & Dr. Neumann KG i.L.	Frankfurt am Main	0.18		283	-311
DG Immobilien-Anlagegesellschaft Nr. 34 'Berlin, Darmstadt, Frankfurt' Schütze & Dr. Neumann KG i.L.	Frankfurt am Main	0.06		2,901	22
DG Immobilien-Anlagegesellschaft Nr. 35 'Berlin, Frankfurt' Prüske & Dr. Neumann KG i.L.	Frankfurt am Main	0.07		3,475	4,444
DG Immobilien-Anlagegesellschaft Nr. 36 'Seniorenresidenz Oberursel' Kreft & Dr. Neumann KG i.L.	Frankfurt am Main	0.26		1	16,572
DG Immobilien-Anlagegesellschaft Nr. 37 'Berlin-Wegedornstrasse' GbR mit quotaler Haftung i.L.	Frankfurt am Main	0.66		1,115	-7
DG IMMOBILIEN-Objektgesellschaft 'Stuttgart, Industriestrasse' Kreft & Dr. Neumann KG (DGI 49) i.L.	Frankfurt am Main	0.98		352	89
DI Rathaus-Center Pankow Nr.35 KG 1)	Düren	3.86	0.00	n/a	n/a

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Domus Beteiligungsgesellschaft der Privaten Bausparkassen mbH Berlin 1)	Berlin	14.13		13	-2
EDD AG i.L. 2)	Düsseldorf	9.99		27,792	-3,009
EIG Energy Fund XVI (Scotland) L.P. 1)	Edinburgh, UK	14.02	0.00	180,318	-2,536
Euro Capital S.A.S. 1)	Metz, France	6.67		32,736	1,659
European Property Investors Special Opportunities, L.P. 1)	London, UK	6.35	0.00	23,003	0
European Property Investors, L. P. 1)	London, UK	6.50		0	0
Evonik Projekt-Beteiligungs-GmbH & Co. KG 1)	Essen	1.00	0.00	343,141	-32
EXTREMUS Versicherungs-Aktiengesellschaft 1)	Cologne	5.00		64,740	300
Fiducia & GAD IT AG 2)	Frankfurt am Main	0.35		447,211	20,644
FIDUCIA Mailing Services eG 2)	Karlsruhe	0.12		81	0
Flugplatz Schwäbisch Hall GmbH 1)	Schwäbisch Hall	2.00		49	0
GAD Beteiligungs GmbH & Co. KG 2)	Münster	2.28		117,992	3,001
GBK Holding Gmbh & Co. KG 1)	Kassel	0.02		470,693	10,691
GDV Dienstleistungs-GmbH 1)	Hamburg	2.82		26,529	-515
German Equity Partners IV GmbH & Co. KG 1)	Frankfurt am Main	4.36		241,163	37,659
GLADBACHER BANK Aktiengesellschaft von 1922	Mönchengladbach	17.53		39,278	2,748
GMS Mitarbeiter Beteiligungsgesellschaft UG & Co.KG 1)	Münster	4.00	0.00	993	-7
Golding Mezzanine SICAV III 1)	Munsbach, Luxembourg	1.30		199,401	39,212
Grand Hotel Heiligendamm GmbH & Co. KG Fundus Fonds Nr. 34 1)	Disternich	1.90	0.00	0	0
Gründerfonds Ruhr GmbH & Co. KG 1)	Essen	7.25		n/a	n/a
HANDWERKSBAU NIEDERRHEIN AKTIENGESELLSCHAFT	Düsseldorf	10.15		23,563	1,610
Hines European Value Fund SCSp 1)	Luxembourg, Luxembourg	13.87		n/a	n/a
immigon portfolioabbau ag	Vienna, Austria	3.79		673,679	248,509
Immo Feest en Cultuurpaleis Oostende SA 1)	Brussels, Belgium	0.00		16,524	403
Interessengemeinschaft Frankfurter Kreditinstitute GmbH	Frankfurt am Main	7.01		24,619	8,937
IVS Immobilien GmbH 1)	Schiffweiler	6.00		26	0
K in Kortrijk S.A. 1)	Brussels, Belgium	0.00		92,110	-707
Karen Notebook S. A. 1)	Warsaw, Poland	2.17		n/a	n/a
KLAAS MESSTECHNIK GmbH 1)	Seelze-Harenberg	15.00		28	0
KLV BAKO Vermittlungs-GmbH	Karlsruhe	10.00		224	9
Konsortium der Absatzfinanzierungsinstitute plettac-assco GbR	Wuppertal	0.00	7.08	n/a	n/a
Kreditgarantiegemeinschaft der Freien Berufe Baden-Württemberg Verwaltungs GmbH	Stuttgart	4.76		153	0
Kreditgarantiegemeinschaft der Industrie, des Verkehrsgewerbes und des Gastgewerbes Baden-Württemberg Verwaltungs-GmbH	Stuttgart	15.28		1,300	0
Kreditgarantiegemeinschaft des bayerischen Gartenbaues GmbH	Munich	9.07		649	0
Kredit-Garantiegemeinschaft des bayerischen Handwerks Gesellschaft mit beschränkter Haftung	Munich	12.00		4,846	0
Kreditgarantiegemeinschaft des Gartenbaues Baden-Württemberg Verwaltungs-GmbH	Stuttgart	12.00		138	0
Kreditgarantiegemeinschaft des Handels Baden-Württemberg Verwaltungs-GmbH	Stuttgart	10.05		1,022	0
Kreditgarantiegemeinschaft des Handwerks Baden-Württemberg Verwaltungs-GmbH	Stuttgart	10.05		1,001	0
Kreditgarantiegemeinschaft des Hotel- und Gaststättengewerbes in Bayern GmbH	Munich	9.66		4,359	0
Kreditgarantiegemeinschaft für den Handel in Bayern GmbH	Munich	7.19		6,317	0
Kunststiftung Baden-Württemberg GmbH 1)	Stuttgart	0.50		2,899	-17
Les Grands Pres S.A. 1)	Brussels-Zaventem, Belgium	0.00	0.11	51,504	3,485
Macquarie European Infrastructure Fund 4 L.P. 1)	St. Peter Port, Guernsey	5.70	0.00	1,392,438	7,874
Maritim Hotel Königswinter Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG 1)	Bad Salzuflen	6.00	24.50	n/a	n/a
MBG H Mittelständische Beteiligungsgesellschaft Hessen GmbH	Wiesbaden	16.26		10,891	444
MBG Mittelständische Beteiligungsgesellschaft Baden-Württemberg Gesellschaft mit beschränkter Haftung	Stuttgart	9.94		72,488	5,540
MBG Mittelständische Beteiligungsgesellschaft Rheinland-Pfalz mbH	Mainz	9.80	11.11	35,400	1,334
MBG Mittelständische Beteiligungsgesellschaft Schleswig-Holstein mbH	Kiel	14.59	15.22	39,021	2,978
Mittelständische Beteiligungsgesellschaft Berlin-Brandenburg mbH	Potsdam	8.89		20,061	1,783
Mittelständische Beteiligungsgesellschaft Mecklenburg-Vorpommern mbH	Schwerin	16.00		14,429	288
Mittelständische Beteiligungsgesellschaft Niedersachsen (MBG) mbH	Hannover	19.92		13,638	507
Mittelständische Beteiligungsgesellschaft Sachsen mbH	Dresden	9.38		46,694	1,965
Mittelständische Beteiligungsgesellschaft Sachsen-Anhalt (MBG) mbH	Magdeburg	19.84		23,304	434
Mittelständische Beteiligungsgesellschaft Thüringen mbH	Erfurt	10.28		24,944	1,214
MORIO GmbH & Co. Immobilien KG 1)	Wegberg	6.00	24.00	n/a	n/a
Münchener Hypothekenbank eG 2)	Munich	1.24	1.25	1,343,867	46,252

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Munster S.A. 1)	Luxembourg, Luxembourg	0.11		n/a	n/a
NELO Vierte GmbH & Co. Immobilien KG 1)	Waldems	6.00	24.00	3	4
Niedersächsische Bürgschaftsbank (NBB) GmbH	Hannover	17.68		26,397	1,934
Norddeutsche Genossenschaftliche Beteiligungs-Aktiengesellschaft 1)	Hannover	0.55		1,322,633	41,374
Oberbergische Aufbau-Gesellschaft mit beschränkter Haftung	Gummersbach	6.09		1,966	44
Opción Jamantab S. A. DE C. V. 1)	Mexico City, Mexico	0.00		n/a	n/a
Partners Group Global Mezzanine 2007 S.C.A., SICAR 1)	Luxembourg, Luxembourg	2.24		76,442	4,186
PAXOS GmbH & Co. KG 1)	Pullach i. Isartal	6.00	9.80	n/a	n/a
Prosa Beteiligungs GmbH & Co. KG 1)	Frankfurt am Main	15.63		n/a	n/a
Prosolis GmbH The Solution House i.L. 1)	Fulda	6.00		n/a	n/a
Raiffeisen Waren-Zentrale Rhein-Main eG	Cologne	2.03		123,110	816
Raiffeisen-Kassel A-Beteiligungs GmbH & Co. KG	Kassel	8.22		40,415	295
Raiffeisen-Kassel B-Beteiligungs GmbH & Co. KG	Kassel	8.22		40,659	295
Royale 120 New Building S.A. 1)	Brussels-Zaventem, Belgium	0.00		43,697	907
Royale 120 S.A. 1)	Brussels-Zaventem, Belgium	0.01		833	13
RREEF Pan-European Infrastructure Feeder GmbH & Co. KG 1)	Eschborn	17.70		364,623	-146
Rund Vier GmbH & Co. KG 1)	Vienna, Austria	0.00		47,707	3.397
S.W.I.F.T. Society for Worldwide International Financial Telecommunication 2)	La Hulpe, Belgium	0.26		394,698	81,079
Saarländische Wagnisfinanzierungsgesellschaft mbH	Saarbrücken	2.59		5,419	-915
SALEG Sachsen-Anhaltinische Landesentwicklungs GmbH 1)	Magdeburg	1.15		14,428	587
Sana Kliniken AG 1)	Munich	0.69		413,693	38.288
Schulze-Delitzsch-Haus, eingetragene Genossenschaft 1)	Bonn	0.95		549	27
Sechzehnte Gamma Trans Leasing Verwaltungs-GmbH & Co. Finanzierungs-Management KG i.L. 1)	Nidderau	16.51		n/a	n/a
SGB-Bank Spólka Akcyjna	Poznań, Poland	0.38		185,051	764
SIGNA Prime Selection AG 1)	Innsbruck, Austria	5.00		n/a	n/a
Société de la Bourse de Luxembourg S.A. 1)	Luxembourg, Luxembourg	0.06		n/a	n/a
Süddeutsche Zuckerrübenverwertungs-Genossenschaft eG	Ochsenfurt	4.44	4.55	182,258	1,961
Target Partners Capital GmbH & Co. KG 1)	Munich	10.00	10.01	535	0
Technologiezentrum Schwäbisch Hall GmbH 1)	Schwäbisch Hall	4.17	5.56	569	62
Teko - Technisches Kontor für Versicherungen Gesellschaft mit beschränkter Haftung 1)	Düsseldorf	10.00	0.00	81	30
The Co-operators Group Ltd. 1)	Guelph, Canada	3.60		n/a	n/a
True Sale International GmbH	Frankfurt am Main	7.69		4,928	119
Ufficio Centrale Italiano di Assistenza Assicurativa Automobilisti in Circolazione Internazionale -U.C.I. Societe consortie a R.L. 1)	Milan, Italy	0.09		n/a	n/a
UIR Belgique 1 S.A. 1)	Brussels, Belgium	0.13		592	-383
UIR Belgique 2 S.A. 1)	Brussels, Belgium	0.01		49,177	1,322
UIR Le Président 1 1)	Brussels-Zaventem, Belgium	0.00	0.06	4,310	-931
UIR Le Président 2 1)	Brussels-Zaventem, Belgium	0.00		361	-42
UIR MU III S.A. de C.V. 1)	Mexico City, Mexico	0.00		n/a	n/a
Visa Inc.	San Francisco, USA	0.00		29,686,600	8,992,580
Vorgebirgs-Residenz Bonn-Endenich GmbH & Co. Kommanditgesellschaft	Unterschleissheim	5.00		102	0
VR-Bank Schwäbisch Hall eG 1)	Schwäbisch Hall	0.01		116,485	4,482
WESTFLEISCH Finanz AG 1)	Münster	0.36		82,669	0
WN Real Estate GmbH & Co. KG 1)	Weilheim	6.00		28	454
WRW Wohnungswirtschaftliche Treuhand Rheinland-Westfalen Gesellschaft mit beschränkter Haftung i.L.	Düsseldorf	2.73		n/a	n/a
ZAWISLA Immobilien GmbH + Co. KG 1)	Jockgrim	6.00	24.00	25	15
ZG Raiffeisen eG	Karlsruhe	1.05	0.02	81,049	2,513
Zweite EMH Grundstücksverwaltung GmbH & Co. KG 1)	Minden	5.20	24.50	n/a	n/a

1) Held indirectly.

2) Including shares held indirectly.

3) A letter of comfort exists.

4) A subordinated letter of comfort exists.

5) Profit-and-loss transfer agreement with DZ BANK (direct or indirect).

6) The company makes use of the exemptions provided for under section 264b HGB.

n/a = no figures available.

Responsibility statement

To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the group in accordance with German principles of proper accounting, and the group management report includes a fair review of the development and performance of the business and the position of the group, together with a description of the material opportunities and risks associated with the expected development of the group.

Frankfurt am Main, March 5, 2019

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

The Board of Managing Directors

Fröhlich	Dr. Riese	Berghaus	Dr. Brauckmann
Brouzi	Köhler	Speth	Ullrich

Independent auditor’s report

To DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main

Report on the audit of the consolidated financial statements and of the group management report

Opinions

We have audited the consolidated financial statements of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, and its subsidiaries (the Group), which comprise the consolidated income statement and consolidated statement of comprehensive income for the financial year from 1 January 2018 to 31 December 2018, and the consolidated balance sheet as at 31 December 2018, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from 1 January 2018 to 31 December 2018, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, for the financial year from 1 January 2018 to 31 December 2018.

In our opinion, on the basis of the knowledge obtained in the audit,

– the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e (1) HGB ["Handelsgesetzbuch": German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at 31 December 2018 and of its financial performance for the financial year from 1 January 2018 to 31 December 2018, and
– the accompanying group management report as a whole provides an appropriate view of the Group’s position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to Sec. 322 (3) Sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Sec. 317 HGB and the EU Audit Regulation (No 537/2014, referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor’s responsibilities for the audit of the consolidated financial statements and of the group management report" section of our auditor’s report. We are independent of the group entities in accordance with the requirements of European law and

German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Art. 10 (2) f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Art. 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Key audit matters in the audit of the consolidated financial statements

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January 2018 to 31 December 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon; we do not provide a separate opinion on these matters.

Below, we describe what we consider to be the key audit matters:

1. Recognition and measurement of the restructuring provision in connection with the “Verbund First 4.0” programme

Reasons why the matter was determined to be a key audit matter

In connection with the “Verbund First 4.0” strategy presented by the Board of Managing Directors of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main (DZ BANK), in financial year 2018, a socially acceptable reduction in headcount for 2020 and subsequent years was announced. Following discussion in the Supervisory Board, this was communicated at an employee meeting.

As of the reporting date, the Board of Managing Directors of DZ BANK recognised a restructuring provision for the headcount reduction. In light of the material significance and the use of judgement, the recognition and measurement of the restructuring provision was a key audit matter.

Auditor’s response

Under IAS 37, a restructuring provision can only be recognised if there is a present legal or constructive obligation which will lead to a probable outflow of resources whose amount can be reliably estimated. On the basis of the negotiation documents available (e.g., memorandum of understanding and the current redundancy plan) and communication with the workforce, the central works council and the Supervisory Board, and drawing on past experience of previous restructuring programmes, we assessed whether a present obligation exists in the financial year and whether an outflow of resources is probable. In addition, on the basis of the planning documents provided we examined whether the obligation can be estimated reliably (audit of the basis for the provision).

We also assessed the measurement of the restructuring provision in relation to the requirements of IAS 37 (audit of the amount of the provision). In so doing, we obtained an understanding of the forecast provided with regard to the underlying assumptions such as the planned utilisation and costs for each headcount reduction model and compared it with the Group’s past experience from previous restructuring programmes.

Our procedures did not lead to any reservations relating to the recognition and measurement of the restructuring provision in connection with the “Verbund First 4.0” programme.

Reference to related disclosures

With regard to the recognition and measurement policies applied for the restructuring provision, we refer to the information provided in the note 26 of the notes to the consolidated financial statements; for explanations about the "Verbund First 4.0" programme and the related restructuring measures we refer to the information in section I.1 of the group management report.

2. Measurement of home savings provisions

Reasons why the matter was determined to be a key audit matter

Home savings provisions primarily comprise provisions for loyalty bonuses and interest bonuses granted under certain scales by the group company Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (BSH). The amount of the provisions to be recognised is determined on the basis of the results of the collective simulation (building society forecast). The determination of the underlying probabilities of customer behaviour (e.g., claiming of a loyalty bonus) is based on assumptions relating to the savers' future behaviour on the basis of historical data and the forecast capital market rate; these assumptions have a significant effect on the measurement of the provisions. The amount of the provisions thus determined is tested for plausibility by reference to a supplementary expiry simulation using expert estimates of the effect of measures to reduce claims of loyalty and interest bonuses. The forecast quality of the collective simulation model is tested annually during the validation process, by, among other things, backtesting.

In light of the complexity of the simulation models and the necessary use of assumptions and estimates subject to uncertainty with a significant effect on the amount of the provisions, the measurement of home savings provisions was a key audit matter.

Auditor's response

We assessed the design and operating effectiveness of the internal control system with regard to the process for determining the amount of the provisions for loyalty bonuses and interest bonuses granted under certain scales.

We checked the methodology and the clerical accuracy of the calculations of the amount of the provisions on the basis of the results of the collective simulation. In so doing, we examined the model used to determine whether the significant estimation inputs are included in the model and whether the model chosen with the related model assumptions appropriately determines the provision amounts within the scope of estimation accuracies customary in the industry for mathematically similar models.

We also checked the expert estimate obtained by the Institution's Board of Managing Directors about the effectiveness of the measures to reduce claims of loyalty and interest bonuses and their consideration in the building society simulation model.

In order to validate the estimation inputs, we analysed the Group's current calculations by reference to historical data and the periods used and their weighting in the model by comparing the results of the current validation report with the inputs estimated in previous years, allowing for the historical forecast accuracy.

For these reviews of the building society simulation model, we used specialists in the audit team who have particular expertise in the area of building society mathematics.

Our procedures did not lead to any reservations relating to the measurement of the home savings provisions.

Reference to related disclosures

Information on the measurement of home savings provisions is provided in note 26 of the notes to the consolidated financial statements.

3. Measurement of the gross provision for claims outstanding

Reasons why the matter was determined to be a key audit matter

The gross provision for claims outstanding includes the provisions for known claims from direct non-life business and reinsurance business and the provision for unknown direct non-life claims of the R+V Subgroup; they are measured in accordance with IFRS 4.13 and Sec. 341g HGB.

The measurement of the gross provision for known claims requires estimates and entails uncertainties. With regard to the valuation of direct non-life insurance, this relates in particular to the assumptions made by the Board of Managing Directors of the Subgroup about the future claims rate trend on the basis of knowledge of the settlement of similar claims.

In reinsurance, the estimates are primarily based on the instructions of the competent functional department on policy level, the related segment settlement patterns from the actuarial claims forecast and the respective terms of the insurance policy and on the previous year's estimates and the actual settlement. Uncertainties arise in particular in assessing the occurrence and amount of major claims and in the event of differences in the interpretation of legal and contractual bases.

The gross provision for unknown claims from direct non-life business is calculated using an actuarial method, which also requires estimates, especially of the expected number and indemnification amount for late claims, determined on the basis of a historical observation period of 5 years, or 15 years in some cases.

The gross provision for claims outstanding is a major liability item in the consolidated balance sheet. In light of the large number of individually valued claims and the necessary use of judgement and estimates, the measurement of the gross provision for outstanding claims was a key audit matter.

Auditor's response

We examined the gross provision for known claims from direct non-life business and from reinsurance business by reference to the processing of individual claims to determine whether the process for processing and provisioning claims – from the notice of claims to the accounting for claims in the consolidated balance sheet – is appropriately designed so as to ensure complete and correct recognition. We tested the design and operating effectiveness of selected controls which are in place.

In addition, for a risk-based sample of direct non-life claims, we examined whether the provisions recognised for known claims are sufficient on the basis of the information and insights available as at the reporting date. Furthermore, with the aid of data analytics, we analysed the quality of data underlying this claims provision by examining the sum and age structure of the individual claims.

To assess the adequacy of the measurement of the gross provision for known and unknown claims from reinsurance business, we analysed the actuarial estimation techniques used and examined a risk-based sample of individual claims provisions. In addition, we analysed the mis-estimation (difference between the original invoices actually received in the following year and the estimated values recognised in the previous year).

In direct non-life insurance, we also analysed the claims ratios and claims averages by referring to multiple-year comparisons in order to identify any anomalies in the measurement.

For our audit of the measurement of the gross provision for unknown direct non-life claims we examined the data used in the calculation in the form of the claims register for completeness and analysed and examined the adequacy of the calculations for the underlying expected extrapolated future claims figures. In addition, we examined the procedure for determining estimates of expected indemnification amounts to identify whether judgement was used within a plausible range to determine indemnification amounts.

Furthermore, to assess the adequacy of the measurement of the gross provision for known and unknown claims from direct non-life business and from reinsurance business, we performed our own claims forecasts on the basis of statistical methods and used our best estimate for each type of claim as a benchmark for assessing the measurement of the aggregated individual provisions.

We used our own actuaries in the course of our audit.

Our procedures did not lead to any reservations relating to the measurement of the gross provision for outstanding claims.

Reference to related disclosures

Information on the measurement of the gross provision for outstanding claims is provided in note 11 of the notes to the consolidated financial statements.

4. Measurement of the gross benefit reserve allowing for the interest rate obligations entered into in respect of insured persons

Reasons why the matter was determined to be a key audit matter

The measurement of the gross benefit reserve for life insurance policies takes into account the obligations of the various subgroup entities to policyholders. The gross benefit reserve is determined in accordance with IFRS 4.13 in conjunction with Sec. 341f HGB and Sec. 25 RechVersV ["Verordnung über die Rechnungslegung von Versicherungsunternehmen": German Insurance Accounting Directive] in accordance with regulatory requirements and contains a range of assumptions about biometrics (including mortality or longevity and occupational incapacity), contract settlement (cancellation and lump-sum payment rates), and on costs and interest rates for insurance liabilities.

In accordance with Sec. 341e (1) HGB, the various subgroup entities are required to recognise technical reserves also to the extent deemed necessary according to prudent business judgement to ensure that insurance liabilities may be fulfilled at all times.

In particular, the interest rate obligations entered into in respect of insured persons must be considered in accordance with Sec. 341f (2) HGB in conjunction with Sec. 5 (3) and (4) DeckRV ["Deckungsrückstellungsverordnung": German Benefit Reserve Ordinance] in recognising the gross benefit reserve if the current or expected income from the assets of the various subgroup entities is not sufficient to meet these obligations. This leads to recognition of a supplementary change-in-discount-rate provision, as part of the gross benefit reserve, which comprises the supplementary change-in-discount-rate reserve (new policies) and an addition to the discount rate reserves (existing policies). Options exist and judgement is used in this process; for the supplementary change-in-discount-rate reserve, this relates in particular to assumptions about policyholder behaviour, while for the addition to the discount rate reserves it relates to the determination of the regulatory requirements to be met.

In light of the estimation processes and the related use of judgement and given the amount, the measurement of the gross benefit reserve in conjunction with the interest rate obligations entered into in respect of insured persons was a key audit matter.

Auditor's response

During our audit we walked through the process for determining the gross benefit reserve (including the supplementary change-in-discount-rate provision) and assessed and tested the design and operating effectiveness of selected controls implemented in this process. The tested controls cover, among other things, the completeness and correctness of the portfolio.

In addition, we performed analytical and substantive procedures. For example, we developed our own expectation by extrapolating the gross benefit reserve on the basis of the profit allocations of recent years and the current development of the portfolio and compared this expectation with the reported values. In addition, we recalculated the gross benefit reserve and the supplementary change-in-discount-rate provision for selected subportfolios or policies. In addition, we performed ratio and time series analyses in order to analyse the development of the gross benefit reserve overall and for subportfolios or components thereof over time.

In order to audit the adequacy of the calculation assumptions used to calculate the gross benefit reserve, especially in respect of the options allowed under commercial law for the calculation of the supplementary change-in-discount-rate reserve, we critically appraised the derivation of the calculation assumptions on the basis of the historical and current portfolio development, profit allocation and the future expectation of the subgroup's Board of Managing Directors regarding policyholder behaviour. When assessing the adequacy of the calculation assumptions used, we referred in particular to the recommendations and publications of DAV e.V. and BaFin ["Bundesanstalt für Finanzdienstleistungsaufsicht": German Federal Financial Supervisory Authority].

In addition, we examined whether an addition to the discount rate reserve in the relevant portfolio was in accordance with the approved business plans and notifications pursuant to Sec. 143 VAG ["Versicherungsaufsichtsgesetz": German Insurance Supervision Act] and in compliance with the other regulatory requirements. We assessed changes in the valuation inputs by referring to the historical actuarial data of recent years. Furthermore, we analysed and tested the plausibility of the addition to the discount rate reserve – also on the level of subportfolios – by comparing data from multiple years.

In addition, we critically reviewed the explanatory report and the adequacy report of the responsible actuary of the various subgroup entities and the results of the annual forecast in accordance with the requirement of BaFin to determine whether all risks with regard to the adequacy of the calculation assumptions and the ability to fulfill insurance policies at all times were considered in measuring the benefit reserve.

We used our own actuaries in the course of our audit.

Our procedures did not lead to any reservations relating to the measurement of the gross benefit reserve including the interest rate obligations.

Reference to related disclosures

Information on the recognition and measurement of the gross benefit reserve is provided in note 11 of the notes to the consolidated financial statements.

5. Calculation of specific allowances for the DVB Subgroup's Shipping and Offshore loan portfolios

Reasons why the matter was determined to be a key audit matter

Valuation of the loan portfolios and the resulting estimate of any necessary specific loan loss allowances constitutes a significant area of management judgement. The identification of impaired loans and determination of an appropriate specific loan loss allowance loss entail uncertainties and involve various assumptions about factors, in particular the financial situation of the counterparty, expectations of future cash flows, observable market prices and expectations of net sales prices.

During our audit, the calculation of specific allowances for the DVB Subgroup's Shipping and Offshore loan portfolios within the customer lending volume was a key audit matter because together the two portfolios make up a significant share of DZ BANK Group's total customer lending volume and the market conditions in these areas are persistently negative. In light of these uncertainties, judgements involved in determining assumptions for valuing the portfolios can have a significant effect.

Auditor's response

Our audit comprised an assessment of the design and operating effectiveness of the internal control system with regard to the key accounting-related lending processes. In doing so, we focused on the processes for calculating impairments, including the inputs used.

We also performed substantive procedures on a sample basis to assess the adequacy of the specific allowances in a test of details. We selected the sample with a view to risk. It included, in particular, watchlist loans and loans in problem loan processing in the Shipping and Offshore loan portfolios.

We obtained an understanding of the significant assumptions used in the impairment process during the audit. This included reviewing the individual estimates of the expected future cash flows from customers, including the cash flows from the realisation of loan collateral. The effects of deferral agreements were taken into account in this respect. We used external appraisals by experts appointed by the Board of Managing Directors of the DVB Subgroup in our audit. We obtained an understanding of the assumptions used in these appraisals and appraised the adequacy of the valuation method used. We assessed the competence and objectivity of these experts as part of our audit.

In connection with the valuation of DVB's Shipping and Offshore portfolios, we liaised with the subgroup auditor, sending audit instructions to DVB's subgroup auditor about risk classification and the audit approach, especially in relation to the valuation of the Shipping and Offshore portfolios. In addition, we were informed of the current status of the audit in regular meetings and reviewed a selection of the subgroup auditor's working papers.

Our audit procedures did not lead to any reservations relating to the valuation of the Shipping and Offshore loan portfolios.

Reference to related disclosures

Information on the valuation of the loan portfolios (including DVB's Shipping and Offshore portfolios) are contained in notes 2, 5 and 83 of the notes to the consolidated financial statements and in section 8.7.3. in the "Combined opportunity and risk report of DZ BANK and DZ BANK Group" chapter of the group management report.

6. Calculation of loss allowances for financial instruments not in default (stage transfer criterion)

Reasons why the matter was determined to be a key audit matter

The loss allowances on financial instruments not in default have been measured in accordance with IFRS 9 for the first time since 1 January 2018. This involves replacing the incurred loss model under IAS 39 with an expected loss model.

Impairments of financial instruments not in default measured at amortised cost or at fair value through other comprehensive income are now accounted for either at an amount equal to the 12-month expected credit loss (stage 1) or, if there has been a significant increase in credit risk since initial recognition, at an amount equal to the lifetime expected credit loss (stage 2).

In this context, in particular setting the criteria for determining a significant increase in credit risk (allocation to stage 2) is subject to judgement.

Given that the criteria for determining a significant increase in credit risk (hereinafter also referred to as "stage transfer criterion") were set for the first time and given the related use of judgement and the volume of financial instruments not in default for which loss allowances are to be recognized under IFRS 9, we consider the calculation of the loss allowances for financial instruments not in default to be a key audit matter.

Auditor's response

During our audit, we assessed the stage transfer criterion developed by the Group and its key assumptions for conformity with IFRS 9 requirements.

We assessed the design and operating effectiveness of the internal control system as it relates to stage allocation. In doing so, we focused particularly on the procedures and controls in place for loan origination (determination of the original credit risk) and for loan monitoring (determination of the current credit risk).

We performed substantive analytical procedures on the basis of a data extract for a risk-based selection of significant stage 1 and stage 2 portfolios. In this connection, we obtained an understanding of the allocation to stage 2 according to quantitative criteria (change in credit risk since initial recognition) and qualitative indicators (e.g., days past due, watchlist, forbearance). In risk-based samples, we assessed the significant anomalies, in particular in view of the stage allocation.

Our procedures did not lead to any reservations relating to the calculation of the loss allowances for financial instruments not in default (stage transfer criterion).

Reference to related disclosures

Information about the stage transfer criterion is provided in note 83 of the notes to the consolidated financial statements under credit risk management practices.

Other information

The Supervisory Board is responsible for the report of the Supervisory Board. In all other respects, the executive directors are responsible for the other information. The other information comprises the responsibility statement pursuant to Sec. 289 (1) Sentence 5 HGB and the non-financial statement. Additionally, it comprises other parts of the annual report of which we received a version before issuing this auditor's report, including the letter to the shareholders and the report of the Supervisory Board.

Our opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

– is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
– otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the executive directors and the Supervisory Board for the consolidated financial statements and the group management report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (1) HGB, and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sec. 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.

- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with [German] law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other legal and regulatory requirements

Further information pursuant to Art. 10 of the EU Audit Regulation

We were elected as group auditor by the Annual General Meeting on 30 May 2018. We were engaged by the Supervisory Board on 14 June 2018. We have been the group auditor of DZ BANK AG Deutsche Zentral-Genossenschaftsbank without interruption since financial year 2002.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the Audit Committee pursuant to Art. 11 of the EU Audit Regulation (long-form audit report).

In addition to the financial statement audit, we have provided to the Institution or entities controlled by it the following services that are not disclosed in the consolidated financial statements or in the group management report: reviews of interim financial statements, voluntary audits of the annual financial statements of controlled entities, project-based reviews and audit of reporting requirements and rules of conduct pursuant to Sec. 36 (1) WpHG ["Wertpapierhandelsgesetz": German Securities Trading Act] (prior to revision) and Sec. 89 (1) WpHG (revised), including the audit of custody operations, issuance of comfort letters, certificates pursuant to Sec. 5 InvStG ["Investmentsteuergesetz": German Investment Tax Act], agreed-upon procedures pursuant to ISRS 4400, reviews pursuant to ISRE 2410 and IDW AuS 900, assurance engagements relating to the internal control system at service organisations pursuant to IDW AsS 951 and ISAE 3402, audits of single financial statements or elements thereof in accordance with IDW AuS 490, other assurance engagements pursuant to ISAE 3000, reviews of financial investment brokers pursuant to IDW AsS 840, assurance engagements relating to compliance management systems pursuant to IDW AsS 980. In addition, permitted non-audit services in the form of tax and other advisory services for DZ BANK and its controlled entities (organisational or professional support for quantitative and qualitative data requests from supervisory authorities and in connection with regulatory reports, provision of information in connection with current and planned legislative amendments and events for employees of DZ BANK Group, review of specialist designs for new accounting topics, support services in connection with the digitalisation of product processes, preparation of certificates for foreign tax purposes, support with regard to new or amended tax reporting or documentation requirements, review of tax returns and tax brochures, tax due diligence services).

German Public Auditor responsible for the engagement

The German Public Auditor responsible for the engagement is Christian Mai.

Eschborn/Frankfurt am Main, 7 March 2019

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Dr. Freiling	Mai
Wirtschaftsprüfer	Wirtschaftsprüfer

Report of the Supervisory Board

Henning Deneke-Jöhrens, Chairman of the Supervisory Board of DZ BANK AG

In 2018, the Supervisory Board carried out the tasks assigned to it by law, the Articles of Association, and rules of procedure. As part of this remit, the Supervisory Board advised the Board of Managing Directors and monitored its management activities. In particular, the Supervisory Board focused on the capital situation of DZ BANK and its strategy as the network-oriented central institution and holding company of a financial services group. It also studied current regulatory challenges, such as issues of strategic significance to the DZ BANK Group arising from the EU's ongoing legislative process for the EU banking package.

The Supervisory Board thoroughly examined the risk position of the bank and the group as well as the development of systems and procedures used to manage the main risks in the Bank sector and Insurance sector. The Supervisory Board was always involved in decisions of fundamental importance. The Board of Managing Directors provided the Supervisory Board with regular, timely, and comprehensive reports on all matters relevant to the company, in particular the strategy, planning, business performance, risk situation, risk management, and compliance.

DZ BANK's overarching strategy is characterized by a high degree of continuity. As in previous years, the Supervisory Board held its special strategy meeting, at which it discussed the strategy and its ongoing implementation in detail and unanimously gave its support. The DZ BANK Group's success in pursuing its strategy was again reflected in its generally strong business performance in 2018, further building on the achievements of previous years. However, this strategy was put to the test in the challenging market conditions that arose toward the end of the reporting year.

In the year under review, the entire banking industry was faced with persistently low interest rates and growing uncertainty in financial markets, which led to greater volatility. The DAX reached a record high at the start of

2018. However, the recovery in Europe then came up against a surprisingly firm euro, with the exchange rate climbing to a four-year high of around US$ 1.25. As well as the short-lived effects attributable to US interest rates, more serious negative factors emerged, while the economy in Europe was held back by the trade disputes that escalated from the spring onward. There was also an impact from developments in Italy, where uncertainty was fueled firstly by the unclear outcome of the election and subsequently by the budgetary policy of the populist government. As the year reached its end, the Brexit question increasingly took center stage. Germany's leading index closed around 18 percent weaker at the end of 2018 than it had been at the start of the year. Yields on ten-year Bunds also went down, especially in the fourth quarter. Political uncertainties and the more sluggish pace of the economy caused them to fall to 0.25 percent, having risen to almost 0.80 percent at times in the early part of the year.

The macroeconomic climate and the political climate will remain key determinants for the business model of the DZ BANK Group going forward. The main challenges are the performance of the economy and its heavy dependence on the level of interest rates, uncertainty surrounding (economic) policy and trade, and the cohesion of the eurozone. There are also challenges in the market and within the DZ BANK Group, requiring a shift in DZ BANK's role as the central institution and corporate bank on the one hand and as the holding company on the other. In 2018, the Supervisory Board focused on the refinement of the strategy under the 'Verbund First 4.0' banner, building on the successful 'Verbund First' strategic program implemented in previous years. The emphasis of the program lies in three areas: a more intensive market offering (network orientation, customer focus, and a digital experience), optimized control and production processes (effective and focused), and the evolution of the workforce and corporate culture.

Meetings of the Supervisory Board

The Supervisory Board held five meetings in 2018. Its members attended the meetings of the Supervisory Board and its committees regularly. At its meetings in the reporting year, the Supervisory Board received and discussed reports from the Board of Managing Directors on current business performance and the capital situation of DZ BANK and the DZ BANK Group. It examined the single-entity financial statements and management report of DZ BANK as well as the consolidated financial statements and group management report for the year ended December 31, 2017 and approved them in line with the Audit Committee's resolution recommendation. The Supervisory Board also discussed the report on profitability in 2017 and, in accordance with the Audit Committee's recommendations, approved the report of the Supervisory Board to the Annual General Meeting as well as the agenda for the Annual General Meeting on May 30, 2018. Other deliberations of the Supervisory Board focused on the requirement for the DZ BANK Group to report on non-financial issues (corporate social responsibility (CSR) reporting requirement). Furthermore, it held discussions with representatives from the European Central Bank on the supervisory priorities of the Single Supervisory Mechanism (SSM) in 2018, other matters of importance to the supervisory authorities, and the supervisory planning of the Joint Supervisory Team (JST) for 2018.

Under items scheduled for regular discussion, the Supervisory Board examined the strategic and operational planning at DZ BANK and in the DZ BANK Group in the third and fourth quarters of 2018. This included discussing the recovery plan. The Supervisory Board also adopted various resolutions in connection with transactions requiring its consent, such as long-term equity investments and loans. In this context, there were also discussions on the risk situation, changes to the structure of DVB Bank, the reorganization of real estate finance in connection with the merger of the two mortgage banks to form DZ HYP, changes at DZ PRIVATBANK, and the transformation of VR Leasing / VR Smart Finanz into a digital provider of finance for the self-employed and small businesses. Moreover, the Supervisory Board studied the results of the EBA stress test that was carried out and the findings of the ECB's 2018 Supervisory Review and Evaluation Process (SREP). Finally, the Supervisory Board regularly received and discussed reports on the work of the committees from their Chairs.

Meetings of the Supervisory Board committees

Each Supervisory Board committee also met on a number of occasions in 2018. During this period, the Nominations Committee and Remuneration Control Committee each held three meetings, the Audit Committee four meetings, and the Risk Committee five meetings. The Mediation Committee did not need to meet in 2018.

In the year under review, the **Nominations Committee** focused on the appraisal of the Board of Managing Directors and the Supervisory Board and on implementation of the EBA suitability guidelines. It also updated the current job description and applicant requirements profile for members of the Supervisory Board in preparation for any submission of proposed names in elections for new members. Furthermore, the Nominations Committee adopted resolutions on personnel changes on the Board of Managing Directors in order to implement the medium-term HR strategy approved in 2017. The Nominations Committee proposed resolutions to the Supervisory Board on all of these matters.

At its meetings in 2018, the **Remuneration Control Committee** focused on remuneration issues and contractual matters relating to individual members of the Board of Managing Directors. Where necessary, it proposed resolutions to the Supervisory Board. One such resolution related to the variable remuneration of the members of the Board of Managing Directors that was set for 2017. Company targets and individual targets were defined for 2018, and the total sum of variable remuneration at DZ BANK was set. The Remuneration Control Committee reviewed and confirmed the appropriateness of the remuneration of the DZ BANK Board of Managing Directors. It also examined the structure of the remuneration systems for employees and the remuneration officer's remuneration control report. Finally, the Remuneration Control Committee received and discussed the report from the remuneration officer about new regulatory requirements, their impact on DZ BANK, and progress with their implementation at DZ BANK. The Remuneration Control Committee proposed individual resolutions to the Supervisory Board on all of these matters.

In 2018, the **Audit Committee** studied the findings of the audit of the single-entity financial statements and management report of DZ BANK as well as the consolidated financial statements and group management report for the year ended December 31, 2017 by Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart (EY). It proposed a related resolution to the Supervisory Board. The committee also examined the auditor's reports on the half-year financial report of the DZ BANK Group and on the audit of the securities and investment services business in 2017/2018. Furthermore, the Audit Committee discussed the auditor's areas of focus for 2018 and key findings from the current audit. It also monitored the financial reporting process. A particular focus of discussion was the implementation of the IFRS 9 accounting standard and its quantitative impact on loss allowances in connection with the ECB's backstop criteria in the asset quality review.

Furthermore, the committee discussed the appointment of the auditor of the single-entity financial statements and the auditor of the consolidated financial statements for 2018 as well as the auditor for the review of the group's half-year financial report and other interim financial statements. In this context, the Audit Committee proposed a resolution to the Supervisory Board on the quality and independence of the auditor and recommended that EY again be engaged as auditor. The committee also deliberated on the fee to be paid to EY.

In 2018, the Audit Committee prepared the review of the non-financial statement for the Supervisory Board for the first time. This also involved studying the findings of the review of the non-financial statement conducted by the auditor EY.

Furthermore, the Audit Committee examined and discussed the business performance and capital/profitability situation in the DZ BANK Group. It also focused on supervisory audits carried out in the DZ BANK Group and on the latest regulatory developments and their implementation in the project portfolio. In this context, it took a close look at the findings of the ECB's on-site audit of IT risk at DZ BANK AG.

Other matters addressed by the committee included internal audit reports for the periods ended December 31, 2017 and June 30, 2018, the annual compliance report for 2017, and the IT strategy of DZ BANK and the DZ BANK Group. In this context, the committee monitored the effectiveness of the internal control system, risk management system, and internal audit. It also signed off updated guidelines on approving non-audit services provided by the auditor. Individual non-audit services performed by the auditor were approved on a case-by-case basis. The Audit Committee also took a general look at non-audit services, including utilization of the upper limit on fees and any measures necessary to maintain the independence of the auditor. In addition, it made preparations for the change of auditor planned for the 2021 financial year.

The **Risk Committee** advised the Supervisory Board on current and future aggregate risk appetite and strategy in the DZ BANK Group. It also helped the Supervisory Board to monitor implementation of this strategy. In particular, this involved examining the recovery indicators, the reports on aggregate risk and credit risk, and the risk strategies as well as monitoring the effectiveness of the risk management system. The committee also focused on the review of the lending business, which had been brought forward, regulatory and organizational matters in connection with the audit of the annual financial statements for the year ended December 31, 2017, and the change in specific loan loss allowances in 2017. Moreover, the Risk Committee acknowledged and discussed the results of internal stress tests in the DZ BANK Group, the results of the EBA stress test, and the findings of the ECB's 2018 Supervisory Review and Evaluation Process (SREP). It also dealt with various matters relating to long-term equity investments and loans before adopting resolutions on them. In addition, it discussed terms and conditions in the customer business, the methods for determining credit risk, the structural and country limits, and limit lists for banks and insurers. In line with its remit, it examined and monitored these limits. The committee reviewed DZ BANK's remuneration systems. It recommended to the Supervisory Board that the requirements of section 7 of the German Regulation Governing Remuneration at Institutions (InstitutsVergV) be recognized as satisfied in terms of the current overall amount of variable remuneration. Finally, the Risk Committee studied the report on updating the remit of the member of the Board of Managing Directors who has responsibility for risk. This update is aimed at improving how the group is managed.

Corporate governance

In line with the requirements of the German Banking Act, the Supervisory Board conducted a self-evaluation on February 21, 2018. It found that the structure, size, composition, and performance of the Supervisory Board and the knowledge, skills, and experience of the individual Supervisory Board members and the Supervisory Board as a whole fulfilled the requirements laid down by law and in the Articles of Association. On November 29, 2018, the Supervisory Board signed off a framework policy comprising a suitability evaluation policy concerning the individual and collective suitability of the Board of Managing Directors and Supervisory Board, a diversity policy, and an induction and training policy covering the members of both boards.

In its view, the Supervisory Board had adequate financial and personnel resources at its disposal in 2018 to be able to support new members in becoming familiar with their role and to provide the training that is necessary to maintain members' required level of expertise. DZ BANK offered and offers to cover the costs of a modular training program that is run by an external provider and tailored specifically to the needs of Supervisory Board members. Each Supervisory Board member can select modules depending on their individual requirements.

There were no indications of fundamental and far-reaching conflicts of interests affecting Supervisory Board members. Where indications of conflicts of interests arose in individual cases, the affected members of the Supervisory Board refrained from voting.

Cooperation with the auditor

The auditor Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart, confirmed that the single-entity financial statements – together with the bookkeeping system – and the management report of DZ BANK as well as the consolidated financial statements and the group management report submitted by the Board of Managing Directors for the year ended December 31, 2018 complied with the applicable legal provisions. EY issued an unqualified opinion for each of these sets of financial statements. The audit reports were submitted to the members of the Supervisory Board, who discussed them in detail at their meetings. In addition, the Chairman of the Supervisory Board and the Chairs of the Supervisory Board committees maintained a regular, intensive dialog with the auditor. This dialog also covered the new independent auditor's report pursuant to section 322 HGB (including the key audit matters). The Supervisory Board agrees with the findings of the audit.

To monitor the independence of the auditor, the Audit Committee confirmed the independence of the auditor and satisfied itself that the prohibition on engaging EY to provide certain non-audit services has been complied with. It also satisfied itself that EY has implemented appropriate processes and measures relating to quality assurance – including in connection with the acceptance and continuation of engagements and in connection with independent quality assurance related to engagements – and that EY is regularly subject to external quality control in the form of a peer review.

The Board of Managing Directors of DZ BANK issued a non-financial statement for 2018. The Supervisory Board decided to submit the report for a voluntary external audit, for which it engaged DZ BANK's auditor. EY did not become aware of any facts that would lead it to believe that the combined non-financial statement of the DZ BANK Group for the period January 1 to December 31, 2018 had not been prepared, in all material respects, in accordance with the statutory requirements. On this basis and in accordance with the Audit Committee's recommendation, the Supervisory Board concluded, having conducted its own review, that the non-financial statement complies with the statutory requirements. At its meeting on March 28, 2019, the Supervisory Board therefore approved the 2018 non-financial statement prepared by DZ BANK.

Adoption of the financial statements

At their meetings, the Supervisory Board and its Audit Committee scrutinized the single-entity financial statements and management report of DZ BANK (including the Board of Managing Directors' proposal for the appropriation of profits) as well as the consolidated financial statements and group management report for the year ended December 31, 2018. The Chairman of the Audit Committee provided the Supervisory Board with detailed information about the committee's extensive deliberations on the single-entity financial statements and management report of DZ BANK as well as the consolidated financial statements and group management report. Representatives of the auditor attended the Supervisory Board meeting convened to adopt the financial statements as well as the preparatory meetings held by the Audit Committee and by the Risk Committee so that they could report in detail on the material findings of their audit. They were also available to answer questions from the members of the Supervisory Board. The Supervisory Board did not express any reservations following the concluding findings of its review. The Supervisory Board approved the single-entity financial statements of DZ BANK and the consolidated financial statements prepared by the Board of Managing Directors for the year ended December 31, 2018 at its meeting on March 28, 2019 in line with the Audit Committee's resolution recommendation. The financial statements have therefore been adopted. The Supervisory Board approved the Board of Managing Directors' proposal for the appropriation of profits.

Personnel changes on the Supervisory Board and Board of Managing Directors

At its meeting on May 30, 2018, the Supervisory Board elected Henning Deneke-Jöhrens as its new Chairman. He succeeded Helmut Gottschalk, who had been Spokesman of the Board of Managing Directors of Volksbank Herrenberg-Nagold-Rottenburg for many years. Mr. Gottschalk stepped down from the Supervisory Board at the end of the Annual General Meeting, following fifteen years of service that included two years as Deputy Chairman and eight years as Chairman. Werner Böhnke also left the Supervisory Board at the end of the Annual General Meeting. He had previously been a member of DZ BANK's Supervisory Board from August 2000 until May 2014. From May 20, 2014 until June 22, 2016, he was Chairman of the Supervisory Board of the former WGZ BANK. He then became a Deputy Chairman of the Supervisory Board of the merged central institution. Both Mr. Gottschalk and Mr. Böhnke played a crucial role in guiding the bank through the many strategic changes that have taken place over recent years. First and foremost among these were the successful merger of WGZ BANK and DZ BANK in 2016 and DZ BANK's firm strategic focus on 'Verbund First', which is a key factor in ensuring the stability of the business model. The Supervisory Board is deeply grateful to Mr. Gottschalk and Mr. Böhnke for their outstanding contributions that have benefited the cooperative organization for so many years. On May 30, 2018, Martin Eul was elected to succeed Mr. Böhnke as a Deputy Chairman of the Supervisory Board. Timm Häberle and Ingo Stockhausen were elected as new members of the Supervisory Board with effect from the end of the 2018 Annual General Meeting.

Wolfgang Kirsch retired with effect from January 1, 2019 after almost sixteen years on the Board of Managing Directors, including approximately one year as Deputy Chief Executive Officer and around twelve years as Chief Executive Officer. Under the 'Verbund First' strategy, Mr. Kirsch succeeded in strengthening DZ BANK's focus on the needs of the cooperative banks. At the same time, he laid the foundations that would ensure that the DZ BANK Group was able to survive the financial crisis largely unscathed by drawing on its own resources. Mr. Kirsch also played a significant part in the success of the merger of DZ BANK and WGZ BANK. The Supervisory Board would like to thank Mr. Kirsch for his successful and crucial contributions through his work on the DZ BANK Board of Managing Directors.

Before that, on March 31, 2018, Stefan Zeidler left the Board of Managing Directors of DZ BANK at his own request after a successful five years in office. Mr. Zeidler was a driving force of direct customer contact in Corporate Banking and of the strategic development of this business line, playing an important part in ensuring its sustained success.

Ulrike Brouzi joined the Board of Managing Directors on September 1, 2018, taking charge of the Compliance division. At the start of 2019, she also became the member of the Board of Managing Directors responsible for finance.

Uwe Fröhlich was appointed to the Board of Managing Directors with effect from January 1, 2019. On that same date, Mr. Fröhlich and Dr. Cornelius Riese became the Co-Chief Executive Officers. Under this dual arrangement, Mr. Fröhlich is primarily responsible for activities relating to the cooperative financial network and the corporate bank, while Dr. Riese is primarily responsible for DZ BANK's activities as the holding company.

The Supervisory Board wishes to thank the Board of Managing Directors and all employees of the DZ BANK Group for their valuable contribution in 2018.

Frankfurt am Main, March 28, 2019

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank,
Frankfurt am Main

Henning Deneke-Jöhrens
Chairman of the Supervisory Board

Non-financial statement

Non-financial statement

The non-financial statement combines the non-financial report of DZ BANK AG and the non-financial report of the DZ BANK Group. In accordance with section 315c in conjunction with section 289c of the German Commercial Code (HGB), the non-financial statement for 2018 is divided into five sections: environmental protection, treatment of employees, social responsibility, respect for human rights, and anti-corruption and bribery.

Because none of the sustainability reporting frameworks use the definition of materiality contained in the German CSR Directive Implementation Act (CSR-RUG), the DZ BANK Group has opted not to use a framework for the preparation of the non-financial statement.

DZ BANK Group entities report on sustainability information that is outside the scope of the non-financial statement in their sustainability reports and on their websites. Since 2009, the DZ BANK Group has also published an annual progress report on the UN Global Compact.

This non-financial statement covers the following management units of the DZ BANK Group:

- DZ BANK
- BSH
- DVB
- DZ HYP
- DZ PRIVATBANK
- R+V
- TeamBank
- UMH
- VR LEASING.

The section of the 2018 group management report entitled 'DZ BANK Group fundamentals' contains information on the management units of the DZ BANK Group and their business models. Supplementary, sustainability-related information on the business models of the management units is outlined in this statement under the relevant sections of the report.

1. The DZ BANK Group as part of the cooperative financial network

The DZ BANK Group forms part of the German cooperative financial network, which includes around 900 cooperative banks and is one of Germany's largest private-sector financial services organizations measured in terms of total assets. Within the cooperative financial network, DZ BANK AG functions as the central institution and is responsible for supporting the business of the cooperative banks in their regions and strengthening their competitiveness. It also operates as a corporate bank and acts as the holding company for the DZ BANK Group.

The DZ BANK Group includes Bausparkasse Schwäbisch Hall, DZ HYP, DZ PRIVATBANK, R+V Versicherung, TeamBank, the Union Investment Group, the VR LEASING Group, and various other specialized institutions. The collaboration within the DZ BANK Group is based on the cooperative principles: mutuality, partnership, and social responsibility.

The DZ BANK Group entities support the local cooperative banks and their 11,000 or so branches in retail banking, corporate banking, capital markets business, and transaction banking with their comprehensive range of financial products and services.

The success of the cooperative financial network is evidenced by its more than 30 million customers, around 18.5 million of whom are also members and thus owners of a cooperative.

2. Sustainability within the DZ BANK Group / Group Corporate Responsibility Committee

The entities within the DZ BANK Group have been pooling their sustainability activities since 2010. The Group Corporate Responsibility Committee was set up at DZ BANK Group level in 2014. The Group CRC covers the management units and ReiseBank, and is a standing committee made up of the sustainability coordinators of the individual entities.

The Group CRC focuses on working together on key areas, although management of the activities remains decentralized. The key areas are determined on the basis of the findings of the stakeholder survey (see section 3). The requirements of sustainability rating agencies and current political and regulatory developments are also taken into account in the choice and prioritization of topics by the Group CRC.

In 2018, the participants of the Group CRC developed methods to strengthen the committee and make it more efficient. In addition, work has begun on the revision of the groupwide code of conduct.

The Group CRC is coordinated by DZ BANK's Communication, Marketing, CR division. The Group CRC coordinators report to the Chief Executive Officer of DZ BANK and, where appropriate, to the Group Coordination Committee.

3. Materiality of the report content

Successful management of sustainability activities within the DZ BANK Group requires an understanding of the social, environmental, and economic interests, experiences, and expectations of the stakeholders. The first groupwide online survey on CSR engagement, carried out among internal and external stakeholders in 2015, provides important information in this respect.

When selecting stakeholder groups for the survey, the diversity of the groups and their relevance for the entities of the DZ BANK Group were taken into account. The following aspects were key. Cooperative banks as customers and owners, corporate and retail customers of the entities of the DZ BANK Group, and their employees are among the most important stakeholders. Suppliers and service providers along with industry organizations and investors are very important financially to the entities of the DZ BANK Group. Critical voices from non-governmental organizations, rating agencies, and the worlds of business and politics were also taken on board.

The findings of the groupwide stakeholder survey were compared against the DZ BANK Group entities' own perspective in internal workshops. This produced a materiality matrix that shows the relevance of the various action areas to internal and external stakeholders. The materiality matrix forms the basis of the sustainability activities of the DZ BANK Group.

Against the background of the statutory requirements for a non-financial statement, the sustainability issues that are of relevance from a stakeholder perspective were re-evaluated by the DZ BANK Group entities in 2017. In early 2019, this assessment was reviewed by the group entities and found to still be applicable. This non-financial statement discusses the matters that were identified as important for the understanding of business performance, operating performance, and the position of the DZ BANK Group, and the effects of its activity on the aspects required to be included in the report: environmental protection, social responsibility, and treatment of employees, respect for human rights, and anti-bribery and corruption.

DZ BANK and the DZ BANK Group have a comprehensive risk management system. In 2018, no disclosable risks within the meaning of section 289c (3) HGB were identified. Information on risks associated with the aspects set out in this report, such as compliance risks and HR risks, can be found in the 2018 combined opportunity and risk report of DZ BANK and the DZ BANK Group.

The DZ BANK Group promotes sustainable economic and social development through various sustainability management activities. The entities of the DZ BANK Group have established various products, concepts, and processes that include environmental, social, and ethical criteria. Below, the report outlines the applicable principles and then describes the concepts and measures used for each aspect. Where a concept applies to several aspects, it will be explained upon first occurrence and then simply referred to subsequently.

4. Environmental protection

Various concepts are used within the DZ BANK Group to minimize the potential environmental impact of business activities and to limit possible risks such as reputational risk and credit risk. Examples include the 'Sustainable lending within the DZ BANK Group' policy and DZ BANK's sustainability checklist for lending. The DZ BANK Group also offers funding solutions and investment opportunities with an environmental or social benefit.

Sustainable lending

The credit risk strategy specifies that the entities in the Bank sector of the DZ BANK Group must treat their partners fairly and, as part of the sustainability strategy, not enter into any lending arrangement that could prejudice the reputation of the group. A sustainable lending policy developed on the basis of this strategy is applied in the majority of the management units involved in lending.

The policy contains rejection criteria for controversial asset types, business sectors, and business practices in order to exclude transactions that do not meet the minimum criteria in relation to environmental, social, and governance aspects or that are associated with a higher risk of reputational damage for the DZ BANK Group. Individual DZ BANK Group entities may apply additional rejection criteria. For example, DZ BANK stopped providing project funding for new coal-fired power plants in 2018.

DZ BANK systematically assesses loan applications (traditional lending business, project finance, and customer-specific trading limits) against relevant sustainability criteria as part of the credit check process. All factors relevant to the financing arrangement in question are assessed in relation to environmental and social risks using a sustainability checklist based on the 10 principles of the UN Global Compact and the Equator Principles, the latter forming a global project finance standard for evaluating environmental and social risks. Loans to cooperative banks and to entities in the DZ BANK Group are exempt from the checks, as are exposures that are being restructured. Further exemptions apply to certain product types in the joint credit business with the cooperative banks, to loans under blanket approval agreements, and to exposures that are below the rating threshold.

At DZ BANK, industry-related principles are used in addition to the sustainability checklist when reviewing loan applications from sensitive industries (forestry, commodities mining/extraction, dam construction, fishing, and maritime industries). These principles specify the details to be reviewed with reference to international industry-specific conventions, recognized standards, certification, and optimum production processes.

DZ BANK signed up to the Equator Principles in January 2013. Since then, project finance with a total investment volume of more than US$ 10 million and project-specific corporate finance with an investment volume of more than US$ 100 million has been subject to an environmental and social impact assessment in accordance with these principles. In the year under review, 18 projects assessed in this way reached financial close: 4 A-projects (potentially significant adverse environmental and social impact), 6 B-projects (potentially limited adverse social and environmental impact), and 8 C-projects (low or no environmental and social impact).

Financing for renewable energies

The DZ BANK Group's range of products covering renewable energies extends from finance for energy-saving solutions in construction and renovation projects to support for small and medium-sized enterprises using wind power, biomass, or solar energy and finance for large-scale projects such as solar farms, as well as suitable insurance solutions. DZ BANK's lending in the area of renewable energies stood at around €4.5 billion as at December 31, 2018. It is used to fund the expansion of infrastructure and the development of new, more efficient technologies. As well as traditional bank loans funded from the bank's own liquidity and the arrangement of development loans, the provision of project finance is a major focus of activity in the renewable energies business.

VR Smart Finanz – the core business of VR LEASING (leasing, hire purchase, and lending) has been marketed under the VR Smart Finanz brand since July 2018 – supports investment projects in the area of renewable energies such as photovoltaic systems and mobile elements of biogas systems, as well as investment projects in the area of energy efficiency, such as combined heat and power units. R+V Versicherung's renewable energies center of excellence develops made-to-measure insurance solutions for operators of plants producing green electricity.

Sustainable investments

Union Investment is one of Germany's largest providers of socially responsible investments, with around €41.4 billion of assets under management in this category. It offers a broad spectrum of fund and client account solutions that are managed in compliance with sustainability requirements. All investment processes are based on its company-specific guidelines for responsible investment. This, in turn, is based on leading German and international standards that are adhered to above and beyond the statutory and regulatory requirements. The following standards and principles are the most important: the UN Global Compact, the Oslo Convention prohibiting the use of cluster munitions and landlines, the Principles for Responsible Investment – an investor initiative in partnership with the UNEP Finance Initiative and the UN Global Compact –, the code of conduct of the Bundesverband Investment und Asset Management (BVI) [German Investment Funds Association], and the sustainability code of the real estate sector.

Union Investment also uses ESG aspects as an additional risk filter in its internal risk management. This focus here is on regulatory risks, reputational risks, event risks, litigation risks, and technology risks. ESG factors relating to companies, governments, and other securities issuers are analyzed as part of investment decisions. At sector level too, the importance of ESG factors for the sector concerned is incorporated into the analysis.

Sustainability criteria and environmental impacts are taken into account at all stages of the value chain in the real estate fund business, too, as well as in the securities business. When purchasing, leasing, or managing buildings, and when developing and renovating them, the objective is to maintain the value and the future viability of the property and to secure long-term economic performance. External service providers are integrated into the internal processes. A property may only be purchased if it achieves a certain score on the internal sustainable investment checklist, otherwise measures have to be agreed. Sustainability aspects are taken into account in leasing, management, and development of the real estate portfolio, and in the selection of property managers. The self-imposed obligation to structure business processes in accordance with the principles of the code of the Zentraler Immobilien Ausschuss (ZIA) [German Property Federation] is thus met.

As part of its engagement activities, Union Investment takes a proactive approach to its shareholdings on behalf of its clients. It specifically raises ecological, social, and corporate governance issues in discussions with investors and at annual general meetings, and in many cases is able to exercise influence on decision-making processes within companies. Union Investment publishes an annual engagement report.

DZ PRIVATBANK offers an ethical asset management service to its high-net-worth customers (monetary assets of more than €250,000) and private banking clients (monetary assets of more than €500,000). Coordinated social, environmental, and ethical filters define a broad investment universe of bonds and equities. Manufacturers of anti-personnel mines and cluster munitions are strictly excluded.

Green bonds

At the end of September 2018, DZ BANK placed the very first issue of its own green bond, with a volume of €250 million. The design of the bond complies with the Green Bond Principles of the International Capital Markets Association (ICMA) and was given the highest overall score of E1 by sustainability experts from Standard & Poor's Global Ratings. The capital raised by the placement will be used to finance onshore wind power projects in Germany. A pool of 60 projects in need of funding is linked to the green bond. These projects should reduce harmful CO_2 emissions by around 790,000 tonnes per year.
DZ BANK has been active in the sustainable bonds segment since 2013 and is one of the leading European underwriters for these assets. In 2018, the total volume of bond issues with green, social, and sustainable objectives that were supported by DZ BANK as the lead underwriter amounted to around €7 billion. Issuance activity is focused on investment projects in the areas of renewable energies and climate change.

5. Treatment of employees

Skilled employees are an invaluable resource for the DZ BANK Group. The competition for highly capable professionals and managerial staff is increasing, so it is important for the DZ BANK Group entities to offer established employees attractive prospects and also to recruit well-qualified specialists and young people.

Employer branding

A key objective of the HR activities within the DZ BANK Group is to increase the group's attractiveness as an employer. The Group HR Committee initiates and coordinates activities relating to overarching HR issues while at the same time exploiting potential synergies. The board members responsible for HR and the HR directors of the DZ BANK Group entities sit on this committee. Examples of the committee's activities include a common remuneration strategy initiated to take account of the regulatory requirements and, in 2014, the launch of a company-wide employer branding campaign.

The objective of the employer branding campaign is to establish the DZ BANK Group as an employer in the marketplace, thereby attract suitable candidates and retain existing employees over the long term, and thus safeguard the future viability of the DZ BANK Group. Following the success of the internal communications and information-sharing platform set up in 2014, a joint external careers website featuring vacancies across the group was launched two years later. Various public relations activities supported the launch of the employer brand in the external job market. In 2017, these activities included a nationwide bike-sharing campaign that was promoted on relevant social media. The focus widened to internal communications channels, for example with articles about individual employees in a feature entitled 'A day in the life of...'. In the year under review, employer branding responsibilities were transferred from the entities to the relevant line functions, where they are now a firmly established element of HR policy.

In 2011, the entities in the DZ BANK Group had issued a letter of intent declaring their intention to provide active support for the advancement of women in their careers, a further measure necessary to safeguard the competitiveness of the group over the long term. The initiative is supported by joint events such as the 'Success strategies for women in business' training.

The joint cross-mentoring program is offered to heads of department throughout the group and in 2017 was taken up by 15 mentor and mentee pairings from eight companies, each comprising a head of division as mentor and a head of department as mentee. The program, which was running for the third time, aims to develop professional expertise through individual mentoring. Appropriate measures in the future will put the focus more firmly on the networking of all mentors and mentees beyond the groups and pairing arrangements.

As well as groupwide measures for managers, the project entitled 'Information week: Experiencing the sense of belonging in the DZ BANK Group' was continued. Successfully piloted in 2016, the project saw three events staged in 2017 and two in 2018, each in a different entity. For 2019, the next three events at three different entities have already been planned.

These information events actively help to nurture group identity. Such events offer new perspectives, promote an understanding of particular requirements in other entities, encourage a greater depth of professional dialog, and thereby produce employees capable of spreading the message among others. As well as expanding networks within the entities, the events support overarching succession and career planning and secure long-term employee loyalty.

The entities in the DZ BANK Group offer their staff a wide range of internal training and development opportunities.

The entities of the DZ BANK Group regularly undergo the 'berufundfamilie' audit in order to promote a good work-life balance. The Hertie Foundation recognizes companies with family-friendly and life-stage-oriented HR policies. The auditberufundfamilie® quality seal has to be renewed every three years and is contingent on the auditing of specific measures. In 2018, the majority of entities were certified by auditberufundfamilie®. Flexible working hours and part-time working models, together with other measures aimed at improving work-life balance, form a permanent part of HR policy in each entity.

The DZ BANK Group entities offer health management services in order to boost their employees' performance. In 2018, staff could choose to participate in a variety of preventive health measures such as company sports groups or special courses focusing on preventive healthcare.

6. Social responsibility

The future viability of the DZ BANK Group rests on its ability to satisfy its customers. That is why the DZ BANK Group entities actively seek dialog with their customers and other stakeholders in order to engage them in the group's business processes to everyone's advantage. This regular and intensive dialog helps the DZ BANK Group's owners and customers to build trust in the quality of the products and services on offer.

Dialog events with cooperative banks

The most important customer group is the cooperative banks. As they are also the owners of DZ BANK, DZ BANK feels particular solidarity and a sense of partnership with them. DZ BANK facilitates communication and information sharing with the cooperative banks through various dialog events, including five regional Banking Advisory Councils and the autumn conferences.

The founding of the DZ BANK Group's Central Advisory Council in 2018 is of particular strategic importance. The Central Advisory Council aims to ensure that the cooperative banks are involved in the DZ BANK Group's important strategic decisions (to the extent permitted by the German Stock Corporation Act). The Central Advisory Council comprises around 35 members from the Boards of Managing Directors of cooperative banks plus other important representatives from within the cooperative financial network. The purpose of the Central Advisory Council is to facilitate in-depth discussion and dialog on key strategic issues in the DZ BANK Group. It also addresses the design of new products and services and the way these are marketed to cooperative banks and their customers. The Central Advisory Council meets twice a year and is able to make recommendations to the various Boards of Managing Directors in the DZ BANK Group. The constituent meeting of the Central Advisory Council took place in March 2018.

7. Respect for human rights

As a signatory to the UN Global Compact, the DZ BANK Group is committed to ten globally applicable principles covering the areas of human rights, labor standards, the environment, and anti-corruption. Together with the DZ BANK Group's code of conduct, these principles form a binding frame of reference for the practices of the DZ BANK Group entities. Human rights aspects are also taken into account in the business activities of the group entities, for example in the portfolio management of Union Investment and the procurement processes of the DZ BANK Group.

Code of conduct of the DZ BANK Group

The code of conduct provides the basis for the ethical, legally compliant, and socially responsible corporate culture within the DZ BANK Group. The DZ BANK Group's code of conduct provides its employees with principles and rules on how to behave properly and responsibly, particularly in their dealings with customers, business partners, and other members of staff. The entities of the DZ BANK Group do not tolerate any discrimination against employees or third parties on the basis of age, gender, ethnic background, nationality, religion, political views, worldview, race, disability, or sexual identity.

Sustainability agreement with suppliers

When selecting suppliers and service providers, respect for and protection of human rights are important to the DZ BANK Group. In 2017, the DZ BANK Group developed guidelines entitled 'Sustainability in Procurement'. The procurement processes incorporate social and ecological standards that cover aspects relating to human rights and working practices. DZ BANK, Bausparkasse Schwäbisch Hall, R+V Versicherung, Union Investment, and VR LEASING use a sustainability agreement requiring their suppliers to comply with the DZ BANK Group's minimum standards, the principles of the United Nations Global Compact, and the fundamental conventions of the International Labour Organization. A breach of this agreement may ultimately result in a supplier being suspended.

Guidelines for responsible investment

The statements on sustainable lending and sustainable asset management in the DZ BANK Group set out in the section on environmental protection are also of importance for the aspect of 'respect for human rights'. Social and ethical factors are taken into account, alongside environmental aspects, in both sustainable lending and sustainable asset management.

Union Investment has systematically integrated the issue of human rights violations into the portfolio management assessment guidelines by implementing the principles of the UN Global Compact. Information is available to all fund managers in Union Investment's proprietary information system SIRIS. Human rights aspects are also proactively raised with companies as part of the engagement process.

R+V Versicherung follows clear ethical guidelines in its investments. It does not invest in companies that manufacture mines and anti-personnel mines, atomic, biological, and chemical weapons (ABC weapons), depleted uranium munitions, or cluster munitions. Financial products for agricultural commodities are also excluded. Since 2018, the insurance company no longer invests in companies that generate 30 percent or more of their revenue from the mining or use of coal. The rejection criteria apply to all asset classes (equities, interest-bearing securities such as bonds and Pfandbriefe, loans, and real estate) over which R+V's investors have a direct influence.

Bausparkasse Schwäbisch Hall has defined rejection criteria for the investment of its own funds. Bonds from defined sectors (such as certain armaments or pornography) or from companies with ethically dubious business practices (child labor and forced labor, human rights violations, controversial environmental practices) are excluded. Since 2015, BSH has also excluded bonds from companies that earn more than 25 percent of their total consolidated revenue from coal-fired power plants (brown and hard coal) or uranium mining.

8. Anti-corruption and bribery

Ensuring compliance is essential to responsible corporate governance. An effective compliance management system ensures that business practices are legitimate and serves to protect against reputational risks and financial loss. This includes combating corruption and bribery, preventing money laundering, the financing of terrorism, market manipulation, and insider trading, and ensuring compliance with financial sanctions.

Compliance function

The main tasks of the compliance function are to identify, manage, and mitigate compliance risk in order to protect customers, DZ BANK, the other entities in the DZ BANK Group, and their employees against breaches of legal provisions and requirements. The compliance function is also responsible for monitoring compliance with the legal provisions and requirements, keeping senior management and the departments informed of changes to the legal situation, and advising them on implementing new provisions and requirements.

The compliance framework of the DZ BANK Group centers on the compliance policy, which sets out the requirements for the establishment/organization of the compliance functions and details of their duties. The framework is supplemented by compliance standards, which specify how to implement these requirements at an operational level.

The Head of Compliance at DZ BANK reports at least once a year on the activities and key findings of the compliance function in relation to DZ BANK, including its international branches and its subordinated group entities. The tasks of the Compliance division are based on the requirements of the German Banking Act (MaRisk, money laundering and other criminal offenses), the German Securities Trading Act (MaComp), MAR, MAD, the German Anti-Money Laundering Act (GwG), and the corresponding legislation at European level.

Money laundering and fraud prevention

By signing up to the UN Global Compact, the DZ BANK Group has undertaken to respect and comply with the ten principles of corporate responsibility. Principle 10 commits companies to work against corruption in all its forms, including extortion, bribery, and passive corruption. The DZ BANK Group's code of conduct is based on the principles of the UN Global Compact. It also addresses undesirable business practices and makes reference to various fraud prevention tools.

To prevent white-collar crime and protect the group's reputation and assets, procedures have been introduced to allow employees to report potentially illegal or damaging practices. The entities of the

DZ BANK Group have set up a whistleblowing system that enables employees to report possible criminal acts internally, without having to disclose their own identity.

All DZ BANK Group entities have policies in place for dealing with gifts. Gifts should generally be given for altruistic motives – for example to express thanks – or to celebrate events such as birthdays or service anniversaries. However, such well-intended gestures could be misinterpreted and could lead to improper influence over the recipient of the gift. The line between a well-intended gesture and an attempt at bribery is blurred. The DZ BANK guidelines for dealing with gifts and invitations contain binding provisions designed to rule out conflicts of interest and crimes, with the aim of protecting employees, customers, and DZ BANK itself.

The entities of the DZ BANK Group provide regular training for their employees on compliance, anti-money laundering, and fraud prevention. The training is intended to ensure ethical business conduct by informing and educating employees.

At DZ BANK, the web-based training tools on anti-money laundering and fraud prevention are mandatory for all employees and also include a test at the end. Employees must complete these programs soon after joining the organization. The modules are tailored to the business activities and the special needs of DZ BANK and are repeated by all employees at all locations in Germany on a two-yearly cycle. Employees who have not completed the training within the specified timeframe receive an automated reminder from the training tool, giving them 15 days to complete the program in question. The internal reminder system consists of a total of three warning levels, each of which also sends a notification to the employee's immediate line manager. To prevent white-collar crime and to protect the assets and reputation of the organization, two new web-based training tools on corporate security and the General Data Protection Regulation in banks were developed in 2018 and made mandatory for employees.

The DZ BANK Group entities also provide anti-money laundering training to their employees. Depending on the size of the entity, classroom-based training may also be provided in addition to the online training programs.

Independent auditor's report on the limited assurance engagement

To DZ BANK AG, Frankfurt am Main

We have performed a limited assurance engagement on the non-financial report of DZ BANK AG, Frankfurt am Main, in accordance with section 340a in conjunction with section 289b of the German Commercial Code (HGB), which is combined with the group non-financial report in accordance with section 340i in conjunction with section 315b HGB and also comprises and incorporates by reference the qualified section 'DZ BANK Group fundamentals' of the 2018 group management report (hereinafter referred to as the non-financial report) for the period January 1, 2018 to December 31, 2018. Our engagement did not include any disclosures for prior years.

A. Responsibility of the executive directors

The executive directors are responsible for the preparation of the non-financial report in accordance with section 340a in conjunction with sections 289c to 289e HGB and section 340i in conjunction with 315c HGB.

This responsibility includes selecting and applying appropriate methods to prepare the non-financial report as well as making assumptions and estimates relating to individual disclosures that are reasonable in the circumstances. The executive directors are also responsible for the internal controls that they have specified as necessary for the preparation of a non-financial report that is free of material misstatements, whether due to fraud or error.

B. Auditor's declarations relating to independence and quality assurance

We are independent from the entity in accordance with the provisions of German commercial law and professional regulations, and we have fulfilled our other professional responsibilities in accordance with these requirements.

Our audit firm applies the national statutory regulations and professional pronouncements for quality assurance, in particular the by-laws regulating the rights and duties of Wirtschaftsprüfer and vereidigte Buchprüfer [German public auditors and certified public accountants] in the exercise of their profession as well as the quality assurance standard of the Institut der Wirtschaftsprüfer (IDW) [Institute of Public Auditors in Germany]: Requirements for quality assurance in auditing practice (IDW QS 1).

C. Auditor's responsibility

Our responsibility is to express a limited assurance opinion on the non-financial report based on our limited assurance engagement.

We conducted our assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): 'Assurance Engagements other than Audits or Reviews of Historical Financial Information', issued by the International Auditing and Assurance Standards Board (IAASB). This standard requires us to plan and conduct the assurance engagement to obtain limited assurance as to whether the Company's non-financial report has been prepared, in all material respects, in accordance with section 340a in conjunction with sections 289c to 289e HGB and section 340i in conjunction with 315c HGB. In a limited assurance engagement, the assurance procedures carried out are less comprehensive than those for a reasonable assurance engagement and therefore a substantially lower level of assurance is obtained. The auditor exercises professional discretion when selecting the assurance procedures.

During our assurance engagement, the majority of which was conducted between December 2018 and February 2019, we carried out the following assurance procedures and other activities:

- Inquiries of employees regarding the selection of topics for the non-financial report, the risk assessment, and the strategies for the areas identified as material
- Inquiries of employees responsible for the capture and consolidation of data and for preparing the non-financial report, on their assessment of the reporting system, the methods of data extraction and preparation, and the internal controls, so far as they are relevant for the examination of the disclosures in the non-financial report
- Identification of likely risks of material misstatements in the non-financial report
- Inspection of the relevant documentation of the systems and processes for compiling, analyzing, and aggregating data from the relevant divisions such as Compliance and Human Resources during the reporting period, and inspection of these on a sample basis
- Inquiries and inspection of documents on a sample basis with regard to the collection and reporting of selected data
- Analytical assessment of disclosures in the non-financial report at the level of the parent entity and of the group
- Assessment of the presentation of the disclosures in the non-financial report.

D. Opinion

Based on the assurance procedures carried out and the evidence obtained, we are not aware of any facts that would lead us to believe that the non-financial report of DZ BANK AG for the period January 1, 2018 to December 31, 2018 has not been prepared, in all material respects, in accordance with section 340a in conjunction with sections 289c to 289e HGB and section 340i in conjunction with section 315c HGB.

E. Intended use of the report

We are issuing this report on the basis of the engagement agreed with DZ BANK AG. The assurance engagement has been conducted for the purposes of the Company, and the report is intended purely to inform the Company of the results of the engagement. It must not be used other than for the intended purpose. This report is not intended for use by third parties as a basis for making (financial) decisions.

F. Engagement terms and liability

Our General Engagement Terms for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften [German Public Auditors and Public Audit Firms] dated January 1, 2017 (www.de.ey.com/IDW-Auftragsbedingungen) apply to this engagement, and to our relations with third parties in connection with this engagement. We refer in addition to the liability provisions contained in section 9 of the General Engagement Terms and to the exclusion of liability vis-à-vis third parties. We accept no responsibility, liability, or other obligations vis-à-vis third parties unless otherwise stipulated in the provisions of a written agreement we have entered into with the third party, or if the liability disclaimer is ineffective.

We explicitly point out that we do not update the report to reflect events or circumstances arising after it was issued, unless required to do so by law. Anyone taking cognizance of the results of our assurance engagement summarized in the above report is responsible for deciding whether and in what form they consider these results useful and suitable for their purposes and whether they should carry out their own investigations to add to, verify, or update these results.

Munich, March 7, 2019

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Nicole Richter
Wirtschaftsprüferin
(German Public Auditor)

Dr. Patrick Albrecht

Editorial information

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank,
Frankfurt am Main
Platz der Republik
60325 Frankfurt am Main
Germany

Postal address:
60265 Frankfurt am Main
Germany

Telephone +49 (0)69 7447 01
Fax +49 (0)69 7447 1685
mail@dzbank.de
www.dzbank.com

This annual report is available in
electronic form on our website at
www.annualreport.dzbank.com.

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank,
Frankfurt am Main
Platz der Republik
60325 Frankfurt am Main
Germany

www.dzbank.com