Volksbanken Raiffeisenbanken
cooperative financial network

2016

Annual Financial Statements and Management Report of DZ BANK AG

DZ BANK
Bank on Germany

Key figures

DZ BANK AG

€ million	2016	2015
FINANCIAL PERFORMANCE		
Operating profit before allowances for losses on loans and advances	827	769
Allowances for losses on loans and advances	-313	123
Operating profit	514	892
Net income for the year	323	399
Cost/income ratio (percent)	64.7	63.1

	Dec. 31, 2016	Jan. 1, 2016
NET ASSETS		
Assets		
Loans and advances to banks	118,095	101,022
Loans and advances to customers	33,744	31,710
Bonds and other fixed-income securities	45,591	48,253
Shares and other variable-yield securities	68	56
Trading assets	38,187	45,929
Other assets	17,630	17,681
Equity and liabilities		
Deposits from banks	120,150	119,986
Deposits from customers	27,938	22,720
Debt certificates issued including bonds	48,173	45,782
Trading liabilities	31,966	31,889
Other liabilities	14,832	14,131
Equity	10,256	10,143
Total assets/total equity and liabilities	**253,315**	**244,651**
Volume of business[1]	**284,037**	**274,059**

	Dec. 31, 2016	Dec. 31, 2015
LIQUIDITY ADEQUACY		
Economic liquidity adequacy (€ billion)[2]	3.8	4.0
Liquidity coverage ratio – LCR (percent)	139.9	106.6
CAPITAL ADEQUACY		
Economic capital adequacy (percent)[3,4]	163.5	173.5
Common equity Tier 1 capital ratio (percent)[5]	18.1	19.0
Common equity Tier 1 capital ratio applying CRR in full (percent)[6]	18.1	19.0
Tier 1 capital ratio (percent)[5]	19.1	20.2
Total capital ratio (percent)[5]	24.4	26.6
Leverage ratio (percent)[5]	4.0	4.6
Leverage ratio applying CRR in full (percent)[6]	4.0	4.6
AVERAGE NUMBER OF EMPLOYEES DURING THE YEAR	**5,673**	**5,590**
LONG-TERM RATING		
Standard & Poor's	AA-	AA-
Moody's Investors Service	Aa3	Aa3
Fitch Ratings	AA-	AA-

1 Total equity and liabilities including contingent liabilities and other obligations.
2 Stress scenario with the lowest minimum liquidity surplus.
3 Owing to the close ties between the management of economic capital adequacy at DZ BANK and that of the DZ BANK Group, the figures for the group also apply to DZ BANK.
4 The figure as at December 31, 2015 differs from the figure in the 2015 annual financial statements and management report due to a scheduled recalculation of the overall solvency requirement for the Insurance sector in the second quarter of 2016.
5 In accordance with the requirements applicable as at the reporting date.
6 In accordance with the requirements applicable from 2019.

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Note

DZ BANK AG Deutsche Zentral-Genossenschafts-bank, Frankfurt am Main, (DZ BANK) implements the transparency requirements as specified in section 289 of the German Commercial Code (HGB) with the publication of this management report. In addition, the report satisfies German accounting standard no. 20 (Group Management Report), which relates to management reports that apply at group level.

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 AG fundamentals

DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, and WGZ BANK AG Westdeutsche Genossenschafts-Zentralbank, Düsseldorf, (WGZ BANK) completed their legal merger in the reporting year and started operations as the joint central institution of the local cooperative banks on schedule.

The objectives behind the merger are pooling the strategic expertise and operational strength of the two cooperative central institutions, refining processes, leveraging income and cost synergies, deploying available resources efficiently, and laying the foundations for the further development of the superstructure of the cooperative financial network.

1. Business model

The joint central institution (DZ BANK) formed as a result of the merger focuses closely on the local cooperative banks, which are its customers and owners. The DZ BANK Group makes a significant contribution to helping the cooperative banks strengthen their market position by providing them with competitive products and services on a decentralized basis for incorporation into their end-customer business.

The focus on network-based business is always given priority, especially in times when resources are in short supply. In its role as a corporate bank, DZ BANK offers complementary services using existing products, platforms, and support activities. These services are constantly reviewed both from a strategic perspective (for example, so that there is no direct competition with the cooperative banks) and from an economic perspective (for example, so that the returns are appropriate and the risk acceptable).

2. Strategic focus as a network-oriented central institution and financial services group

The strategic focus at DZ BANK 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 in the bank's home market of Germany. 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. To achieve this aim, DZ BANK is steadfastly pursuing a three-pronged strategy of growth oriented to the cooperative financial network, a continuation of the focusing of business activities, and integration within the network and with the cooperative banks.

DZ BANK works jointly with the special committees of the Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e.V., Berlin, (BVR) [National Association of German Cooperative Banks] on key future-related issues to safeguard the competitiveness of the cooperative financial network. At the core of these activities is the Kundenfokus 2020 project, the aim of which is to create an omnichannel customer experience in which the strengths of the cooperative approach are transferred to a digital environment. Various innovative products for the customers of the cooperative financial network have already been developed and established in the market within this framework. One example is the online GENO Broker platform, a support service for the cooperative partner banks offering a range of cutting-edge, forward-looking services in connection with the securities business. Project participants are currently involved in a number of other activities, including developing a digital network for members of the local cooperative banks and setting up one-and-done processes that will enable certain procedures to be carried out digitally from end to end in the future. Further initiatives are planned as part of the project over the coming years.

In the reporting year, DZ BANK set up an 'innovation lab' as part of its digitalization strategy with the aim of bringing speed and agility to the way it develops and tests new ideas. One such idea pursued in this way is the VR-AgrarInvestplan, an application for agribusiness customers that helps to optimize finances including development loans. To encourage development of concepts for the future of banking in the cooperative financial network, DZ BANK has also supported various hackathons by providing the necessary infrastructure, technologies, and participants.

The merger of DZ BANK and WGZ BANK into one cooperative central institution was completed in the year under review, thereby bringing to an end the steady process of consolidating all these institutions. DZ BANK and the former WGZ BANK have

brought together their strategic and operating strengths for the benefit of the entire cooperative financial network, based on a successful business model and complementary market territories.

The merger will generate considerable strategic, business management, and regulatory synergies. One of the core aims is to generate additional growth and earnings. DZ BANK will continue to develop its central institution services in corporate banking, international business, cooperative network business, capital markets business, and transaction banking. It will also retain its decentralized structures for supporting the local cooperative banks and the corporate banking business. DZ BANK's overall aim is to achieve a level of profitability that enables an appropriate dividend to be paid over the long term, taking the cooperative support principle into consideration. At the same time, DZ BANK needs to be able to retain sufficient profits so that it can meet the regulatory requirements for capital adequacy.

Potential savings result from combining and standardizing structures and processes and from avoiding duplication of capital investment on platforms for IT and processes, particularly in view of the growth in regulatory requirements. Integration will include a reduction in the number of jobs. With this in mind, DZ BANK entered into agreements on July 13, 2016 consisting of the reconciliation of interests required by German law and a social compensation plan. Total income and cost synergies of €100–150 million per year are expected after the integration has been completed. The one-off costs of the merger amount to approximately €350 million.

The merger of the two central institutions gave rise to a huge range of IT challenges in 2016 that will continue in 2017. To date, all the necessary milestones in connection with the merger have been reached on schedule. Shared infrastructure was made available on August 1, 2016. The other divisions will be gradually integrated from both functional and technical perspectives over the period up to the end of 2018, although efforts will be made to complete key stages in the migration process by the end of 2017. This will be accompanied by the process of harmonizing operational and organizational structures as well as existing product portfolios.

Once the central institutions have been successfully integrated, the plan is to refine the governance structure by the end of the decade. This will involve pooling the overarching strategic and steering functions in one unit (holding company) that will only have a few tasks related to the cooperative network and bringing together the operating activities of the central institution in a separate entity at the same level as the other group entities. This will enable the greatest possible transparency regarding the income structure of the merged central institution and its business lines.

2.1. Cooperative Banks/Verbund

Support for the local cooperative banks provided by Regionaldirektoren [regional directors] and the consultancy and other services delivered in connection with strategic bank management are the responsibility of the Cooperative Banks/Verbund division. The Regionaldirektoren serve as a central strategic point of contact for the cooperative banks' business relationship with the DZ BANK Group to strengthen the financial products and services they provide.

DZ BANK also offers the local cooperative banks consulting services on regulatory issues and at every stage of the strategic bank management process, from defining the strategy to managing risk and implementing the strategy. It aims to leverage further income synergies going forward by offering a targeted range of outsourcing and process contracting services.

As part of the merger-related integration process, DZ BANK will harmonize the range of services and the processes involved in consulting and strategic bank management. To ensure that customer satisfaction is maintained, it will be particularly important to remain in close contact with customers and shareholders, and to provide detailed support during the migration phase.

2.2. Corporate Banking

DZ BANK offers corporate customers in Germany the entire range of corporate banking services, either directly or on a decentralized basis in collaboration with the local cooperative banks. The holistic relationship management approach is tailored to the needs of the customer and encompasses all the products and services of the DZ BANK Group.

The merger of DZ BANK and WGZ BANK means the customer-focused marketing can be expanded throughout Germany. Currently, five regional divisions (Northern and Eastern Germany, Central Germany, Western Germany, Baden-Württemberg, and Bavaria) operating from a total of fourteen locations look after the business with corporate customers in

Germany. This guarantees proximity to the local cooperative banks and the joint customers. The regional customer relationship management structure is a major factor in strengthening the market position of the cooperative financial network, in that it enables DZ BANK to work together with the local cooperative banks to enhance existing customer relationships and attract new customers. This strategy has enabled the cooperative financial network to expand its share of the corporate lending market to more than 20 percent despite the ferocious competition and limited market growth in a persistently challenging market environment. The aim is to increase this figure to 25 percent over the medium term.

As part of the digitalization activities in the reporting year, DZ BANK continuously refined VR BusinessOnline (formerly Easy Entry Business), the online offer and agreement process provided for the cooperative financial network. This service now also allows customers of the local cooperative banks to submit documents electronically and save their inquiries. It provides the user banks with a convenient way of managing customer inquiries. Products from two other entities in the DZ BANK Group, namely Union Asset Management Holding AG, Frankfurt am Main, (Union Asset Management Holding; subgroup abbreviated to UMH) and R+V Versicherung AG, Wiesbaden, (R+V Versicherung; subgroup abbreviated to R+V), have now also been integrated into the system. Looking ahead, there are plans to include options for finalizing product orders, including online verification of identity. BankingGuide is a tool that has been developed to follow on from the advisory logic in ProFi ZV. It provides digital support for the local cooperative banks, enabling them to continue to improve the quality of their advice in the payments processing business – regardless of whether advice is given on a website or face-to-face – thereby increasing customer loyalty and product sales. DZ BANK has also invested in TrustBills, an electronic marketplace for selling companies' receivables to international institutional investors.

The increasing internationalization of the German economy remains one of the core issues in corporate banking. For the benefit of its customers, DZ BANK has developed a cash and treasury management tool set in collaboration with BELLIN as well as a special customer approach strategy entitled 'International business for corporate customers of the local cooperative banks' to help the cooperative financial network leverage the considerable opportunities for growth and income in this underdeveloped area of business. DZ BANK is also planning to open a representative office in Jakarta because of the heavy demand for financing from German corporate customers in connection with transactions involving Indonesian partners.

2.3. Retail Banking

In the Retail Banking business line, DZ BANK offers the cooperative banks and carefully selected partner or third-party banks end-to-end services (generally platform- and process-driven) in the securities business, focusing on personal investments.

It systematically pursues an omnichannel approach and supports the local cooperative banks with their omnichannel presence. The focus is on customers, with the objective of offering them a comprehensive personal investment solution that is tailored to their needs and available around the clock. Customers benefit not only from conventional banking but also from digital access to their bank, offering mobile login, numerous online tools (such as VR-ProfiBroker and VR-ProfiTrader), and other options such as the derivatives portal at www.dzbank-derivate.de.

DZ BANK is aiming for further growth in product sales, enabling it to continue to strengthen its position as market leader in the overall German market for investment certificates. It is also working to refine its advisory services for the local cooperative banks with a view to leveraging potential from business with high-net-worth individuals in collaboration with DZ PRIVATBANK S.A., Strassen, (DZ PRIVATBANK S.A.; subgroup abbreviated to DZ PRIVATBANK).

2.4. Capital Markets

In the Capital Markets business line, DZ BANK offers its customers investment and risk management products, together with advisory services in connection with the interest rate, credit, equities, and currency asset classes. The range of products and services – which includes both primary and secondary market activities – is based mainly on the needs of the cooperative banks, their retail and corporate customers, and the corporate customers and institutional customers in Germany and abroad supported directly by DZ BANK. The offering also includes research services and the provision of e-trading platforms.

As part of DZ BANK's capital market activities, Group Treasury also holds responsibility for

cash-pooling for the cooperative financial network, manages liquidity and interest rate risk at DZ BANK, and ensures that the local cooperative banks have access to both global liquidity markets and central bank liquidity. To address the growing challenges presented by the market and regulatory requirements, liquidity management and the funding structure are continuously refined in various projects; a strategic treasury function with integrated resources management is also being set up.

2.5. Transaction Banking

To help the local cooperative banks make the most of the potential in the transaction banking market, DZ BANK provides a comprehensive range of services covering payments processing/cash, cards/e- and m-payments, and depositary business. In this way, it supports the cooperative financial network, making optimum use of economies of scale and potential efficiencies.

DZ BANK is one of the major European players in the processing of bulk payments. It has been able to achieve economies of scale for some years by using equensWorldline, the leading European provider in this business. This partnership will also enable DZ BANK to leverage potential synergies in the future because equensWorldline is already geared up for future payments system changes, such as those in connection with instant payments and alternative channels for transferring funds internationally.

In the year under review, the depositary reported a record level of assets under depositary, which means it continues to be ranked number 5 in Germany, behind four international competitors.

In the area of e-payments and m-payments , the paydirekt online payments solution launched back in 2015 continued to be expanded as a core project undertaken by the banks in Germany. The focus was on continually increasing the number of participating merchants, attracting beacon companies, and refining the solution's underlying technology. To satisfy customer demand for faster payments processing, DZ BANK is supporting the initiative of the Euro Retail Payments Board to introduce a European instant payments system. This clearly sets the direction of future developments in payments processing and also offers Europe the opportunity to position itself as a global competitor in this business. In this context, one of the group entities, ReiseBank AG, Frankfurt am Main, (ReiseBank), was involved in a pilot project in the year under review in which it carried out for the first time a real payment using blockchain technology, one of the technologies of the future in banking.

3. Management of DZ BANK

3.1. 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 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
- Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, (Bausparkasse Schwäbisch Hall; subgroup abbreviated to BSH)
- Deutsche Genossenschafts-Hypothekenbank AG, Hamburg, (DG HYP)
- DVB Bank SE, Frankfurt am Main, (DVB Bank; subgroup abbreviated to DVB)
- DZ PRIVATBANK
- R+V
- TeamBank AG Nürnberg, Nuremberg, (TeamBank)
- UMH
- VR-LEASING AG, Eschborn, (VR-LEASING AG; subgroup abbreviated to VR LEASING)
- WL BANK AG Westfälische Landschaft Bodenkreditbank, Münster, (WL BANK).

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

3.2. 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.

3.2.1. 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.

3.2.2. 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).

3.2.3. Corporate management committees

The **Group Coordination Committee** ensures coordination between the key entities in the DZ BANK Group to achieve consistent management of opportunities and risks, capital allocation, strategic issues, and leveraging synergies. In addition to the Board of Managing Directors of DZ BANK, the members of this committee comprise the chief executive officers of BSH, DG HYP, DZ PRIVATBANK, R+V, TeamBank, UMH, VR LEASING, and WL BANK.

Special working groups whose members comprise representatives from all business lines and group functions are responsible for the following areas of activity and report to the Group Coordination Committee:

- product and sales/marketing coordination for retail customers, corporate customers, and institutional clients;
- IT, operations, and resources strategies;
- human resources management;
- finance and liquidity management/risk management.

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 Group Finance, Group Strategy and Controlling, Group Risk Controlling, Credit, Credit Special, and Group 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.

- 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. The limitation and monitoring of credit risk is based on agreed and binding group standards and procedures, taking into account the business policy concerns of the entities involved. The Group Credit Management working group is responsible for the further development of the group credit risk strategy and the group credit manual and 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 credit portfolio 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. At DZ BANK level, the Asset Liability Committee/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, and regulatory law. It discusses new statutory requirements and works out possible implementation options.

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** act as centers responsible for coordination and pooling 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 retention and attracting new customers by providing needs-based solutions (products and processes) as part of a holistic

advisory approach across all sales channels (omni-channel approach).

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

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 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 framework jointly developed and 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 audits – and for developing best practice in internal audit activities. The working group reports to the Chief Executive Officer of DZ BANK 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 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 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 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 developed in the relevant DZ BANK departments and subsidiaries by the product and sales committees.

3.3. Key performance indicators

DZ BANK's KPIs for profitability, volume, productivity, and liquidity and capital adequacy are presented below.

- **Profitability figures:**
  The profitability figures (primarily allowances for losses on loans and advances, profit/loss before taxes, net income for the year) are presented in chapter II., sections 3.1. and 3.2. of this management report.

- **Volume figures:**
  The main volume-related KPIs include equity and total assets, which are presented in chapter II., section 4. of this management report.

- **Productivity:**
  One of the most significant productivity KPIs is the cost/income ratio. This figure is described in chapter II., section 3.1. of this management report.

- **Liquidity adequacy:**
  Appropriate levels of liquidity reserves are demonstrated using the ratios for economic and regulatory liquidity adequacy presented in chapter VI., section 6. of this 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 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.

3.4. Management process

In the annual strategic planning process, the entities in the DZ BANK Group produce a business strategy (objectives, strategic direction, and initiatives), 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.

Groupwide initiatives are implemented in order to unlock identified marketing potential. These include the development of new, innovative products and sales methods for the business lines – Corporate Banking, Retail Banking, Transaction Banking, and Capital Markets – in order to further strengthen sales by the DZ BANK Group and the local cooperative banks. Regular reports on the individual initiatives are submitted to the relevant product and sales committee. If appropriate, certain aspects of the initiatives may be handled by the Group Coordination Committee. This results in more efficient cooperation in the cooperative financial network.

At DZ BANK level, the main divisions involved in the strategic planning process are Group Strategy and Controlling, Group Risk Controlling, Group 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 Group Strategy and Controlling division is responsible for overall coordination, including strategic financial planning as part of the strategic planning process.

II. Business report

1. Economic conditions

Over the reporting year, average inflation-adjusted gross domestic product (GDP) in Germany rose by 1.9 percent year on year. The uptrend in economic growth of the previous two years was sustained in 2016, with the recovery making steady progress over the course of the year.

Economic output in the first quarter of 2016 was up by 0.7 percent compared with the preceding quarter. This was followed by a GDP gain of 0.5 percent in the second quarter. After muted growth of 0.1 percent in the third quarter, the German economy ended the fourth quarter of 2016 with expansion of 0.4 percent.

In the year under review, the eurozone economy grew by 1.7 percent year on year, although the pace of growth slackened following a first-quarter growth rate of 0.5 percent (compared with the previous quarter), the rates achieved in the second and third quarters of 2016 being 0.3 percent and 0.4 percent respectively. Growth in the fourth quarter remained at the same rate of 0.4 percent.

Consumer spending once again proved to be the main driver behind the economic recovery in the eurozone in 2016. So far, the geopolitical crises, various conflicts, and the uncertainty arising from the Brexit vote in the United Kingdom and from the outcome of the US presidential elections have failed to dent consumer confidence. As in 2015, lower energy prices also continued to boost household consumption in the reporting year. In view of the weaker levels of foreign trade with emerging markets, it is unlikely that eurozone exports will have made any contribution to the growth because export growth in the eurozone will probably not have matched the rise in imports.

In the United States, economic growth in the reporting year was just 1.6 percent. Growth in the US economy was uneven over the course of the year. Following a weak start to the year, growth picked up again in the two subsequent quarters before losing momentum again in the fourth quarter. Overall, the principal economic driver in the US remained the recovery in consumer spending, which was also bolstered by further improvements in the labor market, notably a further fall in the unemployment rate and a sharp rise in recruitment. The recovery in house-building slowed again during the year. Businesses did not invest as much in plant and machinery in 2016 as they had in the previous year.

Some of the emerging economies continued to experience economic difficulties in the year under review. Weaknesses in commodities markets continued to have a detrimental impact, primarily in Brazil and Russia, even though the economic crisis in both countries was gradually abating. China continued to feel the effects of the slowdown in its economic growth. By and large, demand from emerging markets once again provided relatively low growth stimulus for German exports in 2016.

An increase in consumer and government spending provided a major boost to the German economy in the reporting year. Government spending was also influenced by additional expenditure incurred in connection with the greater influx of refugees. Consumer demand rose by 2.0 percent year on year, aided by robust trends in the labor market and the extremely low returns available on consumer investments. At the same time, however, businesses remained unenthusiastic about spending on capital equipment in 2016 in view of the geopolitical uncertainties and crises.

The increase in tax receipts generated by the steady economic growth meant that public finances in Germany ended 2016 with a budget surplus of 0.8 percent of GDP.

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

In the reporting year, the focus in the EU continued to be on efforts to stabilize economic conditions in the eurozone.

The euro area maintained its restrained rate of economic growth during the year under review, while growth in the global economy remained steady at a modest level overall.

In the eurozone as a whole, however, once again only limited progress was made in reducing new and total borrowing. At the end of the third quarter of 2016, the total borrowing of the 19 eurozone countries equated to 90.1 percent of their GDP, a year-on-year decrease of just 1.4 percentage points compared with the figure of 91.5 percent as at September 30, 2015.

Eurozone countries Portugal and Spain, which had been reliant on EU aid during the sovereign debt crisis, notched up further gains in economic efficiency in the third quarter of 2016 compared with the third quarter of 2015 on their path of economic renewal and fiscal recovery.

Even though France and Italy, countries that are important in generating overall economic growth in Europe, also increased their GDP over the same period, they continued to suffer from a high level of indebtedness in the same way as some other eurozone countries, notably Greece, Portugal, and Spain.

At the beginning of 2012, these EU member states had agreed the Fiscal Compact, which tightened the rules on indebtedness originally agreed in the Stability and Growth Pact of 1997. Under the Fiscal Compact, the countries committed to reducing their debt-to-GDP ratio each year by one twentieth of the difference between their actual debt-to-GDP ratio and the Maastricht threshold of 60 percent.

However, between the end of 2011 and the end of 2016 (preliminary figures), debt ratios actually increased in Greece from 172 to 180 percent, in Italy from 117 to 133 percent, and in Portugal from 111 to 130 percent. Similarly, the debt ratio in Spain rose from 70 percent to just under 100 percent, while France's debt ratio went up from 85 to 96 percent. The only eurozone countries able to report a fall in debt ratios between the end of 2011 and the end of 2015 were Germany, Malta, Ireland, and Latvia.

After Greece implemented a range of reforms to satisfy certain preconditions, European lenders provided the country with loans of €7.5 billion and €2.8 billion in June and October 2016 respectively. In December 2016, the Eurogroup agreed short-term debt relief without being able to clarify whether there would be any further involvement of the International Monetary Fund (IMF) in the arrangements for Greece. The German Bundestag had only approved the package of measures subject to the proviso that the IMF would continue to be one of the creditors in the future. Regardless of the debt relief provided for Greece, the country's debt-to-GDP ratio was expected to rise from 177 percent at the end of 2015 to 180 percent at the end of the year under review.

Italy is suffering not only because it has severe problems in its banking system caused by impaired loans of around €360 billion but also because it has the highest level of government debt in the eurozone after Greece. The failure of constitutional reform at the beginning of December 2016 and the associated resignation of former Prime Minister Matteo Renzi have once again made Italy's political instability all too apparent. In these circumstances, it is a tough challenge for the country to implement austerity measures and strengthen its competitiveness.

Following parliamentary elections in Portugal at the beginning of October 2015, the new minority government had initially reversed some of the structural reforms introduced by the previous government, but

was nevertheless able to make some progress in achieving stable economic growth over the course of the year. However, only DBRS, the Canadian rating agency, is issuing an investment-grade rating for Portugal's bonds. It is therefore solely on the strength of this rating from one rating agency that Portugal is able to access the bond-buying program for government bonds pursued by the European Central Bank (ECB) and that Portuguese banks are able to participate in the ECB's refinancing operations.

In Spain, no parties had been able to form a fully functioning government following parliamentary elections toward the end of 2015. A second round of elections was held on June 26, 2016, as a result of which the previous Prime Minister, Mariano Rajoy, was finally able to form a minority government at the end of October 2016. Despite economic growth achieved in Spain in the year under review, Mariano Rajoy faces the challenge of introducing considerable austerity measures, without which it will not be possible to meet the deficit target for 2017 of 3.1 percent of GDP specified by the European Commission and the Council of the European Union.

Economic growth in France is also hampered by structural deficiencies similar to the problems in Italy. Key factors behind unsatisfactory levels of business profitability are bureaucracy and a tax system that inhibits growth. Labor market reforms agreed by the French government in the summer were preceded by massive strikes and protests, leading to a substantial loss of production. This highlights the difficulties faced by politicians implementing structural reforms.

The persistently high debt levels in the eurozone are matched by the European Commission's unwillingness to ensure that individual member states consistently comply with the targets specified for the whole of the EU under the Maastricht criteria. These targets reflect the fundamental economic view that sound public finances over the long term are vital for a fully functioning economy and that each individual EU member state will not be able to achieve a position of stable government finances unless its economy is internationally competitive.

A key reason for the European Commission's reluctance to implement the stability criteria is most probably the growing skepticism about the EU. This is highlighted by a large number of political movements in various EU countries that are opposing the jointly agreed stabilization efforts. In Greece and Portugal, the parties giving voice to these new political movements have already gained direct political influence as a result of parliamentary elections; in other eurozone countries, such parties are hampering the formation of a stable government majority.

Even if the low level of interest rates ushered in by the ECB has significantly reduced the interest burden for public finances, there is a risk that this trend will mean politicians in the eurozone countries concerned remain unwilling to implement structural changes to the extent that is actually necessary. However, there is also a reverse effect: the longer numerous EU countries fail to put their public finances on a sound and sustainable footing, the greater the pressure on the ECB to keep interest rates down.

An important factor to consider is that continued structural deficiencies in a number of eurozone countries raise the question of whether these countries can afford to pay higher rates of interest at all. This question may arise not only if the ECB substantially scales back its bond-buying program, but also in the event of a significant market-driven increase in the level of interest rates. A slight increase in long-term interest rates has already been apparent in the wake of Donald Trump's election on November 8, 2016 as the next US president.

At its meeting on March 10, 2016, the ECB decided to cut the key interest rate by a further 5 basis points, from 0.05 percent to 0.00 percent, and to again lower the rate on the deposit facility for banks to minus 0.40 percent from minus 0.20 percent. It also specified that, from April 2016, it intended to expand its monthly volume of bond purchases from €60 billion to €80 billion until the end of March 2017. On December 8, 2016, the ECB decided to extend its monthly bond-buying program until the end of 2017, but with a reduced monthly volume of €60 billion.

The ECB's stated aim is to guide inflation back to a level close to, but below, 2 percent. To achieve this target, the ECB aims to strengthen growth in the eurozone by encouraging greater lending by banks.

By contrast, the US Federal Reserve (Fed), having begun to reverse its interest-rate policy in mid-December 2015, held the key rate for short-term lending between banks to cover minimum reserve requirements in a range of 0.25 percent to 0.50 percent throughout almost the whole of the reporting period. It was only on December 14, 2016 that it hiked the key rate by 25 basis points to a range of 0.50 to 0.75 percent.

The serious and far-reaching intervention in economic activity represented by the ECB's 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. There is also a significant impact on the earnings power not only of banks but also of building societies and life insurers.

The ECB cited the persistently low level of inflation as one of the critical reasons why its expanded monetary policy measures were required. Inflation in the eurozone stood at 1.1 percent for December 2016, whereas the rate in June 2016 had been 0.1 percent. The rise in the rate of inflation after the middle of the reporting year was largely attributable to the rise in the oil price again compared with the corresponding period in the previous year. Following the agreement by the members of the Organization of the Petroleum Exporting Countries (OPEC) on November 30, 2016 to cut production, the price of North Sea Brent Crude rose to US$ 56.8 per barrel as at December 31, 2016 (December 31, 2015: US$ 37.3). The core rate of inflation, which excludes energy and food prices, published by the EU's statistical office Eurostat for December 2016 was 0.9 percent.

The ECB is maintaining its policy of strengthening economic growth by transferring liquidity to the eurozone banks, the aim of which is to encourage the banks to commit to a greater level of lending.

However, another factor that needs to be taken into account is that the eurozone banks are themselves under an obligation to improve their capital adequacy and liquidity position as a consequence of tighter regulatory requirements following the introduction of Basel III.

Throughout the EU, lending to businesses is still showing little momentum. Particularly in Germany, the weak demand for borrowing is the result of a generally subdued level of investing activities. On top of this, good cash flows are making it easier for businesses to finance capital spending themselves. In Italy and other southern European countries, there is also a problem on the supply side. This is caused to a large degree by the crisis in the banking sector, which is suffering from a high number of non-performing loans.

Moreover, stronger demand for credit from companies in the eurozone is held back by borrowers' cautious assessment of economic conditions, which is influenced in turn by geopolitical crises, the aforementioned instability and, above all, the uncertainty about the consequences of the Brexit vote and US presidential election.

Given the limited impact on the real economy from the ECB's monetary policy measures, an improvement in structural conditions therefore remains the best possible route by which a range of eurozone countries could escape the high level of indebtedness.

Against a backdrop of challenging market conditions, nearly all the major German banks reported a fall in operating income in 2016. The allowances for losses on loans and advances recognized by the major banks were mostly higher than in 2015. Administrative expenses decreased in the majority of cases.

3. Financial performance

3.1. Financial performance at a glance

DZ BANK successfully consolidated its position in the reporting year in challenging market conditions influenced primarily by the extremely low level of interest rates.

WGZ BANK was merged into DZ BANK with effect from January 1, 2016. For reasons of comparability, the following data showing the financial performance of the merged institution in 2016 is compared with the prior-year figures reached by adding together the totals for DZ BANK and WGZ BANK without any consolidation of income and expenses.

The year-on-year changes in the key figures that made up the operating profit generated by DZ BANK in 2016 were as described below.

FIG. 1 – INCOME STATEMENT

€ million	2016	2015	Change (%)
Net interest income[1] of which: income from long-term equity investments[2]	**1,351** 741	1,490 898	-9.3 -17.5
Net fee and commission income	**406**	398	2.0
Net trading income	**563**	324	73.8
Administrative expenses	**-1,514**	-1,317	15.0
Staff expenses	-677	-621	9.0
Other administrative expenses[3]	-837	-696	20.3
Other net operating income/ expense	**21**	-126	>100.0
Operating profit before allowances for losses on loans and advances	**827**	769	7.5
Allowances for losses on loans and advances[4]	**-313**	123	>100.0
Operating profit	**514**	892	-42.4
Other net income/expense[5] of which: reversal of reserves required by section 340g HGB	**-245** –	-65 565	>100.0 –
Profit before taxes	269	827	-67.5
Income taxes[6]	**54**	-428	>100.0
Net income for the year	**323**	399	-19.0

1 See annual financial statements, income statement, total of nos. 1.–4.
2 See annual financial statements, income statement, total of nos. 3.b)+3.c)+4.
3 See annual financial statements, income statement, total of nos. 9.b)+10.
4 See annual financial statements, income statement, no. 12. and no. 13.
5 See annual financial statements, income statement, total of nos. 14.–17. and nos. 19.+20.
6 See annual financial statements, income statement, total of nos. 22.+23.

Operating income amounted to €2,341 million, a year-on-year rise of €255 million (2015: €2,086 million). It is made up of net interest income, net fee and commission income, net trading income, and other net operating income/expense.

Administrative expenses went up by €197 million or 15.0 percent to €1,514 million (2015: €1,317 million).

The **cost/income ratio** (i.e. the ratio of administrative expenses to operating income) for 2016 was 64.7 percent (2015: 63.1 percent).

Operating profit before allowances for losses on loans and advances grew by €58 million to €827 million (2015: €769 million).

Allowances for losses on loans and advances amounted to €313 million. The prior-year figure had been a net reversal of €123 million.

The **operating profit** amounted to €514 million (2015: €892 million), a year-on-year decline of €378 million.

The details on the financial performance of DZ BANK set out above and below (section 3.2.) include the following variances compared with the information provided in the outlook in chapter V. of the 2015 management report.

The operating profit before allowances for losses on loans and advances achieved in the reporting year was €150 million higher than the forecast for 2016. The main reason for this positive variance was higher-than-predicted net trading income, which resulted from a one-off item in connection with the successful completion of mediation proceedings in the legal dispute with Lehman Brothers International Europe, as well as a higher gain arising on the measurement of own issues. However, other administrative expenses exceeded the budgeted figure for 2016, primarily because of the merger. Moreover, other net operating income was significantly higher than budgeted. This is because the statutory change to the accounting treatment for pension obligations was not taken into consideration as the statutory process to adopt the change had not yet been completed. Other net operating income was also boosted by the gain arising on the measurement of assets held to cover pension obligations.

3.2. Financial performance in detail

The individual year-on-year changes in the financial performance of DZ BANK in 2016 are described in detail below.

Net interest income declined by 9.3 percent to €1,351 million (2015: €1,490 million).

Net operating interest income (net interest income excluding income from long-term equity investments) grew by a total of 3.0 percent to €610 million (2015:

€592 million). Based on systematic management of funding, which included the use of international money markets, net interest income from money market business improved despite tough market conditions dominated by the historically low interest rates. In addition, DZ BANK managed to increase the net interest margin contribution in the Corporate Banking business line in a challenging competitive environment.

In the detailed descriptions, the financial performance of the business lines is presented on the basis of the net income values used by financial planning and control for business management purposes.

At DZ BANK, the Corporate Banking business line has five regional corporate customer divisions that focus on corporate banking in Germany. Following the merger of DZ BANK and WGZ BANK, the joint central institution is now represented nationwide, based on the four existing regional corporate customer divisions (Northern and Eastern Germany, Central Germany, Baden-Württemberg, and Bavaria) and also a new fifth division (Western Germany) comprising the territory of the former WGZ BANK.

Business with German corporate customers and foreign customers with links to Germany is also supported by the Investment Promotion and Structured Finance divisions. Following the merger of the two cooperative central institutions, the development loan and agriculture business has been pooled under the Investment Promotion division at the Düsseldorf office.

Customer relationship management for corporate customers is provided locally by the cooperative bank, together with DZ BANK or directly by DZ BANK, on the basis of the principle of decentralization applied by the cooperative financial network and focusing on the needs of the business concerned.

By working closely with large and medium-sized companies, DZ BANK was able to slightly increase its lending volume in Germany and at the same time achieve further improvement in its margins in this fiercely competitive area of business.

This increase was primarily attributable to the tried-and-tested distribution of responsibilities in the cooperative financial network and the strong willingness of the companies in this sector in Germany to commit to significant capital investment.

According to the latest survey of large and medium-sized companies carried out by DZ BANK, the appetite of the surveyed businesses for capital investment is well above the average for this survey established over many years. DZ BANK has been able to support this capital investment on a sustainable basis acting as a long-term partner. The businesses are generally structured so that they can withstand various crises and have demonstrated that they are well equipped for the future based on their sound capital and liquidity position.

However, even these large and medium-sized companies cannot escape the current economic uncertainty in the eurozone, particularly in view of the UK's vote to leave the EU. There is also an adverse impact from the slowdown in economic growth in some of the major emerging markets.

In the Corporate Banking business line, the net interest margin contribution rose by a total of 2.2 percent to €419.1 million (2015: €410.1 million).

In the five regional corporate customer divisions, the net interest margin contribution went up by 3.4 percent in total to €232.9 million (2015: €225.2 million).

In the commercial real estate business, a department of the Western Germany regional division offers real estate customers the specific expertise of this department aimed at property developers, project developers, and real estate investors. These activities focus on individual properties and also on portfolios in which the properties are predominantly leased to third parties. The department develops short- and long-term financing solutions individually tailored to the property and customer objectives. The net interest margin contribution of the real estate customers department rose by 5.7 percent to €34.3 million (2015: €32.4 million).

The net interest margin contribution from the development lending business in the Investment Promotion division went up slightly year on year, by 0.6 percent, to €60.0 million (2015: €59.7 million) despite a further contraction in margins.

Performance in the main areas of development activity within traditional investment finance, which primarily include business start-ups and financing of innovation projects, remained steady in this highly competitive area of business. However, some growth was achieved in the development lending portfolios within the private house-building business and commercial environmental finance.

The main year-on-year changes in the net interest margin contribution from each of the product fields in the Structured Finance division are described below.

In the syndicated business/renewable energies product field, the net interest margin contribution advanced by 3.6 percent to €20.8 million in the year under review (2015: €20.1 million). Despite growing competition, there was an increase in renewable energies business during the reporting year, particularly the funding of wind turbines.

In the acquisition finance product field, debt finance is arranged and structured to support the acquisition of large and medium-sized companies, primarily in the German-speaking countries. Large numbers of customers made use of the high degree of liquidity in lending and bond markets to redeem their loans. This, in combination with a selective approach to the granting of new loans, led to a 1.7 percent year-on-year contraction in the net interest margin contribution to €23.5 million (2015: €24.0 million).

Overall, there was encouraging growth in the project finance field during the year under review, with the net interest margin contribution advancing by 3.3 percent to €25.2 million (2015: €24.4 million).

In the advice and sales (west) product field, which is responsible across all products for renewable energies, syndicated loans, acquisition finance, and international trade and export finance business, the net interest margin contribution rose sharply, by 27.4 percent, to €18.7 million (2015: €14.7 million).

The emphasis in the international trade and export finance product field is very much on providing support for German large and medium-sized corporate customers involved in international business. The net interest margin contribution dropped from €46.1 million in 2015 to €44.5 million in 2016, a year-on-year decrease of 3.4 percent.

The asset securitization product field comprises structured investments and receivables financing for a defined selection of asset types. This gives unlisted companies access to the capital markets and to finance based on their portfolio of receivables. The liquidity costs in the asset securitization product field for the provision of the backup lines in connection with the financing made available by the conduit came to €6.5 million in the reporting year, €2.5 million higher than the equivalent figure in 2015 of €4.0 million.

DZ BANK's reported income from long-term equity investments went down by 17.5 percent to €741 million (2015: €898 million). The year-on-year change was primarily attributable to a dividend from EURO Kartensysteme GmbH, Frankfurt am Main, (EKS), which had benefited from income of €62 million generated from the disposal of MasterCard shares; in 2015, the corresponding dividend amount had been €134 million. Furthermore, there were year-on-year decreases in income from the long-term equity investments in Union Asset Management Holding (some of which is collected indirectly via VR GbR, Frankfurt am Main), which was down by a total of €51 million, in DG HYP (down by €46 million), TeamBank (down by €40 million), in Bausparkasse Schwäbisch Hall (down by €28 million), and in WL BANK (down by €19 million). These amounts were partly offset by the increases in the income from the long-term equity investments in R+V Versicherung (up by €70 million) and in DZ PRIVATBANK S.A. (up by €12 million).

Net fee and commission income at DZ BANK rose by 2.0 percent to €406 million, which was slightly higher than the prior-year figure of €398 million.

In the Corporate Banking business line, the service contribution rose slightly, by 1.4 percent, to €181.4 million (2015: €179.0 million).

In the five regional corporate customer divisions, the service contribution went up by 7.5 percent in total to €67.1 million (2015: €62.4 million).

The real estate customers department generated a service contribution of €6.1 million, a year-on-year rise of 36.7 percent (2015: €4.4 million).

The main year-on-year changes in the service contribution from each of the product fields in the Structured Finance division are described below.

In the syndicated business/renewable energies product field, the service contribution of €4.4 million in the reporting year was up by 16.4 percent compared with the figure of €3.8 million reported for the previous year.

Much fiercer competition characterized the acquisition finance product field during the year under review. The service contribution therefore fell by 16.6 percent to €9.6 million (2015: €11.5 million).

In the project finance product field, the service contribution went up by 41.2 percent to €13.5 million (2015: €9.6 million).

The service contribution generated in the advice and sales (west) product field climbed by a substantial 15.6 percent to €10.4 million (2015: €9.0 million).

In the international trade and export finance product field, the service contribution for the reporting period fell by 3.4 percent to €11.4 million owing to increased competition (2015: €11.8 million).

The service contribution from the international documentary business product field (letters of credit, guarantees, collections) dropped by 4.6 percent to €16.9 million (2015: €17.7 million).

In 2016, the service contribution in the asset securitization product field came to €47.5 million, down by 9.6 percent compared with the figure of €52.5 million for 2015. The main reasons for this decrease were the expiry and contractual reduction of some portfolio transactions.

In the Capital Markets Institutional Clients and Capital Markets Retail Clients business lines, the comprehensive range of advisory, structuring, and placement services available in relation to investment, capital, and mezzanine products again proved popular with customers of the cooperative banks and direct customers of DZ BANK in 2016, and customers drew on these services frequently.

Based on various ranges of products, DZ BANK managed to prevail against German and international competitors, despite the market remaining fiercely contested. The successfully implemented transactions and the satisfaction of customers are testimony to a high level of product expertise and effectiveness in a constantly changing market environment. The cooperative banks and direct customers value the transaction security offered by DZ BANK in connection with the execution of capital and mezzanine transactions.

The service contribution generated by the Operations/Services business line in 2016 was also higher than the equivalent figure reported for 2015 as a result of a rise in the income from securities custody business.

Net trading income amounted to €563 million in 2016 (2015: €324 million).

Trends in capital markets in the year under review were shaped by the ECB's decision in spring 2016 to increase the volume and extend the duration of its program of quantitative easing while, at the same time, lowering the benchmark rate and taking the interest rate for central bank deposits further into negative territory. At the beginning of December 2016, the ECB extended its bond-buying program until the end of 2017, although it reduced the monthly purchasing volume.

Financial markets were also affected during the reporting period by uncertainty surrounding the timing and extent of a rise in US interest rates in 2016. The wait only came to an end in mid-December 2016 when the Fed announced an interest rate hike of 25 basis points to a range of 0.50 to 0.75 percent.

Another negative influence in the first half of 2016 was the uncertainty about the outcome of the referendum on Brexit. However, as the year moved on, European stock exchanges saw no lasting impact on share prices from the Brexit vote on June 23, 2016, from the outcome of the US presidential elections on November 8, 2016, or from the referendum on constitutional reform in Italy on December 4, 2016. Overall, these equity prices proved to be significantly more volatile during the course of 2016 compared with 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.

Nonetheless, DZ BANK's contribution from trading income improved considerably during the reporting period.

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.

Against the current backdrop of negative interest rates, German retail investors' top priorities are safety and intelligent investment solutions. Catering to this customer need, DZ BANK works closely with the local cooperative banks and has managed to further significantly strengthen its position in the German derivatives market since the third quarter of 2015. DZ BANK's performance has been impressive, confirming its market leading position with a market share of 17.7 percent as at the end of December 2016 (joint central institution), based on the market volume invested in structured securities.

DZ BANK continued to step up its activities in relation to selling exchange-traded derivative securities products during the reporting year, enabling it to significantly increase its market share from an average for 2015 of 9.2 percent to an average for 2016 of 11.0 percent (joint central institution). Furthermore, efforts to continuously and effectively digitalize and optimize securities processes in retail banking were recognized by renowned experts when DZ BANK received the Best Process Award 2016.

In order to stabilize their financial performance over the long term, the cooperative banks acquired investments with residual maturities of more than 5 years as part of their own-account investing activities. Credit-rating-linked products such as corporate bonds and simply structured credit products saw increased demand. The cooperative banks also aimed for broad diversification in their securities portfolios, particularly with regard to investments in equities and foreign currencies. To this end, they increasingly invested in fund products from the Union Investment Group.

In addition, the cooperative banks focused on managing their liquidity coverage ratio (LCR) in accordance with their needs. By running various advisory and product initiatives, DZ BANK supported the cooperative banks' efforts to establish the level of high-quality liquid assets stipulated by the regulator while optimizing returns.

Institutional customer business proved to be structurally robust in the year under review. Investment patterns were determined by the low interest rates and regulatory requirements. Insurance companies aimed for greater use of yield curves to enable them to meet their returns requirements. Negative interest on short-term instruments led to a continuing rise in demand for long-maturity bank and corporate bonds, and for foreign Pfandbriefe. Asset managers reported inflows over the course of the year in subordinated corporate and bank bond business, and also in business involving bonds from emerging markets. This impacted the pattern of asset manager demand. Asset managers also benefited from an upturn in DZ BANK's new issues business.

In corporate customer securities business, there was less demand for commercial paper and bond issues from institutional investors in view of the negative interest-rate environment and reduced yields. In the reporting year, this was countered to some extent by greater corporate customer interest in structured investment alternatives with optional components and in receivables-based financing. As the year under review progressed, money market investment customers demonstrated a greater acceptance of the negative interest rate environment, with the result that DZ BANK was able to win back deposits from institutional investors.

In currency management, the continued weakness of the euro and a decline in market volatility in 2016 resulted in average revenues from corporate and institutional customers. Large and medium-sized companies used the opportunity presented by persistently low interest rates (including the continuation of significant negative interest rates in money markets) to enter into interest-rate hedges with long maturities of 10 to 30 years.

New bond issuance business in the year under review was shaped by the ECB's decision in March 2016 to expand its extensive bond-buying program. At the beginning of June 2016, the ECB began to buy corporate bonds under its corporate sector purchase program (CSPP). This led to a considerable increase in the volume of transactions in the corporate bond market and to an increased focus on supra/sovereign/agency (SSA) issuers for maturities of more than 10 years. DZ BANK was able to notch up initial successes in private placement business and in the desired interaction with benchmark portfolios thanks to the newly created Medium Term Note (MTN) Origination unit.

The liabilities recognized at fair value gave rise to a positive effect on earnings of around €60 million in the year under review. This was largely attributable to DZ BANK's own issues.

Also during the reporting period, the successful completion of the mediation proceedings in the legal dispute with Lehman Brothers International Europe resulted in income of approximately €50 million from the reversal of provisions to cover the cost of legal proceedings and attorneys.

In addition, net trading income in 2016 was affected by the net figure for realized and unrealized gains and losses relating to asset-backed securities (ABSs), which amounted to a gain of €19 million.

Administrative expenses at DZ BANK amounted to €1,514 million, an increase of €197 million or 15.0 percent on the comparable figure in 2015 (€1,317 million).

Taking account of the addition of €33 million to a provision for fire safety measures relating to DZ BANK's Cityhaus I building (to the extent used for banking operations), other administrative expenses rose by €141 million to €837 million (2015: €696 million), mainly in connection with business consulting costs incurred as part of projects. In 2016, other administrative expenses also included migration expenses in connection with the merger of €73 million and expenses of €41 million (2015: €36 million) in relation to the bank levy.

The rise in staff expenses of €56 million to €677 million (2015: €621 million) was mostly attributable to growth in the number of employees and salary increases.

Other net operating income/expense at DZ BANK amounted to net income of €21 million in 2016 (2015: net expense of €126 million).

The other net operating income included income of €38 million from the reversal of provisions, which was offset, in particular, by expenses of €17 million arising from assumption of the defined benefit obligations of WGZ BANK Unterstützungskasse and by the addition of €13 million to the provision for fire safety measures relating to DZ BANK's Cityhaus I building (to the extent not used for banking operations). Other net operating income also consisted of net income of €23 million (2015: net expense of €132 million) resulting from the measurement of the occupational pension plan.

The latter primarily comprised the interest cost of €22 million reported in 2016 (2015: €118 million) in connection with the measurement of pension obligations and the interest income generated from plan assets in 2016 of €17 million (2015: €19 million).

Allowances for losses on loans and advances stood at €313 million (2015: net reversal of €123 million).

In 2016, the specific loan loss allowances recognized for DZ BANK came to a net addition of €42 million (2015: net reversal of €48 million). The specific loan loss allowances recognized – particularly in corporate banking – were offset by reversals resulting from the continued success of efforts to aid the recovery of non-performing loans and receipts from loans and advances previously impaired. Overall, the change in specific loan loss allowances, which also benefited from the stable economic environment, reflects the stability of the credit portfolio and DZ BANK's sustainable risk policy. Under portfolio loan loss allowances, there was a net addition of €47 million (2015: net addition of €8 million).

Further detailed disclosures regarding the risk situation at DZ BANK can be found in this management report in chapter VI. (Combined opportunity and risk report).

In the year under review, DZ BANK's **other net income and expense** amounted to an expense of €245 million (2015: expense of €65 million).

Within this figure, gains on investments of €117 million (2015: losses of €553 million) included both gains from long-term equity investments of €85 million (2015: losses of €555 million) and gains on long-term securities totaling €32 million (2015: gains of €2 million).

The gains from long-term equity investments in 2016 included, in particular, gains of €98 million and €38 million respectively on the disposal of DZ BANK's and the former WGZ BANK's long-term equity investments in VISA Europe Ltd., London. Furthermore, the former WGZ BANK generated a gain of €37 million on the disposal of its long-term equity investment in Union Investment Real Estate GmbH, Hamburg. Gains from long-term equity investments also included write-downs of €30 million (2015: €40 million) and €61 million respectively on the carrying amounts of DZ BANK's direct investments in VR-LEASING AG and WL BANK.

In 2015, the losses from long-term equity investments had included, in particular, write-downs of €349 million and €232 million respectively on the carrying amounts of DZ PRIVATBANK S.A. and Bausparkasse Schwäbisch Hall. There had also been write-downs of €17 million on the carrying amount of DZ FINANCE Ireland Ltd., Dublin, (DZ FINANCE Ireland). The prior-year figure had also included a gain of €65 million from the disposal of the long-term equity investment in VISA Inc., San Francisco, and a gain of €14 million from the disposal of the 100,000 shares held in R+V Versicherung.

The net gain on long-term securities in the reporting period included proceeds of €19 million on the sale and maturity of securities in the banking book and a gain of €13 million from ABSs (2015: €18 million). In 2015, there had also been a loss of €23 million in connection with the sale of Italian bonds.

The expense in respect of the transfer of losses in 2016 amounted to €20 million (2015: €61 million). It was largely attributable to an expense of €18 million resulting from the transfer of losses from IMPETUS Bietergesellschaft mbH, Frankfurt am Main.

In the previous year, the expense in respect of the transfer of losses had mainly comprised an expense of €43 million resulting from the transfer of losses from VR-LEASING AG and an expense of €10 million resulting from the transfer of losses from GENO Broker GmbH.

In 2016, the extraordinary result amounted to an expense of €342 million (2015: expense of €16 million) and included an expense of €150 million arising from an income subsidy paid by DZ BANK to DVB Bank, restructuring expenses of €135 million, and expenses of €57 million for the transaction and preparation of the migration in connection with the merger.

In 2015, the extraordinary result had included, in particular, an expense of €9 million resulting from the restructuring of DZ BANK's business activities in Poland.

In 2016, the reserves pursuant to section 340g HGB remained unchanged (2015: reversal of €565 million).

Profit before taxes amounted to €269 million (2015: €827 million).

The **tax income** for the year under review of €54 million (2015: expense of €428 million) includes deferred tax income of €47 million (2015: expense of €328 million), income from group tax levies of €201 million (2015: €201 million), and a tax expense of €194 million (2015: €301 million).

Net income for the year came to €323 million (2015: €399 million).

As a result of the net income for the year of €323 million, DZ BANK will propose a dividend of €0.18 per share to the Annual General Meeting. This would equate to a total distribution of €322 million.

3.3. Number of branches

As at December 31, 2016, DZ BANK had 7 German branches in Berlin, Düsseldorf, Hanover, Koblenz, Munich, Münster, and Stuttgart as well as 4 international branches situated in London, New York, Hong Kong, and Singapore.

The Hanover and Munich branches oversee two sub-offices in Hamburg and Nuremberg.

4. Net assets

In view of the merger of WGZ BANK into DZ BANK with effect from January 1, 2016, the following carrying amounts as at December 31, 2016 are compared with the opening figures as at January 1, 2016 for reasons of comparability. These opening figures were calculated by adding together the figures for DZ BANK and WGZ BANK as at December 31, 2015, adjusted for the possible effect of acquisition accounting and consolidation of intergroup balances.

As at December 31, 2016, DZ BANK's **total assets** had increased by €8.6 billion to €253.3 billion (January 1, 2016: €244.7 billion), a rise of 3.5 percent.

DZ BANK's international branches accounted for €37.8 billion or around 14.9 percent of the total assets of DZ BANK as at December 31, 2016. New York (€19.6 billion) and London (€13.9 billion) together accounted for around 88.6 percent of the €37.8 billion. The remaining €4.3 billion was attributable to the branches in Singapore (€2.6 billion) and Hong Kong (€1.7 billion).

The **return on assets**, which was calculated by dividing the net income for the year by the total assets at December 31, 2016, was 0.1 percent.

As at December 31, 2016, the **volume of business** amounted to €284.0 billion (January 1, 2016: €274.1 billion). This figure comprises not only total equity and liabilities but also the contingent liabilities of €8,805 million (January 1, 2016: €8,973 million) and DZ BANK's other obligations of €21,917 million (January 1, 2016: €20,435 million).

FIG. 2 – TOTAL ASSETS

€ billion

The derivatives recognized at fair value of €951.4 billion (January 1, 2016: €994.6 billion) and **the derivatives not recognized at fair value** of €61.0 billion (January 1, 2016: €54.0 billion) came to a notional amount of €1,012.4 billion as at December 31, 2016 (January 1, 2016: €1,048.6 billion). Of this total amount, €26.1 billion was accounted for by positive fair values (January 1, 2016: €27.2 billion).

Loans and advances to banks had risen by €17.1 billion to €118.1 billion as at December 31, 2016, compared with €101.0 billion as at January 1, 2016. Loans and advances to affiliated banks had increased by €0.6 billion or 0.9 percent to €68.1 billion. Loans and advances to other banks had risen by €16.5 billion or 49.3 percent to €50.0 billion.

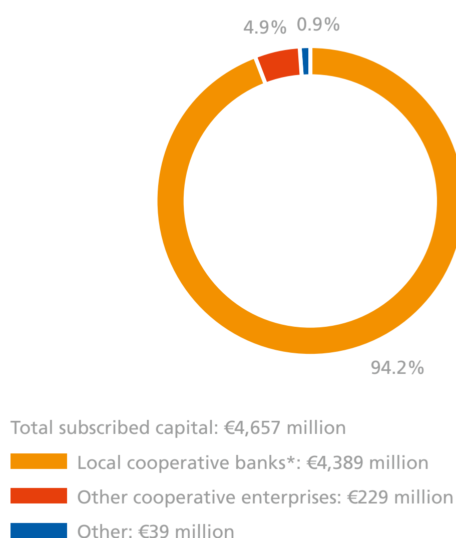
Loans and advances to customers had gone up by €2.0 billion to €33.7 billion as at December 31, 2016 (January 1, 2016: €31.7 billion). Within this amount, current account debit balances had increased by €1.6 billion, overnight money by €0.5 billion, development program loans by €0.4 billion, and promissory notes by €0.3 billion, while loan portfolios had decreased by €0.4 billion and fixed-term deposits by €0.4 billion.

As at December 31, 2016, the value of **bonds, shares, and other securities** had fallen by €2.7 billion to €45.9 billion (January 1, 2016: €48.6 billion). This change was attributable almost exclusively to holdings of bonds, the value of which amounted to €45.8 billion as at December 31, 2016 (January 1, 2016: €48.5 billion). The value of shares and other variable-yield securities was unchanged compared with the start of the year at €0.1 billion (January 1, 2016: €0.1 billion).

The **trading assets** line item was €38.2 billion as at December 31, 2016, a drop of €7.7 billion compared with January 1, 2016 (€45.9 billion). This was mainly the result of a decrease of €4.6 billion for bonds and of €2.1 billion for repurchase agreements. There was also a €0.3 billion reduction in derivatives.

Deposits from banks had grown slightly, by €0.1 billion, to €120.1 billion as at December 31, 2016 (January 1, 2016: €120.0 billion). Deposits from affiliated banks had advanced marginally, by €0.1 billion, to

FIG. 3 – SHAREHOLDERS AS AT DECEMBER 31, 2016



Total subscribed capital: €4,657 million

Local cooperative banks*: €4,389 million

Other cooperative enterprises: €229 million

Other: €39 million

* Directly and indirectly.

€49.2 billion. At €70.9 billion, the volume of deposits from other banks was virtually unchanged compared with January 1, 2016.

Deposits from customers as at December 31, 2016 had risen by €5.2 billion to €27.9 billion (January 1, 2016: €22.7 billion). This change was predominantly attributable to an increase in current account credit balances (up by €2.6 billion), fixed-term deposits (up by €2.3 billion), and registered bonds (up by €0.3 billion).

Debt certificates issued including bonds stood at €48.2 billion. This equates to a rise of €2.4 billion compared with the figure at January 1, 2016 of €45.8 billion. The €1.5 billion decrease in the portfolio of bonds (excluding domestic commercial paper) was more than offset by the €3.9 billion increase in holdings of commercial paper.

The **trading liabilities** line item was €32.0 billion, an advance of just €0.1 billion compared with January 1, 2016 (€31.9 billion). Within this amount, bearer bonds were up by €1.4 billion and investment certificates issued had risen by €1.1 billion, whereas repurchase agreements were down by €0.3 billion.

As at December 31, 2016, the **fund for general banking risks** in accordance with section 340g HGB was unchanged on January 1, 2016 at €4,515 million.

The **equity** of €10,256 million reported on the balance sheet as at December 31, 2016 was €113 million higher than the equivalent figure as at January 1, 2016 (€10,143 million).

The disclosures on the Company's holdings of treasury shares pursuant to section 160 (1) no. 2 of the German Stock Corporation Act (AktG) can be found in Note 22 of the notes to these annual financial statements.

DZ BANK's **capital situation** is described in this management report in chapter VI. (Combined opportunity and risk report), section 7. (Capital adequacy).

5. Financial position

Liquidity management for the entities in the Bank sector is carried out by Group Treasury at DZ BANK and 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 by head office treasury in Frankfurt and by treasuries in its international branches, although Frankfurt has primary responsibility. Up to the legal implementation of the merger on July 29, 2016, most of the liquidity management in the two banks, WGZ BANK and DZ BANK (pre-merger), was a central responsibility in each of the two banks. Following completion of the merger, two entities in the WGZ BANK Group, WL BANK and DZ BANK IRELAND plc, Dublin, (DZ BANK IRELAND), were integrated into the liquidity management carried out by the Group Treasury division.

In the context of liquidity management, DZ BANK 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.

DZ BANK 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 primary 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. DZ BANK therefore has a comfortable level of liquidity at its disposal. Funding on the interbank market is not strategically important to DZ BANK.

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

Money market funding also includes collateralized money market activities, which DZ BANK has centralized in Group Treasury and which form the basis for broadly diversified funding on money markets. To this end, Group Treasury has a portfolio of securities eligible for central bank borrowing (collateral pool). 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 1 year) of DZ BANK.

Structural liquidity is measured daily on the basis of total liquidity flows. In addition, the long-term ratio is used to support the management of structural liquidity. This key figure is also determined on a daily basis. It quantifies the ratio of sources of funds to application of funds with a residual maturity of more than one year on a cash flow basis.

DZ BANK's **long-term ratio** as at December 31, 2016 was 94 percent (December 31, 2015: 89 percent). This means that the items tying up liquidity with residual maturities of over one year were largely funded by liabilities that also had residual maturities of more than one year.

DZ BANK secures its long-term funding for structural liquidity by using structured and non-structured capital market products that are mainly marketed through the local cooperative banks' own-account and customer-account securities business and to institutional clients. DZ BANK also has the option of obtaining liquidity through covered issues known as DZ BANK BRIEFE. In this case, the funding is primarily obtained from institutional investors.

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

Group Treasury at DZ BANK carries out groupwide **liquidity planning** annually. This involves determining the funding requirements of the DZ BANK Group and DZ BANK 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 management report in chapter VI. (Combined opportunity and risk report), section 6. (Liquidity adequacy).

III. Events after the balance sheet date

There were no events of particular importance after the end of the financial year.

IV. Human resources report and sustainability

1. Human resources report

1.1. HR work in the year of the merger

HR activities in the year under review focused on the merger between DZ BANK and WGZ BANK. The key milestones for the HR teams in both banks were the social compensation plan and the reconciliation of interests required by German law. However, the HR planning to merge the employees from both banks into 29 departments was also significant. While the matters to be dealt with under the German Works Council Constitution Act (BetrVG) helped to ensure the merger took place without disharmony in the workplace, other measures were designed to make sure the merged institution was fully operational from Day 1. The broad-based communications and change campaign before, and above all, after the merger played a considerable part in achieving these two objectives. In the process to migrate the bank's IT systems, the HR division played a frontrunner role in relation to its own responsibilities (HR data, time management, payroll, etc.) but also contributed to the ongoing process of digitalization within the bank.

1.2. New HR marketing concept at DZ BANK

The communications campaign for the merger was used as the basis for a new HR marketing identity for the joint central institution. Featuring authentic profiles of the joint central institution's employees, the new, eye-catching marketing content visualizes the core message of 'Seize the initiative for your career'. The new HR marketing campaign of DZ BANK AG complements the external campaign promoting the DZ BANK Group's overall employer brand ('Erfolgsprinzip: WIR') that was established in 2016 (see section 1.4.).

1.3. 'Verbund First' career development program

In 2016, the second group of participants started the 'Verbund First' career development program, which focused this time on digitalization and innovation. The 16 participants, managers and employees from the cooperative banks, examined various issues relating to digitalization at various levels both within and outside the cooperative financial network. According to the participants, the networking opportunities and the chance to gain a new perspective on matters affecting the cooperative financial network are the main reasons for the program's success. The learning journey format was particularly helpful in enabling participants to pick up new ideas.

1.4. DZ BANK Group's employer branding campaign

The objective of the 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. A joint external careers website featuring vacancies across the group was launched in the second quarter of 2016. The website is based on the internal communications and information-sharing platform set up in 2014. Various public relations activities promoted the launch of the employer brand in the external job market.

1.5. Professional development

In the year under review, the focus in the joint central institution and its predecessors was on planning and running merger-related training courses to equip employees with the necessary skills to use new systems and processes. Around 100 such courses, attended by more than 3,000 people, were held. There will be further training courses in connection with the joint central institution's migration project during 2017.

The planning carried out before the merger ensured employees were able to book continuing professional development (CPD) courses organized by either of the predecessor institutions from the day of the merger on August 1. A new learning platform incorporating a variety of functions will be available in the joint central institution in 2017. This includes the consolidated CPD program, which will be digitalized along with existing processes. For example, it will be possible to make and cancel bookings on the online platform. Employees will then be able to check at any time what training they have booked and find out which courses are available and when. At DZ BANK (pre-merger), there was strong demand in 2016 for specialist training on topics such as banking regulation and for

short-format events in the Knowledge Forum series. There were also four special events dedicated to the latest regulatory issues. Another focus topic was digitalization and innovation. During a workshop entitled 'Team 4.0 – Simple.Digital.Work', for example, participants discovered what digital technologies the bank had already adopted and how these can be used. In another workshop, DZ BANK's trend scouting team provided an insight into banking in the future. On average, the Knowledge Forum events were attended by up to 100 employees. A new form of training, innovation workshops, was held on the subject of design thinking. The workshops were devised in close cooperation with the innovation and digitalization department. The aim of these training courses, which take an innovative approach, is to equip participants with the skills needed to develop new products and services and to improve internal processes and services.

The bank's CPD program also includes division-specific training courses. The training in the corporate customer divisions, for example, concentrated on 'value-adding advisory excellence' in 2016, forming part of the customer focus project. Almost 250 employees, some of whom were from the Credit division, took part in the various modules.

A separate training series comprising ten modules was devised for sales support in order to provide more assistance for corporate customer advisors and facilitate interaction between sales support teams.

Project management training, which is offered at three levels (basic, advanced, and expert), is a permanent part of the CPD offering. More than 160 project managers have now completed the training program, which was launched at the pre-merger DZ BANK in 2013. The training is offered in collaboration with Deggendorf Institute of Technology and the Haufe Academy, Neu-Isenburg. A certificate is issued upon completion. The Personal and Communication Skills training series, which are run in conjunction with the Frankfurt School (FS), Frankfurt am Main, end with an exam and a certificate is then issued by FS. Since 2015, FS has also included the banking training in its own CPD program. Moreover, statements from the bank's employees have featured in FS's CPD catalog for several years.

1.6. Training and development of young talent

In 2016, 62 trainees (29 women and 33 men) began their professional career by joining various training programs in the joint central institution after completing their studies at school or university. Training and developing the next generation is regarded as a shared responsibility within the bank. The HR division establishes the necessary structures and monitors the trainees and the departmental coordinators, but the training itself is carried out within the individual departments. At the end of 2016, the first joint conference since the merger, entitled '**W**ir **G**ehen **Z**usammen in **D**ie **Z**ukunft' (we're going forward together), was attended by more than 160 trainees and mentors, giving them the chance to develop their feeling of togetherness. The conference's theme was all about integrating and getting to know one another, and not only provided a source of inspiration but also generated concrete ideas that will be incorporated into the planning for 2017.

The joint central institution continues to encourage individual responsibility among its trainees in order to prepare them as fully as possible for taking on suitable roles in the bank. Besides equipping trainees with specialist knowledge, the development programs therefore focus on expanding their methodological, social, and personal skills. Three years ago, for example, a job-shadowing assignment in another entity within the DZ BANK Group was added as a standard component of the trainee program at the pre-merger DZ BANK. The program will continue in the joint central institution in 2017. The program for general management trainees at the former WGZ BANK had included a four-week placement at its Irish subsidiary. In the first half of 2016, 27 DZ BANK trainees undertook a job-shadowing assignment with a group entity and, in return, 15 trainees from other entities in the DZ BANK Group carried out such assignments at DZ BANK (pre-merger). Job-shadowing assignments were also arranged within individual entities of the DZ BANK Group.

1.7. 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 seventh year. More than 160 participants attended a total of 12 different events in 2016. All the feedback from the participants was very positive without exception. Participants included members of boards of managing directors, heads of divisions, and, in some cases if relevant to the topic under discussion, employees below head-of-division level.

1.8. Health management

In 2016, the joint central institution, and the two predecessor institutions, provided services aimed at promoting the health of employees. These included a range of sporting activities and anti-stress programs as well as lectures and workshops on topics such as nutrition and stress management.

1.9. Work-life balance

One of the core objectives of HR policy, as it had been in the two predecessor institutions, is to create a working environment that takes account of changing family and demographic structures. With this in mind, the former DZ BANK had adopted a policy for flexible and family-friendly organization of working hours in 2015. The policy sets out binding rules and expectations regarding flexible working hours, which are based on the principle of give and take. DZ BANK supports parents and carers by offering flexible working hours, teleworking, and parent-and-child offices. The bank has contracted external service providers that operate throughout Germany to arrange or provide childcare for employees and to arrange or provide support for family members requiring care. For example, regular daycare places are available in kindergartens or with au pairs or carers. The arrangement service is free of charge for bank employees. A daycare center for DZ BANK employees' children opened in mid-2016 in the new building that was constructed as part of the expansion of the Frankfurt site.

The Hertie Foundation recognizes companies with family-friendly and life-stage-oriented HR policies by awarding the *auditberufundfamilie®* certificate, which has to be renewed every three years. DZ BANK (pre-merger) has held the certificate since 2007. It also signed the Charter for the Compatibility of Work and Care in Hessen in 2014, which was created as part of the Hessen-based Compatibility of Work and Care initiative. This initiative is backed by, among others, berufundfamilie gGmbH and the Hessen State Ministry of Social Affairs.

1.10. Employer awards

DZ BANK (pre-merger) received the following awards in the first half of 2016: Top German Employer (Top Employers Institute, since 2008), Candidate Experience Award (received for the first time in 2015), Career-enhancing & Fair Trainee Program (Absolventa, since 2012), Trendence Student Survey/Germany's 100 Top Employers (ranked since 2008), Universum Student Survey/Germany's Most Attractive Employers for Students (ranked since 2008), Focus Best Employer (since 2013), and Fair Company Initiative (since 2004).

1.11. Declaration on corporate governance

Equal participation of women and men in managerial positions

The proportion of women at the pre-merger DZ BANK as at December 31, 2015 was as follows, providing the basis for the targets:

Supervisory Board	20 percent
Board of Managing Directors	0 percent
First-level management	0 percent
Second-level management	16.8 percent.

In June 2015, the Board of Managing Directors of DZ BANK (pre-merger) had examined in detail how to implement the German Act on the Equal Participation of Women and Men in Managerial Positions in the Private and Public Sectors (FührposGleichberG) at DZ BANK, setting the following targets: target for first-level management: 5 percent; target for second-level management: 19 percent. The targets also apply to the joint central institution and cover the period up to and including June 30, 2017. Irrespective of the statutory requirements, the joint central institution's aim is to further increase the proportion of women in managerial positions.

The Supervisory Board of the former DZ BANK set a target of 0 for the proportion of women on the Board of Managing Directors up to June 30, 2017. In accordance with the stipulations of the KWG that came into force

in 2014, the Supervisory Board also adopted a strategy aimed at increasing the proportion of members who are women, as they are currently under-represented. The target was set at 15–20 percent. There have been four female members of the Supervisory Board since the election of employee representatives on May 28, 2015. The upper end of the target range (20 percent) was thus reached ahead of the deadline. This has remained the same for the joint central institution.

FIG. 4 – EMPLOYEE DATA

Employees (average for the year, excluding trainees)	**2016**	2015
Total	5,673	4,312
Employees (as at December 31, including trainees)		
Total	5,792	4,489
Employees	5,612	4,342
Trainees	180	147
Proportion of trainees (%)	3.1	3.3
Germany	5,549	4,249
ROW	243	240
Male	3,367	2,608
Female	2,425	1,881
Total proportion of women (%)	41.9	41.9
Total number of managers	660	517
Proportion of female managers (%)	18.2	19.2
Full-time	4,717	3,634
Part-time	1,075	855
Proportion of part-time (%)	18.6	19.0
Period of service (years)	14.7	14.1
Staff turnover (%)	4.0	4.8
Resignations (%)	2.2	1.6
Professional development days per employee	2.7	3.4

2. Sustainability

2.1. Cooperatives: responsibility as a corporate objective

The philosophy of meeting commercial and social challenges together is the foundation on which the cooperatives are based and is also a fundamental principle of sustainability.

One of UNESCO's recent decisions is testimony to the effectiveness of the cooperative principle around the globe: At the end of 2016, the idea and practice of organizing shared interests in cooperatives was listed as part of the Intangible Cultural Heritage of Humanity.

Around 150 years after the first cooperatives were established, they are now more relevant than ever before. In the period of the financial crisis, cooperatives clearly demonstrated the extent of their stability and enjoyed huge popularity. In Germany alone, 22.4 million people are currently organized into cooperatives. The cooperative financial network has 18.3 million members.

Cooperatives are guided by fundamental values such as mutuality, fairness, partnership, and trust. The strong regional ties of the entities and their businesses, particularly in the cooperative banking sector, are hallmarks of the shared cooperative guiding principle and represent one of our defining strengths.

For some years, DZ BANK has been one of the leading financial institutions in terms of sustainability. This is regularly confirmed by the sustainability rating received from the sustainability ratings agency oekom research AG, which has awarded its prime status for particularly sustainable companies to the DZ BANK Group since 2011.

Following the merger of DZ BANK and WGZ BANK and the consolidation of the two banks' prime ratings by oekom research, the DZ BANK Group continues to hold prime status (i.e. a rating of C+).

2.2. Sustainability-related products and services

As one of the country's leading financial services providers, DZ BANK is playing a key role in funding the switch to renewable energy sources in Germany. 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.

The renewable energies sector has been a strategic area of activity for DZ BANK since 2009. DZ BANK's lending in this area stood at around €4.8 billion as at December 31, 2016. 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.

DZ BANK has also been active in the green bonds market segment since 2013 and is one of the ten leading syndicate banks. So far, the focus in this segment has mainly been on investment projects in the areas of renewable energies and climate change. DZ BANK's sustainability research offers cooperative banks and institutional investors a comprehensive audit and consultancy service for investments in equities and for the fixed income asset class.

In addition to offering sustainability-related products and services, DZ BANK has also enhanced key processes over the past few years so that they satisfy social and environmental criteria. In January 2013, for example, DZ BANK signed up to the Equator Principles, which provide a global standard for project finance. Since then, all project finance involving a total investment of more than US$ 10 million has been subject to an additional review in compliance with the requirements of the Equator Principles. DZ BANK's lending guidelines also include carrying out its own sustainability check, which is based on the principles of the UN Global Compact. Sectoral guidelines and the lending risk strategy also stipulate which activities cannot be funded due to their environmental or social risks. Since 2014, DZ BANK has also published fundamental rejection criteria used in lending decisions.

In 2016, DZ BANK developed an online training course on sustainable lending that, from 2017, will be mandatory for all employees who handle funding inquiries. The course will make participants more aware of the relevance of this subject and, at the same time, provide specific information on what to consider when examining funding inquiries.

2.3. Group Corporate Responsibility Committee

Since 2010, the entities in the DZ BANK Group have been pooling their activities to a much greater extent, focused on the common objectives of exploiting market opportunities, avoiding risk, and at the same time enhancing corporate citizenship.

In 2014, the entities set up a standing committee, the Group Corporate Responsibility Committee. The committee is made up of the sustainability coordinators and communications managers from the various entities and meets regularly. The Group Corporate Responsibility Committee reports to the Group Coordination Committee. WL BANK, formerly a subsidiary of WGZ BANK, has also been a member of the Group Corporate Responsibility Committee since the autumn of 2016.

Outcomes from these activities have included, for example, the introduction of groupwide supplier standards, a common database structure, and the joint signing of the UN Global Compact. The group entities have also worked together for a number of years now on matters surrounding environmental protection and prevention of climate change.

At the end of 2016, the Group Corporate Responsibility Committee began the development of a groupwide climate strategy based on the German government's national Climate Action Plan and the principles set out in the Sustainable Development Goals adopted by the United Nations (UN).

2.4. Transparency in sustainability activities

The reporting year saw the publication of DZ BANK's eighth sustainability report prepared in accordance with the Global Reporting Initiative (GRI) standards: *www.sustainability.dzbank.com*

Important information gleaned from stakeholder survey

To manage sustainability at DZ BANK and in the group entities effectively, we need the deepest possible understanding of our stakeholders' social, environmental, and economic interests, experiences, and

expectations. In 2015, we conducted a groupwide online survey of our external and internal stakeholders for the first time, providing us with important information about our sustainability efforts.

In choosing which interest groups to survey, we took account of their diversity and their relevance to the entities in the DZ BANK Group. We were guided by the following key points: Among our most important stakeholders are the cooperative banks (because they are both our customers and our owners) along with the corporate customers, retail customers, and employees of the entities in the DZ BANK Group. Suppliers and service providers as well as trade associations and investors are highly relevant to the group entities from a commercial perspective. We also listened to critical opinions from non-governmental organizations (NGOs), rating agencies, academics, and politicians.

The survey covered five areas of action, each broken down into various topics, and was based on analyses of the prevailing social sustainability trends. With a response rate of 46 percent, it provided valuable input for core areas of the work and reporting systems in group entities.

Our stakeholders' opinions again underlined the importance of strategically integrating sustainability into the core business of the entities in the DZ BANK Group in all areas of operations. The respondents assigned the greatest relevance to sustainable corporate management and to sustainable products and services. Within these areas, 'cooperative principles and values' and 'corporate strategy and success' attracted very high scores.

This means that the DZ BANK Group needs to continue to integrate the principle of sustainability that lies at the core of the cooperative model into its systems and to place it at the forefront of its business activities. It must also ensure that this ties in with the cooperative values so that it can live up to stakeholders' expectations regarding the sustainability performance of the group entities. In addition, the DZ BANK Group will use the results of the survey as guidance when selecting the topics for future sustainability reporting.

V. Outlook

1. Economic conditions

1.1. Global economic trends

Sentiment in the industrial sector around the globe has improved since the beginning of 2016, despite the weakness in international trade. In the world's two largest economies – the United States and China – the survey readings in the purchasing managers' indices are above the growth threshold. A positive sentiment is also prevalent in the eurozone and in Germany.

This growth in confidence is not entirely reflected in production figures however. Nevertheless, economic growth in the industrialized countries remained steady over the course of 2016, despite geopolitical crises. By contrast, structural problems as well as macroeconomic and financial imbalances continued to weaken economic growth in some of the emerging markets, a trend exacerbated in many of these countries by the relatively low price of oil. The next twelve months may provide commodity-exporting countries with the opportunity to get out of the economic doldrums.

Against this backdrop, there is only likely to be a slight rise in global economic growth in 2017 to approximately 3.2 percent compared with the rate of around 2.9 percent seen in 2016.

Driven by expectations of rising commodity prices, the rate of inflation will probably rise significantly from approximately 3.3 percent to 3.7 percent.

1.2. Trends in the USA

In a move that had been long anticipated by the markets, the US Federal Reserve (Fed) raised its federal funds rate in December 2016 by 0.25 percentage points to a range of 0.5 percent to 0.75 percent and hinted at further rate hikes to follow.

It was the Fed's view that the US economy was sufficiently resilient to bear the higher interest rate. Economic uptrend indicators included the generally prevailing optimism, the robust level of consumer spending and, not least, the improvement in industry's order books.

This universally positive trend in sentiment indicators may be fueled by a sense of anticipation following the recent US presidential election. It is difficult to assess the economic impact from a potential shift in US policy that could involve a more protectionist approach in some circumstances.

In 2017, the rise in employment is likely to be sustained, with the rate of unemployment falling to 4.7 percent. Forecasts estimate that economic growth will come in at around 2.2 percent in 2017, driven above all by rising capital spending. US inflation is projected to rise sharply to around 2.3 percent in 2017, the main factors being increases in energy prices and housing costs.

1.3. Trends in the eurozone

As expected, the ECB decided to leave its key interest rates unchanged when it met for its last meeting of 2016. It also decided to extend its bond-buying program, which had initially been scheduled to come to an end in March 2017, until the end of the year, although the monthly purchasing volume would be reduced. The aim of this action is to give banks an incentive to lend and thereby inject some stimulus into the economy.

The slow economic recovery within the European Monetary Union is currently being maintained. Household consumption has been identified as the main driver in this recovery. The gradual improvement in European labor markets is giving consumers greater income security and encouraging spending. Positive sentiment in the economy and rising capital investment are helping to generate a sound economic outlook at present.

Unemployment is predicted to fall slightly to around 9.9 percent in 2017. The economic recovery is likely to be sustained, but with a slightly weaker pace of growth. GDP is projected to grow at a rate of 1.5 percent. Expansion is subdued primarily because of the growth rates in two of Europe's major economies, France and Italy, where significant political influences are being brought to bear. Furthermore, it remains to be seen what effect certain developments will have on the

eurozone economy, notably the UK's exit negotiations with the EU, the continued high levels of indebtedness in some European countries, and a potential shift in the direction of US economic policy. The inflation rate is likely to rise to 1.6 percent in 2017 in view of rising energy prices.

1.4. Trends in Germany

For some years, the German economy has remained impressively stable despite tough international conditions. However, the robust German economy could face significant challenges in 2017 caused by a range of risks primarily resulting from political trends, both in Europe and around the world.

The risks in the international environment, such as the weakness in global trade and the slowdown in the pace of growth in China, have not – or at least, have not yet – dented companies' significant confidence about future growth.

Consumer spending continues to be the key driver in the German economy. It is being bolstered by growth in nominally disposable incomes, in turn reflecting the high level of employment. In 2017, personal consumption is projected to rise by 1.3 percent.

Alongside consumer spending, the ECB's expansionary monetary policy is providing further stimulus, and is boosting house-building in particular. Some of the momentum could be lost during the course of 2017, however, as the accumulated orders on hand are gradually processed.

As in 2016, the hesitant global recovery means that foreign trade is unlikely to provide anything more than a mild tonic for the overall economy in the coming year.

The rise in employment is expected to continue in 2017, but at a lower rate. The downtrend in unemployment will probably come to an end during the year as accepted asylum applicants are integrated into the job market; the rate of unemployment could rise slightly from 6.1 to 6.2 percent.

The outlook for 2017 points to a marginally weaker year-on-year gain in economic output of around 1.2 percent. It should be noted in this regard, however, that some of the year-on-year decline in growth will be attributable to a lower number of working days in 2017.

The forecast average inflation rate in Germany for 2017 is 1.6 percent. However, this uptrend is less to do with current pricing pressures (even though there were some upward movements in oil prices in the last few weeks of 2016) and more the result of the low baseline, because the price of oil fell below the US$ 30 mark for a while in January 2016 and the inflation rate therefore temporarily slipped below zero. Once this low base effect has been factored out of the equation, there is unlikely to be any further rise in the inflation rate.

1.5. Trends in the financial sector

Since the financial crisis, the financial sector has faced considerable pressure in terms of both adjustment and costs caused by the need to comply with regulatory reforms, involving greater capital requirements and changes to regulatory systems.

In 2016, the capital conservation buffer and the countercyclical capital buffer specified by CRD IV came into force, increasing the mandatory minimum ratio for common equity Tier 1 capital. From 2017, other systemically important institutions (O-SIIs) – which could have a negative systemic impact because of their economic importance and cross-border activities – must maintain an additional capital buffer.

European banking supervisors also reserve the right to impose requirements for capital add-ons as part of the supervisory review and evaluation process (SREP).

As a result of 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.

Revised versions of the Capital Requirements Directive and Capital Requirements Regulation (CRD V and CRR II) are expected to be issued in 2017 as part of the timetable for regulatory improvements. This legislation includes the final implementation of the requirements decided by the Basel Committee on Banking Supervision (BCBS) relating to the leverage ratio, net stable funding ratio, and total loss absorbing capacity.

Many business models within the financial industry are increasingly being put to the test because of the need to enhance efficiency, for example as a result of the digitalization of business and IT processes. The corresponding capital investment is initially likely to push up costs in the industry.

Another particular challenge faced by the financial sector in 2017 will probably continue to be the persistently low interest rates, which will be accompanied by a relatively flat yield curve. Anticipated consequences are an adverse impact on the financial performance of banks and insurance companies, impairing their ability to accumulate capital.

Regardless of these expected developments, the German banking supervisor believes that the greatest risk to financial stability in 2017 could arise if market players are tempted to take on too great a risk in pursuit of higher returns because they judge the low interest rates and high asset prices to be a long-term phenomenon. In view of these dangers, the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) [Federal Financial Supervisory Authority] introduced a new measure in December 2016 requiring those German banks that are not subject to supervision by the European banking regulator to maintain a capital buffer for interest-rate risk in the banking book.

From today's perspective, it is not possible to assess the potential implications of uncertain political developments for capital markets and ultimately for the financial performance and financial position of entities in the financial sector. Risk factors in this regard include, for example, the aforementioned negotiations for the UK's exit from the EU, the financial performance of some Italian banks, and further political developments in countries such as France, the Netherlands, and Greece.

2. Changes in financial position and financial performance

2.1. Financial performance

Despite the prospect of growth in its operating business, DZ BANK's earnings are under pressure, primarily because of the persistently low interest rates. In 2017, earnings will be adversely affected by less potential for the reversal of impairment losses on the assets side as well as the still low level of interest rates, higher pension expenses, and increased capital spending on digitalization.

The smoldering sovereign debt crisis and financial policies introduced to resolve the problems could lead to volatility on capital markets again in 2017. It is difficult to assess the economic impact of a potential shift in US policy and of Brexit.

Against this backdrop, **profit before taxes** is expected to be substantially lower in 2017 than in 2016.

Net interest income (excluding income from long-term equity investments) in 2017 is predicted to be slightly below the 2016 level. The main reasons for this are the expected fall in interest income from money market business and a lower level of group funding. Earnings are expected to vindicate the growth strategy in the Corporate Banking business line. Adjustments to the pricing structure for development loans are likely to have a countervailing effect.

Income from long-term equity investments will probably go down significantly in 2017. This is mainly because the 2016 figure included the 2nd tranche of the special EKS dividend. Given that interest rates are expected to remain low and competition will remain fierce, earnings will come under pressure – especially in the subsidiaries with interest-earning business models. This will adversely affect the predicted income from long-term equity investments.

Based on a conservative estimate, lower **net fee and commission income** is forecast for 2017. This is because income in the Transaction Banking business line is expected to remain unchanged whereas fee and commission expenses are predicted to rise.

Net trading income is likely to fall sharply in 2017. The main reason for this assumption is that net trading income in 2016 was influenced by positive one-off items, such as in connection with the measurement of liabilities recognized at fair value, and by the positive outcome of mediation proceedings with Lehman Brothers International Europe combined with the

reversal through profit or loss of the provisions recognized in respect of this dispute. Moreover, a reduction in the reversal of impairment losses, particularly in the treasury business, is predicted for 2017.

An encouraging level of customer business in the Capital Markets business line is anticipated in 2017. This will require constant and, above all, stable conditions in the capital markets as well as successful positioning of the joint central institution in the market in order to realize the potential arising from the merger.

The improvement in capital markets business is to be achieved by continuing to pursue the strategic objectives set for this business line, which were confirmed when the two central institutions merged. These objectives include, in particular, consolidating the local cooperative banks' leading position in the own-account investing market and enhancing the long-term profitability of business relationships with institutional customers despite a much more difficult market environment and increased regulatory challenges.

Moreover, the capital markets business for retail customers is predicted to generate growth in income from brokerage and structured products resulting from the market's greater awareness of DZ BANK as an expert in providing securities solutions and the further expansion of support services aimed at improving the skills of advisors in the local cooperative banks. Income synergies arising from the merger of the two central institutions are expected to be leveraged in 2017 through joint marketing activities.

Net trading income could be adversely affected by, in particular, destabilization of the capital markets.

The figure reported under **other net operating income/expense**, which is expected to be negative, will deteriorate substantially in 2017 owing to higher expenses for pensions resulting mainly from the decrease in the discount rate.

A slight fall in **administrative expenses** is forecast for 2017. The figure for 2016 included infrastructure investments required by law. In 2017, the first cost savings from the merger will have a positive impact on administrative expenses, although the latter will still be influenced by migration costs in connection with the merger. Strategy-related investment in innovation management and digitalization has also been factored in for 2017.

At present, the **cost/income ratio** is anticipated to go up in 2017. Active management of costs in order to leverage potential synergies will therefore continue to be a strategic objective. As operations are expanded and made more profitable, there should be a lasting improvement to the cost/income ratio in the coming years.

Based on a conservative approach, expenses for **allowances for losses on loans and advances** will probably rise in 2017. The forecast for specific loan loss allowances is in line with the predicted change in the expected loss. In 2016, specific loan loss allowances were also affected by reversals, but reversals have not been included in the planning for 2017.

A possible downturn in the economic outlook combined with a flaring up of the sovereign debt crisis and protectionist leanings could have an adverse effect on allowances for losses on loans and advances.

Net income/expense from other business is predicted to improve significantly in 2017. The negative impact

on the 2016 figure from write-downs of carrying amounts and from an income subsidy is not expected to be repeated in 2017.

2.2. Liquidity

Based on 2016, DZ BANK is assuming that it can continue to maintain a sufficient level of liquidity in 2017 in terms of both economic and regulatory liquidity adequacy requirements.

The management of liquidity is based on ensuring the availability of both a sufficient level of liquid securities and stable local cooperative bank deposits. In addition, money market business with institutional investors, central banks, other banks, and corporate customers also continues to make a long-term contribution to the diversified funding of DZ BANK.

The structural funding of DZ BANK is expected to continue to be underpinned by stable sales of a wide variety of funding products as a result of the broad, well-established customer base.

DZ BANK's capital adequacy is assured for 2016 from both economic and regulatory perspectives; that is to say, it has at its disposal the capital necessary to cover the risks associated with the finance business. This is also expected to be the case for 2017.

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 37v and 37y 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 IAS 1.134–136 (capital), IFRS 7.31–42 (nature and extent of risks arising from financial instruments), and 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.

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.

Because of the integration of the former WGZ BANK Group into the DZ BANK Group, many of the quantitative disclosures in this opportunity and risk report as at December 31, 2016 are not directly comparable with the prior-year figures as at December 31, 2015, which are based on the corresponding disclosures in the 2015 opportunity and risk report. Verbal information on material discrepancies is provided in the explanations of the figures.

The opportunity and risk report of the DZ BANK Group includes disclosures relating to DZ BANK. A separate opportunity and risk report is not prepared for DZ BANK. Unless presented elsewhere, 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

This section forms the **risk statement** by the Board of Managing Directors specified in article 435 (1f) CRR.

In accordance with article 435 (1e) CRR, 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. The ECB has identified some elements of the risk management system that require further development. DZ BANK has introduced the necessary measures for the further development of the risk management system and has put mechanisms in place to ensure that these measures are implemented systematically and without delay.

2.2. Impact of the merger

As part of the merger between DZ BANK (pre-merger) and the former WGZ BANK, many activities were initiated in order to harmonize and standardize the processes, methods, IT systems, and other aspects of risk management. This included amending many of the existing **risk strategies** of the two former central institution groups, the **risk strategy framework document**, and the **risk appetite statement** and **risk manual** of the DZ BANK Group (pre-merger) to meet the requirements of the joint central institution. The amended versions were approved by the Board of Managing Directors with effect from August 2016.

Building on these, **other documents and rules relating to risk management** were revised during a transition phase up to the end of 2016. In addition, the **strategic and operational planning** for 2017 was carried out taking account of the merger. These measures enabled the standardization of key elements of the two former central institution groups' risk management systems to be completed by December 31, 2016. A **report** on the economic liquidity and capital adequacy of the DZ BANK Group (post-merger) was submitted to the Board of Managing Directors for the first time in the third quarter of 2016.

Begun in 2016, the **incremental migration of the business data** from the IT systems of the former WGZ BANK to the IT systems of DZ BANK will continue in 2017. Some of the key IT systems will be operated in parallel until the migration has been completed. The aggregation of the risk exposures in connection with the merger will take place in 2017 as scheduled.

2.3. Opportunity and risk management system

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 future losses or a future liquidity shortfall. 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.

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.

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 risk strategies that are derived from the business strategies and approved by the Board of Managing Directors.

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 is based on a qualitative approach and is tightly integrated into the strategic planning process.

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). **Risk capital management** is designed

to ensure the availability of capital resources that are commensurate with the risks assumed (capital adequacy).

Efficient management and control tools are used in all areas of risk. These tools are subject to continual further development and refinement. The development of these tools is derived from business management requirements and, in terms of risk management, is based on regulatory requirements. The methods used for the measurement of risk are integrated into the risk management system. Risk model calculations are used for the management of the DZ BANK Group and the entities included within the group.

Given the methods implemented and the organizational arrangements and IT systems put in place, DZ BANK and its subsidiaries are, to the greatest possible extent, in a position to identify material opportunities and risks at an early stage and to initiate appropriate control measures, both at the group level and at the level of the individual management units. This applies in particular to the early detection 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 generally ensure that the management is in a position to initiate targeted corrective action if required.

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. As a result of the merger, WL BANK has been added to the group entities that are material to risk management in the DZ BANK Group. Each entity described as a management unit forms a separate operating segment, and they are assigned to the sectors as follows:

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

Insurance sector:
- R+V

DG HYP and **WL BANK** apply the **waiver pursuant** regulation pursuant to section 2a (1), (2), and (5) KWG in conjunction with article 6 (1) and (5) and article 7 CRR. This means that DG HYP and WL BANK as individual institutions are no longer required to apply the provisions of Parts 2–5 and Parts 7 and 8 CRR and are instead covered at DZ BANK Group level.

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.

2.4. Risk factors, risks, and opportunities

2.4.1. 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.

The **regulatory framework** for the banking industry is characterized by a steady progression of ever tighter regulatory capital and liquidity standards and increasingly stringent process and reporting requirements. These developments particularly have an impact on business risk.

The **macroeconomic risk factors** that are significant to the DZ BANK Group are the performance of the economy, the European sovereign debt crisis, and the difficult market environment for the shipping finance business.

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 and counterparty default risk in the Insurance sector. The protracted period of low interest rates will reduce profits.

Moreover, the DZ BANK Group is exposed to **business-specific risk factors** 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 as part of overall risk management.

2.4.2. 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 figures 5 and 6.

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 more material entities in the group (indicated in figure 5 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 figure 5 by a dot on a light gray background).

The subcategories shown under credit risk and market risk in figure 5 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 2016 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) 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, it 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 Companies (InvMaRisk).

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) and the pronouncements of the Basel Committee on Banking Supervision (BCBS) and the FSB on risk management issues.

In accordance with the requirements of the banking regulator, DZ BANK prepared a recovery plan for the first time in 2013 and has to update it annually. The **recovery plan** is based on the Minimum Requirements for the Design of Recovery Plans (MaSan) of April 2014. Since 2015, the plan has also taken into account further regulations and, in particular, the new requirements imposed by the EBA and the German Act on the Recovery and Resolution of Credit Institutions and Financial Groups (SAG). By arrangement with the ECB, DZ BANK drew up a transition document in 2016 in light of the merger, which it then submitted to the ECB. A fully updated recovery plan must be prepared in 2017.

In accordance with article 7 (2) of Regulation (EU) No. 806/2014, the Single Resolution Board (SRB) is the European authority responsible 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 agencies (in Germany, this is the Bundesanstalt für Finanzmarktstabilisierung (FMSA) [Federal Agency for Financial Market Stabilization]). The **resolution plan** is aimed at ensuring the resolvability of the banking group. In accordance with section 42 (1) SAG, the resolution agency can demand that the institution provide comprehensive assistance on drawing up and updating the resolution plan. For this reason, DZ BANK again contributed to the ongoing preparation of the resolution plan for the DZ BANK Group in 2016 by supplying the FMSA with written materials and analyses.

3.2. 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 previous risk strategies of DZ BANK (pre-merger) have been adapted to the requirements of the merger. 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 tightly integrated with the strategic planning process and is carried out by the Group Risk Controlling, Credit, Credit Special, and Group Strategy and Controlling divisions in close consultation with other relevant divisions at DZ BANK and the subsidiaries.

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

3.3. Risk appetite

The **risk appetite statement** formulates **principles** on risk tolerance in the DZ BANK Group. The principles are overarching pronouncements that are in line with the business model and are incorporated consistently into the business and risk strategies and in other, more detailed documentation. These qualitative principles are supplemented by quantitative **key figures**, for which minimum targets are set. These key figures constitute the DZ BANK Group's risk-oriented key performance indicators.

Disclosures on the business model and the 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).

FIG. 5 – RISKS AND OPERATING SEGMENTS IN THE BANK SECTOR[1]

Risks

	Risk type	Definition	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)	– Funding structure for lending business – Uncertainty surrounding tied-up liquidity – Changes in the volume of deposits and loans – Funding potential in money markets and capital markets – Fluctuations in fair value, marketability of securities, and the eligibility of such securities for use in collateralized funding arrangements – Exercise of liquidity options – An obligation on the DZ BANK Group to pledge its own collateral
	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)	– Concentration of loans with a longer term to maturity and a non-investment-grade credit rating – Deterioration in the credit quality of public-sector bonds – Increased requirement for allowances for loans on losses and advances
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
Financial-sector risks	**Market risk** – Interest-rate risk – Spread risk – Equity risk – Fund price risk – Currency risk – Commodity 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 – Merger of DZ BANK and WGZ BANK – Fiercer competition based on pricing and terms – Insufficiently competitive electronic trading platforms – Digitalization and demographic change
Business-performance risk	**Reputational risk**[3]	Risk of losses from events that damage confidence, mainly among customers (including the local cooperative banks), shareholders, potential employees in 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	– Decrease in new and existing business – Funding difficulties
Business-performance risk	**Operational risk**	Risk of losses from human behavior, technological failure, weaknesses in process or project management, or external events	– Business interruptions – Insufficient availability of employees – Malfunctions or breakdowns in data processing systems – Disruptions to outsourced processes and services – Inaccurate external financial reporting – Impact of market manipulation and accounting or tax fraud – Failure to recognize 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 by the technical risk of a home savings and loan company, is not included here.

Risk management KPIs disclosed		DZ BANK	BSH	DG HYP	DVB	DZ PRIVATBANK	TeamBank	Union Asset Management Holding	VR LEASING	WL BANK
		Operating segments								
– Liquid securities – Additional contractual obligations – Unsecured short-term and medium-term funding – Minimum liquidity surplus – LCR	Section 6.2.6. Section 6.2.6. Section 6.2.6. Section 6.2.7. Section 6.3.3.	●	●	●	●	●	●		●	●
– Lending volume – Allowances for losses on loans and advances – Risk capital requirement	Sections 8.5., 8.6., and 8.7. Section 8.8. Section 8.9.	●	●	●	●	●	●		●	●
– Investment volume – Risk capital requirement	Section 9.4.	●	●	●	●	●	●	●	●	●
– Risk capital requirement – Value-at-risk	Section 10.6.1. Section 10.6.2.	●	●	●	●	●	●	●	●	●
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.	●	●	●	●	●	●	●	●	●

Disclosures about the management units in the opportunity and risk report:

● Quantitative and qualitative disclosures ● Quantitative disclosures Not relevant Not relevant

FIG. 6 – RISKS IN THE INSURANCE OPERATING SEGMENT AND SECTOR

	Risk type	Definition	Risk factors	Risk management KPIs disclosed	
	RISK COVERED BY CAPITAL PURSUANT TO SOLVENCY II				
Core financial sector risks	**Actuarial risk** – Life actuarial risk – 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	– 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 – The level of claims resulting from policyholders' and service providers' behavior causes a larger rise in claims expenses than the one in the calculation assumptions – The actual impact of losses, particularly from catastrophe risk, exceeds the forecast impact	– Claims rate trend in non-life insurance – Overall solvency requirement	Section 16.6. Section 16.7.
	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	– The guaranteed minimum interest rates agreed for certain products when the contract is signed cannot be obtained on capital markets over the long term – Widening of credit spreads on government bonds or other bonds leads 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 results in partial or complete default on receivables or write-downs as a result of rating downgrades	– Lending volume – Overall solvency requirement	Sections 17.4. and 17.5. Section 17.6.
	Counterparty default risk	Risk of 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	Unexpected default or deterioration in the credit standing of counterparties of derivatives, reinsurance counterparties, and receivables from policyholders and insurance brokers	– Lending volume – Overall solvency requirement	Sections 17.4. and 17.5. Section 18.3.
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)	– Business interruptions – Insufficient availability of employees – Malfunctions or breakdowns in data processing systems	Overall solvency requirement	Section 19.4.
	RISK COVERED BY CAPITAL PURSUANT TO SOLVENCY I				
	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 20.

3.4. Opportunity and risk-oriented corporate governance

3.4.1. 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 pillars that are interlinked and well established in the monitoring and control environment. The DZ BANK Group and DZ BANK thereby have a governance structure complying with MaRisk requirements that sets out the operational framework for risk management. Figure 7 shows the governance structure for risk management.

The **three pillars 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 'pillars', provides the basis for effective groupwide risk management. The tasks of the individual pillars are as follows:

- **Pillar 1:** Day-to-day assumption and management of risk

- **Pillar 2:** Establishment and enhancement of a framework for risk management; monitoring of compliance with the framework by pillar 1 and reporting on this to the Supervisory Board and Board of Managing Directors

- **Pillar 3:** Process-independent examination and assessment of risk management and control processes in pillars 1 and 2; 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.3.1.3. (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.

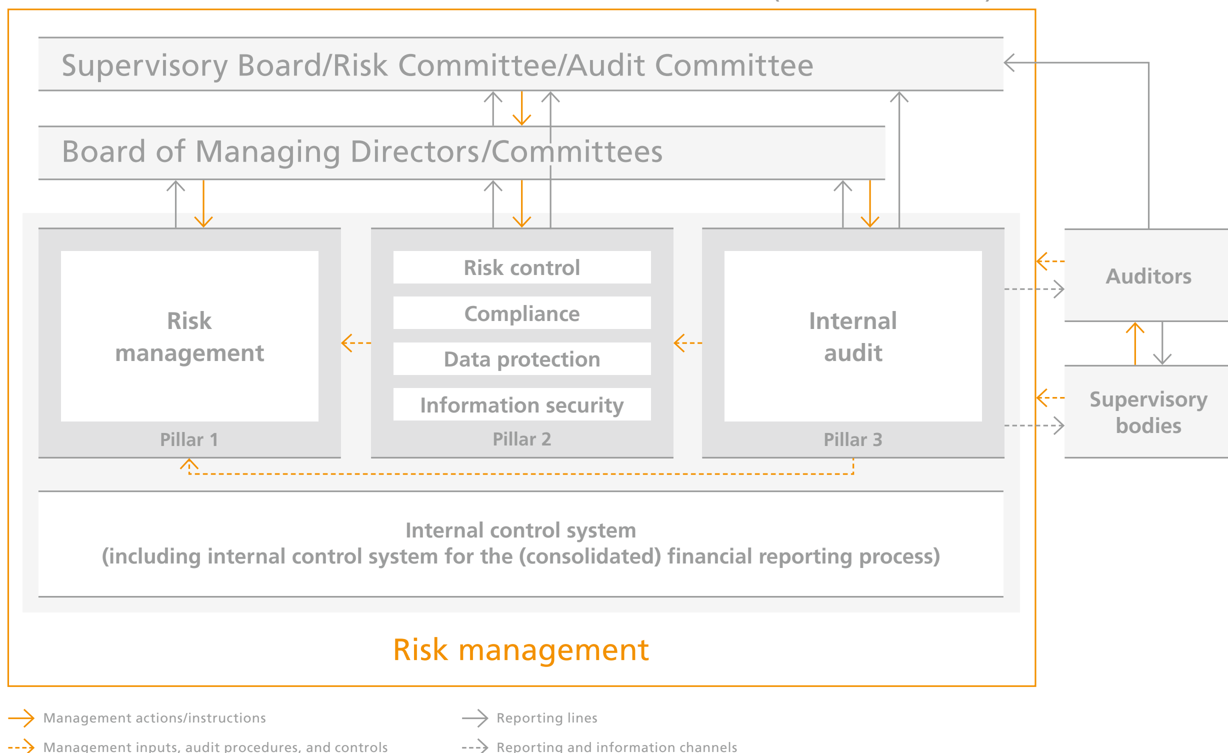
3.4.2. Risk management

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 both in terms of organization and function from downstream divisions.

FIG. 7 – GOVERNANCE STRUCTURE OF RISK MANAGEMENT IN THE DZ BANK GROUP (SCHEMATIC DIAGRAM)



3.4.3. 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.

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.

3.4.4. 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 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. Another task of the compliance function is to keep senior management and the departments informed of changes to the legal situation and to advise them on implementing new provisions and requirements.

In accordance with the requirements of the Supervisory Review and Evaluation Process for Basel Pillar 2 (SREP), it is necessary to create 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.

In consultation with the other management units, DZ BANK has drawn up such a framework for the DZ BANK Group with the aim of creating a groupwide compliance management system. The DZ BANK Group's compliance framework comprises the compliance policy, which defines the requirements regarding the establishment and organization of the compliance functions and their duties. It is supplemented by compliance standards, which specify how to implement these requirements on an operational level.

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

The compliance policy was approved by the Board of Managing Directors of DZ BANK and came into effect in the first quarter of 2016.

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. The data protection officer reports to the Board of Managing Directors on matters concerning the data protection organization.

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.

3.4.5. 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 following information meets the disclosure requirements specified in article 435 (2d) and (2e) CRR (Risk Committee and the flow of risk-related information to the 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.

As part of the quarterly written information about the risk situation in the DZ BANK Group, the Board of Managing Directors provides the members of the Risk Committee and the other members of the Supervisory Board with a quarterly overall risk report. The Risk Committee also receives the credit risk report, the report on the economic stress tests, and the report on current indicator levels in accordance with MaSan on a quarterly basis. The chairman of the Risk Committee informs the full Supervisory Board about these matters no later than at its next meeting. The minutes of Risk Committee meetings are sent to all members of the Supervisory Board on a regular basis.

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 Company's risk management processes for the Bank sector, including its internal control functions, are fit for purpose. 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.

3.4.6. General internal control system

DZ BANK uses the groupwide internal control system to implement the relevant regulatory requirements specified in MaRisk. The internal control systems of the DZ BANK Group and DZ BANK also take into account the framework for internal controls produced by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), which can be applied to any industry.

The objective of the internal control systems 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.

3.4.7. 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 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 an internal control system for the (consolidated) financial reporting process as an integral component of the control system 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 disclosure policy also governs the integration of risk disclosure into general financial disclosure and provides the link to internal risk reporting. By adopting this policy, the Board of Managing Directors also established the key elements of the risk-related disclosure procedures and communicated them throughout the DZ BANK Group. The instructions and rules are audited regularly to assess whether they remain appropriate and are amended in line with 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 subgroup 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) accounting, 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 continuously checked using appropriate tests and fine tuned.

Information technology

The IT systems used for (consolidated) financial reporting have to satisfy the applicable security requirements in terms of confidentiality, integrity, availability, and authenticity. IT-supported controls are used, the purpose of which is 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 IT-supported (consolidated) accounting systems is subject to the security controls implemented as part of the general IT security principles at DZ BANK and the other entities in 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.

Improving and ensuring 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.

3.5. Risk management tools

3.5.1. 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 relevant to risk measurement are shown in figure 8. 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 8.5.2.

The investments used for the purposes of measuring **equity investment risk** are the following items reported in note 55 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. Minor discrepancies arise from the recognition of different impairment amounts in the market risk calculation and in the accounting treatment. 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 note 63 of the notes to the consolidated financial statements.

Technical provisions, 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

An explanation of the calculation of the counterbalancing capacity, which is used to determine economic liquidity adequacy, can be found 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 described in section 7.2.2.

FIG. 8 – RISK-BEARING EXPOSURES IN THE CONSOLIDATED FINANCIAL STATEMENTS[1]

		BANK SECTOR												INSURANCE SECTOR								
		Credit risk				Market risk								Actuarial risk			Market risk					
											Portfolio assignment[2]											
	Consolidated financial statements	Traditional credit risk	Issuer risk	Replacement risk	**Equity investment risk**	Interest-rate risk	Spread risk	Equity risk	Currency risk	Commodity 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.

3.5.2. 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 long-term liquidity is typically tied up in liabilities and assets 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 one 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 reason for managing **risk concentrations** by analyzing portfolios is 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 loss 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 credit 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 one or more 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.

Since the first quarter of 2016, **equity investment risk** has been 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 one-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 within 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 as part of 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 taken into account within business risk and is therefore implicitly included in the measurement of risk and assessment of capital adequacy.

The economic capital requirement for **operational risk** is determined using a portfolio model. Analyses of internal losses, risk indicators, or risk self-assessments facilitate identification of risk concentrations. 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.

Modeling and risk quantification, including on the basis of historical claims data, is carried out for parts of the premium and reserve risk and non-life catastrophe risk. These are based on the group's own portfolio and, in the case of natural catastrophes, on data from third-party providers. Possible risk concentrations are also analyzed, monitored, and managed as part of the risk management system.

The analysis, monitoring, and management of concentrations of actuarial risk are carried out as part of the risk management process. Potential risk concentrations arise when different types of risk are combined with

the concentration dimension (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. 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. 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.

3.5.3. 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 retain its risk-bearing capacity, even under extreme economic conditions. Stress tests are carried out in respect of economic risk-bearing capacity, regulatory capital ratios, and liquidity.

3.5.4. Limitation principles

The DZ BANK Group has implemented a system of limits to ensure that risk-bearing capacity is maintained. The limits used may be risk limits or volume limits, depending on the type of transaction 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. In the context of liquidity adequacy, the limit system is used to monitor whether economic liquidity adequacy is assured both at DZ BANK Group level and at the level of the management units.

3.5.5. Hedging objectives and hedging transactions

Hedging activities are 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 items and the derivatives used for the hedge, the mismatches are either eliminated or reduced by designating the hedging transaction as a hedge in accordance with the hedge accounting

requirements of IAS 39, or the fair value option is exercised. Hedge accounting in the DZ BANK Group includes hedging interest-rate risk and currency risk and 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. However, one hedge is reported in note 41 of the notes to DZ BANK's separate financial statements.

3.5.6. Risk reporting and risk manual

The quarterly **overall risk report** includes the risks throughout the group identified by DZ BANK. Together with the **stress test report**, which is also compiled on a quarterly basis, and the **report on recovery indicators**, which is prepared on a monthly and quarterly basis, 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 as part of the quarterly **credit risk report**. The Board of Managing Directors also receives monthly information on **liquidity risk** in the DZ BANK Group and in the management units. This information meets the disclosure requirements regarding the flow of risk-related information to the Board of Managing Directors specified in article 435 (2e) CRR.

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.

3.5.7. 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 that existed were the same as in 2015, even after the merger. A risk concentration that had been considered material in 2015 was reclassified as non-material in 2016.

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. Potential improvements to 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.3.4. 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.

The strategic focus of the DZ BANK Group, guided by the 'Verbund First' principle, is a significant contributing factor in helping the **cooperative banks to strengthen their market position**. The local cooperative banks therefore not only receive substantial financial support in the form of commissions, and profit distributions, they also enjoy the transfer of cost benefits and the availability of competitive products and services.

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 **merger** of the two former central institution groups is expected to create extensive synergies, including in terms of growth potential and earnings potential. Once the integration has been completed, it is estimated that the joint central institution will immediately be able to exploit income and cost synergies amounting to at least between €100 million and €150 million per year. The joint marketing activities and broader range of products are also expected to open up tangible opportunities in terms of income synergies.

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 2017. These are crucial factors

in the **strategic positioning** and the resulting opportunities for increasing earnings and cutting costs.

4.2.2. Digitalization and demographic change

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 the general advance of digitalization across all areas of life, opportunities are opening up in relation to day-to-day banking business, especially payments processing. This trend is strengthened by **demographic change** and the resulting changes in the behavior of younger generations of customers. 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. This may also lead to a reduction in the costs incurred by banks in relation to the supply and disposal of coins and notes.

The entities in the DZ BANK Group responded to these developments a while ago by increasing the innovative services that they offer. These included trialing the use of biometric processes by the payments processing provider equensWorldline SE, Utrecht, collaborating with iZettle on the development of a mobile point of sale, and implementing paydirekt (a cross-bank e-commerce payment process), as well as the first transatlantic payment on a blockchain platform between ReiseBank and ATB Financial, Calgary.

This portfolio of measures is helping the DZ BANK Group to drive the substitution of cash payments with mobile and other electronic payment processes so that it can participate in the move toward electronic payment transactions and seize opportunities for 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, cross-sectoral innovation management, including an Innovation Roundtable, has been introduced in order to coordinate the group's innovation activities, monitor market trends, and launch 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. At the start of 2016, as part of an industry-wide credit rating initiative following the amendment of German bank resolution legislation, Moody's downgraded the long-term credit rating of DZ BANK (pre-merger) for unsecured, non-subordinated bonds to Aa3 and upgraded the long-term credit rating for deposits to Aa1. These two changes did not have any impact on the DZ BANK Group's funding. Later in the year, Moody's changed the outlook on the long-term credit rating for unsecured, non-subordinated bonds to positive. This is because Moody's expects that, as a result of the merger of DZ BANK (pre-merger) with the former WGZ BANK, a larger volume of senior, unsecured paper will be available in the future with which to fulfill creditors' claims in the event of the bank's resolution.

In December 2016, Standard & Poor's placed the credit rating for unsecured, non-subordinated bonds on CreditWatch negative in view of Directive 2014/59/EU (Bank Recovery and Resolution Directive, BRRD) and its adoption into German law with effect from January 1, 2017. Consequently, Standard & Poor's subdivided the credit rating for these bonds in February 2017 to create a rating for unsecured, senior bonds and a rating for unsecured, subordinated bonds in this category. The credit rating for unsecured, subordinated bonds in this category was lowered by one notch.

Rating agencies Fitch and Standard & Poor's have confirmed DZ BANK's credit ratings. Fitch has withdrawn its credit rating for DZ BANK's covered bonds.

Figure 9 provides an overview of DZ BANK's credit ratings.

FIG. 9 – DZ BANK RATINGS

	Standard & Poor's		Moody's		Fitch	
	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Long-term rating for unsecured, non-subordinated bonds	AA-	AA-	Aa3	Aa2	AA-	AA-
Long-term rating for deposits	–	–	Aa1	Aa2	–	–
Covered bonds (DZ BANK BRIEFE)	AA+	AA+	–	–	–	AA+
Short-term rating	A-1+	A-1+	P-1	P-1	F1+	F1+

As at December 31, 2016, 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 is 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 for the DZ BANK Group.

5.1.1. Commercial-law environment

The financial position and financial performance of the DZ BANK Group are presented in accordance with IFRS. Changes to IFRS 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.

The DZ BANK Group faces material risks from a changed (consolidated) accounting standard in connection with the adoption of **IFRS 9 Financial Instruments** into European law. The provisions of IFRS 9 Financial Instruments will supersede the content of IAS 39 Financial Instruments: Recognition and Measurement. 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. The reformed model for allowances for losses on loans and advances and new rules on the categorization of financial instruments, in particular, will result in a need to modify business processes and IT systems. DZ BANK has set up projects to implement IFRS 9.

5.1.2. Regulatory environment

Basel IV

The BCBS is currently preparing comprehensive new rules in some areas of regulatory risk determination. A first draft of the revised CRR ('CRR II') is already available. These new rules, most of which do not

have to be applied until 2 years after the effective date, are expected to increase the capital requirements 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 risk-based capital requirements for which the assumptions are derived from models, the individual line items in the leverage ratio are not given their own risk weighting but are generally included in the total exposure without any weighting at all. All banks have been obliged to report the leverage ratio since 2014. The disclosure requirement has applied since 2015.

A mandatory minimum value for the leverage ratio has not been specified at European level for now. According to the European Commission's latest draft of CRR II, a minimum ratio of 3 percent is to be introduced on January 1, 2019. The draft also states that the adjustment of the calculation method for the total exposure is planned for a later date.

The definition of a mandatory minimum leverage ratio that is stricter than the one in the latest CRR II draft could lead to an additional capital requirement for the DZ BANK Group and/or DZ BANK based on the current volume of business. Implications for the DZ BANK Group's business model and competitive position cannot be ruled out either.

Minimum Requirement for Own Funds and Eligible Liabilities

The BRRD, the Single Resolution Mechanism, and the SAG have created the legal basis at European and national level for the new 'minimum requirement for own funds and eligible liabilities' (MREL) regulatory ratio.

The MREL is intended to ensure that banks hold a sufficiently large volume of capital 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 taking an equity interest if a bank gets into financial difficulties, enabling resolution to take place without recourse to government help and without jeopardizing the stability of the financial system.

The MREL ratio is the ratio of own funds and bail-in-able liabilities to the bank's total liabilities and own funds.

In February 2016, the SRB began requesting data with the aim of setting institution-specific minimum MREL ratios and to obtain an indication of the individual institutions' MREL liabilities and bail-in-able liabilities. Such a ratio has not yet been set for the DZ BANK banking group or DZ BANK. It is therefore not possible to gauge the effects of the MREL at present.

Supervisory Review and Evaluation Process

On December 19, 2014, the EBA published its Guidelines on Common Procedures and Methodologies for the Supervisory Review and Evaluation Process. The provisions contained in this document came into force on January 1, 2016. One of the aims being pursued by the EBA with SREP is the EU-wide harmonization of the supervisory review and evaluation process enshrined in Pillar 2 of Basel III. Harmonization is intended to create the same competitive conditions in the jurisdictions involved. At the end of each financial year, the supervisory authorities can use the results of the SREP to set individual capital and liquidity requirements that go beyond the existing requirements.

In 2016, the DZ BANK Group underwent the complete supervisory review and evaluation process on the basis of the EBA's guidance.

Standardized definition of borrower default

In 2016, the EBA 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 analyzed the planned new requirements and their impact and also participated in the qualitative and quantitative impact study. 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

Following 3 consultation papers on the Fundamental Review of the Trading Book in May 2012, October 2013, and December 2014, the BCBS published the finalized rules to fundamentally revise the capital requirements for market risk in the trading book on January 14, 2016.

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 models-based approaches.

The new Standardized Approach must be applied by all banks in the DZ BANK Group. 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 2020 once they have been implemented in national law. Application is expected to mean that the DZ BANK 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. The requirements had to be implemented by global systemically important banks (G-SIBs) by the end of 2016. For domestic systemically important banks, the principles come into force three years after classification as an 'other systemically important institution' (O-SII). BaFin classified DZ BANK as an O-SII in the second quarter of 2016. BaFin is also planning to incorporate some of the regulations on risk data management into the national rules with the 5th amendment of MaRisk BA.

The implementation of the new requirements, and possibly also inadequate implementation, could involve changes to the DZ BANK Group's business model (and that of DZ BANK), have a negative effect on their competitive position, or result in the need for additional capital. Moreover, it is impossible to gauge whether the principles will be implemented in the original form proposed by the BCBS or in some amended form.

Amendment of building society legislation

Lawmakers responded to the sustained low level of interest rates in the capital markets by bringing in a new version of the German Building and Loan Associations Act (BauSparkG) back in December 2015 and a related regulation. The new version relates to matters such as granting building societies the right to issue Pfandbriefe and expanding the list of permitted investments. Application of the new rules may impact on the individual risk types.

Solvency II

Solvency II defines requirements for capital adequacy, risk management, and a standardized reporting system for insurance companies that have been applicable throughout the EU since January 1, 2016. The new system of supervision is intended to facilitate more flexible regulation using a stronger principles-based and risk-based approach.

As far as R+V is concerned, Solvency II gives rise to significant changes in capital requirements and in the measurement of assets and liabilities. R+V also has to comply with additional rules on business organization

and further reporting and disclosure obligations. Other changes relate to the group requirements.

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. Implementation is planned for November 2017. In the DZ BANK Group, instant payments particularly affect DZ BANK, which has initiated the necessary measures to comply with the new requirements. In particular, DZ BANK has begun projects to assess the opportunities and risks associated with this new technology and to implement the aforementioned measures. Delayed or inadequate implementation of the requirements could lead to sanctions being imposed by the banking regulator and to reputational damage.

Other regulatory risk factors

In addition to the regulatory requirements described above, the following initiatives may give rise to risks for the DZ BANK Group:

- Single Supervisory Mechanism
- Reform of deposit protection schemes
- German Act on Ringfencing and Recovery and Resolution Planning for Credit Institutions and Financial Groups
- EU directive on structural reforms for banks
- Publication of the findings of regulatory audits.

5.1.3. Macroeconomic risk factors

Economic trends

The business performance of the DZ BANK Group and of DZ BANK is particularly influenced by Germany's economic position and the situation in financial and capital markets. Besides regular fluctuations in demand and production, extraordinary or unparalleled events can play a particular role. For example, the German economy continues to be affected by the fallout from the sovereign debt crisis in Europe. Germany's export-driven economy is highly dependent on international trade. A persistent period of weak growth, stagnation, or a sharp downturn in international trade would cause a drop in production and a correspondingly lower level of demand for finance from businesses.

European sovereign debt crisis

During the year under review, trends in international financial markets continued to be shaped by the stuttering global economy and central banks' expansionary monetary policy. Global economic growth and, in particular, the situation in financial markets since the European sovereign debt crisis have seen a slight improvement again, but the economy, the confidence of financial market players, and the extent of customer activity in the banking business have all also continued to be affected by the consequences of the financial crisis and sovereign debt crisis and, in particular, by the monetary policy response.

The economies of **Portugal**, **Italy**, **Greece**, and **Spain** 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.

Italy is faced with months of political uncertainty following the resignation of Prime Minister Renzi after his failure to secure approval for constitutional reform in a referendum held on December 4, 2016. Populist opposition forces, such as Beppe Grillo's anti-euro Five Star Movement, could become even stronger on the back of their success in rejecting the constitutional reform. If opponents of the euro and the EU manage to establish themselves as the most influential political force in the next parliamentary elections, Italy is likely to face an enduring loss of confidence in the international political arena and among investors. This would seriously prejudice the ability of the country to obtain funding in international capital markets.

Even after agreement on the third bailout from the European Stability Mechanism, which is due to run until August 2018, **Greece's** solvency is not assured and there is no guarantee that it will stay in the eurozone. 'Grexit' could lead to turbulence in the international financial markets, which would potentially have a negative impact on the countries of the eurozone.

The ECB's extremely expansionary monetary policy and particularly its bond-buying program are currently largely preventing the structural problems in some EMU member countries from being appropriately reflected

in the capital markets. However, there is a risk this could change in the event of an unforeseen change in monetary policy. In this case, highly indebted countries would find it considerably more difficult to arrange funding through capital markets.

Shipping finance

In the **shipping finance business**, the weakness in the global economy and the European sovereign debt crisis combined with an oversupply of shipping tonnage is continuing to adversely affect asset values and customers' credit standings.

Environment of 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. Action to mitigate the risk from the low interest rates includes optimizing the home savings portfolio and refining the home savings product, one example being the introduction of new home savings rates in November 2015 and June 2016.

The entire **insurance industry** is affected by the historically low interest rates in the capital markets. This environment of persistently low interest rates is adversely affecting personal insurance providers in the short and medium term because they have to recognize supplementary change-in-discount-rate reserves on their balance sheets. However, recognizing these additional reserves puts in place key, long-term prerequisites for limiting risk in life insurance and pension insurance business.

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 funds can actually be met from the funds concerned. This particularly affects the UniProfiRente product and the guarantee fund product group. UniProfiRente is a retirement pension solution certified and subsidized by the German government (known in Germany as a Riester pension). 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. The DZ BANK Group faces the risk that it could have to waive some of the management fee in order to meet the guarantee commitments. If this risk were to materialize, it could have a considerable negative 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 a detrimental 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**.

Latent risk factors

The possible negative impact of the **United Kingdom's exit from the EU** (known as Brexit) that is expected following the referendum on June 23, 2016 presents a risk to future economic growth, both at EU level and, in particular, for the United Kingdom. Reduced exports and a reluctance to invest on the part of companies as a result of increased uncertainty are also likely to subdue the German economy. After the referendum, the United Kingdom's credit rating from Standard & Poor's was downgraded from AAA to AA

with a negative outlook. Moody's maintained the credit rating at Aa1 but changed the outlook to negative. The credit ratings from the two rating agencies therefore still correspond to the internal VR rating class 1A used by the DZ BANK Group.

The Brexit vote has put European bank shares under pressure and drawn the financial markets' attention once again to the problems of the **Italian banking sector**, which has one of the highest proportions of non-performing loans in the EU. The non-performing loans, which total €360 billion, relate mostly to bad debts incurred for economic reasons in the past. In the year under review, it was evident that the non-performing customer loans at a large number of Italian banks had stabilized, albeit at a high level. However, the economic outlook, which remains moderate at best, means that there is no definitive trend reversal in sight at present. Furthermore, any political destabilization in Italy could make it difficult to implement necessary capital increases if capital markets are volatile. As the Renzi government's preferred bailout method using public money is generally no longer permissible because of the new European bail-in arrangements now in force, the privately financed bank rescue funds Atlante and Atlante 2 are now being used to support the recapitalization and recovery of Italian banks. These funds have insufficient resources however, so other options are being considered in individual cases, including the conversion of bank bonds into equity.

The attempted coup in **Turkey** on July 14 and 15, 2016 and the negative political fallout resulted in increased risk. The main critical factors are a possible worsening of what is already a tense relationship between Turkey and the EU due to the country's harsh treatment of political opponents and the potential withdrawal of international investment capital due to declining investor confidence. The full impact of the political changes in Turkey is not yet clear, and further developments will be monitored closely.

Important elections are coming up in 2017 in some European countries, notably in the **Netherlands**, **France**, and **Germany**. There is a risk that anti-EU forces will gain influence, weakening the political and economic cohesion of the Community. As a result, it could become increasingly difficult to make decisions at European level. If elements opposing the EU manage to form a government in key member states, there is a danger this could even lead to the breakup of the EU over the longer term. This would not only have serious political consequences, it would also have a substantial detrimental impact on the exports-based German economy.

In the **United States**, Donald Trump emerged as the victor in the presidential election in November 2016. At the same time, the Republicans gained a majority in Congress. This presents the new US president with significant scope to pursue his political agenda. Over the medium term, there is a risk that an increase in trade barriers could dampen the economic outlook, both in the US and around the world as a whole. Some of the faith in the US Federal Reserve (Fed) could also be lost, leading to a long-term slide in the value of the US dollar.

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 ship finance, asset values and customer creditworthiness, increase in the allowances for losses on 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 operating profit or equity.

5.2. Overarching bank-related risks

The DZ BANK Group is exposed to bank-specific risk factors that have an impact on a number of risk types relevant to liquidity and capital adequacy. These factors are described below. They are generally taken into account as part of the bank's overall risk management.

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 are 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) 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 the financial crisis and sovereign debt crisis. 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 past experience. 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 context of 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. 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 Basel III requirements.

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.

The entities relevant for determining economic liquidity adequacy are DZ BANK and the following management units: BSH, DG HYP, DVB, DZ PRIVATBANK, TeamBank, VR LEASING, and WL BANK.

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.

6.2. Economic liquidity adequacy

6.2.1. Risk definition and risk factors

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.

Risk factors

Liquidity risk arises from a mismatch in the timing and amount of cash inflows and outflows. The following key factors affect the level of liquidity risk:

- the funding structure of lending transactions;
- the uncertainty surrounding liquidity tied up in the funding of structured issues and investment certificates with termination rights and obligation acceleration;
- changes in the volume of deposits and loans, in which the cash-pooling function in the cooperative financial network is a significant determining factor;
- the funding potential in money markets and capital markets;
- the fluctuations in fair value and marketability of securities, and the eligibility of such securities for use in collateralized funding arrangements, such as bilateral repos or transactions in the tri-party market;
- the potential exercise of liquidity options, such as drawing rights in irrevocable loan or liquidity commitments, and termination or currency option rights in lending business;
- the obligation to pledge collateral in the form of cash or securities (for example, for derivative transactions or to guarantee payments as part of intraday liquidity).

Liquidity risk also arises from changes to an entity's own rating if contractual requirements to provide collateral depend on the rating.

6.2.2. Risk strategy

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 temporary interruption in 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 comprising customers such as corporates, institutions, and banks. This is achieved with active market and customer support, intensively maintained customer relationships, and an excellent reputation in the money markets. 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 Asset Liability Committee/Treasury and Capital Committee.

Liquidity risk control in the DZ BANK Group is coordinated by the Group Risk Management working group and carried out independently of the units in Risk Controlling at DZ BANK 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 liquidity risk management and liquidity risk control. The **Board of Managing Directors** receives a monthly report on the current liquidity risk situation and the changes over the previous month.

The DZ BANK **Treasury** unit 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 **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 **Asset Liability Committee/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. Measurement of liquidity risk

The units responsible for liquidity risk management at the entities in the DZ BANK Group ensure and monitor **intraday liquidity** by constantly managing accounts held with central banks and correspondent banks in Germany and abroad. To this end, the intraday cash flows at DZ BANK for each trading day are broken down by time of day; the collateral required to execute the payments is also measured. This allows DZ BANK to identify any payment concentrations during the course of a day as quickly as possible. The measurement results are also used to model the collateral required for intraday liquidity as part of the overall measurement of liquidity risk.

Within the DZ BANK Group, the biggest intraday cash flows are at DZ BANK.

To determine liquidity risk for a **1-year time horizon**, DZ BANK uses its own liquidity risk measurement and control method approved by BaFin in accordance with section 10 of the German Liquidity Regulation (LiqV) for the assessment of adequate liquidity in accordance with section 2 LiqV in place of the standard regulatory method.

The internal liquidity risk model is also used to determine the liquidity risk at DZ BANK Group level. 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. The model also covers the liquidity risk arising from short-term funding of the asset-backed commercial paper programs (ABCP programs).

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.

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 an **inverse stress test** is carried out and reported on a monthly basis.

The internal liquidity risk model is constantly revised as part of 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.

6.2.5. Risk management

Management of limits for liquidity risk

Liquidity risk limits are set with the aim of ensuring economic liquidity adequacy. They are 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 a **limit** for liquidity risk and an **observation threshold** that is higher than the limit. At the level of the entities in the DZ BANK Group, the Board of Managing Directors of DZ BANK has set only one limit for each entity in the group. The liquidity risk control function at DZ BANK monitors the limits and observation threshold.

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

Measures to reduce liquidity risk are initiated by the treasuries of the management units as part of their liquidity management function. 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.

6.2.6. Quantitative variables

The available liquid securities and the unsecured short-term and medium-term funding are the main factors determining the minimum liquidity surplus. Additional contractual obligations that would be owed if DZ BANK's own rating were downgraded also play a role in the measurement of liquidity risk. These factors are presented below.

Liquid securities

Liquid securities, together with balances on nostro accounts and non-collateralized funding capacity, form the **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.

Figure 10 shows the liquidity value of the liquid securities that would result from secured funding or if the securities were sold.

FIG. 10 – LIQUID SECURITIES

€ billion	Dec. 31, 2016	Dec. 31, 2015
Liquid securities eligible for GC Pooling (ECB Basket)[1]	**38.0**	**37.1**
Securities in own portfolio	36.5	31.2
Securities received as collateral	11.8	12.5
Securities provided as collateral	-10.3	-6.6
Liquid securities eligible as collateral for central bank loans	**17.7**	**11.8**
Securities in own portfolio	16.2	10.3
Securities received as collateral	4.6	3.7
Securities provided as collateral	-3.1	-2.2
Other liquid securities	**7.1**	**5.1**
Securities in own portfolio	6.9	4.9
Securities received as collateral	0.2	0.4
Securities provided as collateral	-0.1	-0.2
Total	**62.8**	**54.0**
Securities in own portfolio	59.6	46.5
Securities received as collateral	16.6	16.5
Securities provided as collateral	-13.4	-9.0

1 GC = general collateral, ECB Basket = eligible collateral for ECB funding.

As at December 31, 2016, the total liquidity value at the level of the **DZ BANK Group** was €62.8 billion (December 31, 2015: €54.0 billion). The total liquidity value attributable to **DZ BANK** as at December 31, 2016 was €45.4 billion (December 31, 2015: €42.1 billion).

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.

Funding and liquidity maturities

The level of liquidity risk in the DZ BANK Group and at DZ BANK is determined by the short-term and medium-term funding structure. The main sources of funding on the unsecured money markets are shown in figure 11. The change in the composition of the main sources of funding compared with December 31, 2015 is 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.

Additional contractual obligations

Some OTC collateral agreements that entities in the DZ BANK Group have concluded contain rating-based triggers. A downgrade in an entity's own credit rating would trigger collateral calls by counterparties. Because this collateral would no longer be available to generate liquidity if it were called in, the stress scenarios also include deductions arising from these additional contractual obligations.

FIG. 11 – UNSECURED SHORT-TERM AND MEDIUM-TERM FUNDING

	DZ BANK Group		DZ BANK	
%	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Local cooperative banks	46	46	49	49
Other banks, central banks	11	12	10	10
Corporate customers, institutional customers	12	10	11	8
Commercial paper (institutional investors)	30	32	29	32

Figure 12 shows the additional collateral across all currencies that would have to be provided to counterparties should DZ BANK's credit rating be downgraded. The figures reflect the situation in virtually the entire DZ BANK Group because the additional contractual obligations of the other entities in the group to provide further collateral are negligible.

The changes in the additional contractual obligations compared with December 31, 2015 were mainly the result of new transactions and changes in fair value and/or notional amounts.

Additional contractual obligations represent only a minimal liquidity risk that is already covered by the stress scenarios with defined limits.

6.2.7. Risk position

Figure 13 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.

The minimum liquidity surplus for the **DZ BANK Group**, measured as at the reporting date on the basis of a forecast period of 1 year for the stress scenario with defined limits that had the lowest minimum liquidity surplus (economic liquidity adequacy), was €11.2 billion as at December 31, 2016 (December 31, 2015: €8.9 billion).

During the year under review, liquidity did not fall below the internal minimum figures specified by the Board of Managing Directors for 2016 (€4.0 billion observation threshold, €1.0 billion minimum limit – in both cases unchanged year on year).

The minimum liquidity surplus measured for **DZ BANK** as at December 31, 2016 was €3.8 billion (December 31, 2015: €4.0 billion). This value is derived from the stress scenario with defined limits that had the lowest minimum liquidity surplus and relates to the 1-month forecast period defined for the limit. The minimum liquidity surplus did not fall below the limit at any time in the year under review. The impact of the stress scenarios for DZ BANK is measured and analyzed precisely for each day and is taken beyond the limit period of 1 month right up to 1 year.

The results demonstrate that economic liquidity adequacy was maintained at all times in the reporting year. The minimum liquidity surplus as at December 31, 2016 was positive in the stress scenarios with defined

FIG. 12 – ADDITIONAL CONTRACTUAL OBLIGATIONS

	One-notch deterioration in credit rating		Two-notch deterioration in credit rating		Three-notch deterioration in credit rating	
€ million	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Additional contractual obligations based on collateral agreements	120	115	212	188	822	840

FIG. 13 – 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, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Downgrading	-62.0	-54.8	85.4	71.6	23.3	16.8
Corporate crisis	-62.5	-53.1	73.8	62.0	11.2	8.9
Market crisis	-65.4	-51.2	84.4	70.8	19.1	19.6
Combination crisis	-66.6	-31.4	79.8	45.8	13.2	14.5

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 observation threshold or the limit. If it repeatedly falls below the observation threshold, there is an increased risk that the group would subsequently not be able to keep within 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 negative consequences for an institution's financial position. 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 regulatory liquidity coverage ratio (LCR) specified in the Basel III framework, which was transposed into law with the CRR and Delegated Regulation 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 high-quality liquid assets to total net cash outflows in defined stress conditions over the next 30 days. From January 1, 2016, banks had to maintain an LCR of at least 70 percent. This minimum required ratio was increased to 80 percent from January 1, 2017, and will rise again to 100 percent from January 1, 2018. DZ BANK reports its own LCR and that of the DZ BANK banking group, calculated in accordance with the CRR in conjunction with Delegated Regulation 2015/61, to the supervisory authority on a monthly basis.

The **net stable funding ratio** (NSFR) 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 is not expected to become mandatory before the 2019 financial year when CRR II comes into force.

The monthly reporting was extended in April 2016 to include the **additional liquidity monitoring metrics** (ALMMs) specified in the implementing regulation issued on March 1, 2016. The ALMMs comprise a total of 5 further liquidity metrics, in each case at the level of the DZ BANK banking group and DZ BANK. Banks are not required to comply with any minimum requirements in respect of these ALMMs.

6.3.2. Organization, responsibility, and reporting

The liquidity ratios reported for supervisory purposes resulting from the CRR, the Basel III framework, and the Delegated Regulation 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 **Asset Liability Committee/Treasury and Capital Committee** and the **Board of Managing Directors** are notified of the LCR (monthly) and the NSFR (quarterly).

6.3.3. Liquidity coverage ratio

The LCRs for the **DZ BANK banking group** and **DZ BANK** calculated in accordance with the Delegated Regulation as at December 31, 2016 are shown in figure 14.

FIG. 14 – LIQUIDITY COVERAGE RATIOS AND THEIR DETERMINING FACTORS

	DZ BANK banking group		DZ BANK	
€ billion	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Total high-quality liquid assets	67.8	46.4	46.9	31.2
Total net cash outflows	44.9	36.9	33.5	29.3
LCR	151.0%	125.8%	139.9%	106.6%

In the reporting year, the regulatory minimum requirement for the LCR of 70 percent was significantly exceeded on every reporting date at the level of both the DZ BANK banking group and DZ BANK.

6.4. Outlook

The extension of the **measurement of intraday liquidity**, which began in 2015, is to continue in 2017. In addition, the new regulatory liquidity reporting ratios will continue to be integrated into liquidity risk management, with activities focused on the **NSFR**.

It is also planned to implement measures to improve **risk data aggregation** and **risk reporting** in relation to economic liquidity adequacy in 2017.

7. Capital adequacy

7.1. Principles

The management of capital adequacy is an integral component of business management in the DZ BANK Group and at DZ BANK. DZ BANK and all other management units are included in the groupwide management of capital adequacy. Active 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.

In addition to the management of economic capital, regulatory solvency requirements for the DZ BANK financial conglomerate, the DZ BANK banking group, and the R+V Versicherung AG insurance group are also observed.

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. Strategy, organization, and responsibility

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 Asset Liability Committee/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.

7.2.2. 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.

As part of **risk-bearing-capacity analysis**, the risk capital requirement is compared with the available internal capital (reduced by a capital buffer) 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 and bearing in mind the necessary capital buffer. These limits then restrict the risk capital requirement. 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 (FINREP), but excludes R+V.
- 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.

It was necessary to **recalculate the overall solvency requirement** as at December 31, 2015 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 2016 for the Insurance sector on the basis of R+V's 2015 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 have not been completely updated in the in-year calculation and an appropriate projection has been made.

Recalculating the overall solvency requirement as at December 31, 2015 means that R+V has implemented the finalized requirements of **Solvency II**, which have been in force since January 1, 2016. The calculation of risk was therefore switched to the method using the yield curve excluding interest-rate premium specified by the European Insurance and Occupational Pensions Authority (EIOPA). A stochastic model was used for the life insurance providers' calculations. In addition, the calculation of the overall solvency requirement for occupational incapacity insurance was moved from the life actuarial risk module to the health actuarial risk module. The recalculation also involved changes to the scope of consolidation. These essentially related to the consolidation of the Italian subsidiaries Assimoco S.p.A., Segrate, (Assimoco) and Assimoco Vita S.p.A., Segrate, (Assimoco Vita). The implementation of Solvency II has had an impact on R+V's overall solvency requirement and own funds, although the DZ BANK Group's economic capital adequacy continues to be assured.

The recalculation led to changes in the key risk indicators at DZ BANK Group level. The figures as at December 31, 2015 given in this opportunity and risk report have been restated accordingly and are not directly comparable with the figures in the 2015 opportunity and risk report.

7.2.3. Capital buffer

The purpose of the capital buffer is to cover the lack of precision in some areas of risk measurement as well as account for risks that are not measured as part of the risk capital requirement and not managed using risk limits (upper loss limits). 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.

The capital buffer also includes components added as part of the **merger** to take into account the risk measurement in the DZ BANK Group (pre-merger) and in the former WGZ BANK Group that has not yet been fully integrated. The capital buffer components concerned will lapse when the full integration of the systems has been completed.

7.2.4. Risk-bearing capacity

The DZ BANK Group's **available internal capital** as at December 31, 2016 was measured at €26,408 million (December 31, 2015: €22,518 million; original figure: €22,616 million). As at December 31, 2016, the **capital buffer** amounted to €1,929 million (December 31, 2015: €1,526 million). The higher values were largely attributable to the impact from the merger. However, the increase in available internal capital also arose because of the positive financial performance in the year under review.

Derived from the available internal capital minus the capital buffer, the total **upper loss limit** for the DZ BANK Group amounted to €22,299 million as at December 31, 2016 (December 31, 2015: €16,866 million). As at December 31, 2016, the **risk capital requirement** was calculated at €14,975 million (December 31, 2015: €12,098 million; original figure: €12,167 million). The rise in the upper loss limit was mainly caused by the merger, model changes at R+V resulting from the implementation of Solvency II, and the refinement of risk models at DZ BANK. The increase in risk capital requirement also resulted from the aforementioned effects and from the fall in the general level of interest rates.

As at December 31, 2016, the **economic capital adequacy ratio** for the DZ BANK Group was calculated at 163.5 percent (December 31, 2015: 173.5 percent; original figure: 173.3 percent). Figure 15 provides an overview of the DZ BANK Group's economic capital adequacy.

The upper loss limits and risk capital requirements for the Bank sector, broken down by risk type, are shown in figure 16.

Figure 17 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 a favorable effect arising from the ability to offset deferred taxes resulting from the elimination of deferred tax liabilities in the loss scenario against losses. 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.

As the upper loss limits were not retrospectively adjusted when the overall solvency requirement as at December 31, 2015 was recalculated, the prior-year upper loss limits for some of the risk types in the Insurance sector were exceeded retrospectively. This did not affect the overall upper loss limit for the Insurance sector.

7.2.5. Economic stress tests

Economic stress tests at DZ BANK Group level

Economic stress tests are used by DZ BANK on an ongoing basis to establish whether the DZ BANK Group would retain its risk-bearing capacity in extreme but plausible scenarios. The economic stress test framework includes several **multiple-risk economic scenarios** and **specific stress tests for individual risk types** incurred by 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.

Inverse stress tests complement the scenario analyses referred to above 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.

The economic stress test framework applies to all of the DZ BANK Group's material **downside risks,** including risks that are only critical for individual management units because of their particular business model. The stress tests are based on the methods and procedures used for calculating risk-bearing capacity.

FIG. 15 – ECONOMIC CAPITAL ADEQUACY OF THE DZ BANK GROUP

€ million	Dec. 31, 2016	Sep. 30, 2016	Jun. 30, 2016	March 31, 2016	Dec. 31, 2015
Available internal capital	26,408	26,929	23,745	24,028	22,518
Capital buffer	-1,929	-1,994	-1,014	-1,493	-1,526
Available internal capital after deduction of capital buffer	24,479	24,935	22,731	22,534	20,992
Upper loss limit	22,299	22,299	19,244	19,244	16,866
Risk capital requirement (after diversification)	14,975	15,836	13,695	14,177	12,098
Economic capital adequacy	**163.5%**	**157.5%**	**166.0%**	**159.0%**	**173.5%**

FIG. 16 – UPPER LOSS LIMITS AND RISK CAPITAL REQUIREMENT IN THE BANK SECTOR

	Upper loss limits					Risk capital requirement				
€ million	Dec. 31, 2016	Sep. 30, 2016	Jun. 30, 2016	Mar. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Sep. 30, 2016	Jun. 30, 2016	Mar. 31, 2016	Dec. 31, 2015
Credit risk	6,606	6,609	4,973	4,973	4,860	4,472	4,773	3,780	3,843	3,569
Equity investment risk	1,468	1,405	1,299	1,299	1,081	1,263	1,178	1,068	1,045	854
Market risk[1]	7,582	7,651	6,490	6,490	5,830	4,347	4,599	3,748	3,377	3,204
Technical risk of a home savings and loan company[2]	600	600	600	600	550	541	541	541	541	549
Business risk[3]	1,024	997	847	847	775	912	813	707	743	579
Operational risk	1,152	1,152	1,052	1,052	1,150	892	897	870	886	871
Total (after diversification)	**17,089**	**17,089**	**14,034**	**14,034**	**13,066**	**11,105**	**11,525**	**9,511**	**9,228**	**8,391**

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.

FIG. 17 – UPPER LOSS LIMITS AND OVERALL SOLVENCY REQUIREMENT IN THE INSURANCE SECTOR

	Upper loss limits					Overall solvency requirement				
€ million	Dec. 31, 2016	Sep. 30, 2016	Jun. 30, 2016	Mar. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Sep. 30, 2016	Jun. 30, 2016	Mar. 31, 2016	Dec. 31, 2015
Life actuarial risk	1,200	950	750	680	520	702	813	659	438	403
Health actuarial risk	330	330	330	330	70	148	181	200	286	162
Non-life actuarial risk	3,250	3,250	3,100	2,900	2,600	2,691	2,762	2,692	2,692	2,651
Market risk	3,540	3,650	3,900	4,100	2,950	2,761	2,965	2,959	3,724	2,578
Counterparty default risk	110	110	110	110	50	73	79	75	107	67
Operational risk	640	640	600	580	470	512	534	532	533	478
Non-controlling interests in insurance companies and entities in other financial sectors	120	120	120	120	80	101	101	100	100	100
Total (after diversification)	**5,210**	**5,210**	**5,210**	**5,210**	**3,800**	**3,870**	**4,311**	**4,184**	**4,949**	**3,706**

However, the economic stress tests also reflect events that go beyond the methods established for the calculation of risk-bearing capacity.

The stress testing methods 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.

The scenarios for the economic stress test translate potential trends in macroeconomic indicators and market prices during a **crisis** into changes in available internal capital and the risk capital requirement. This enables the impact of external economic developments on the risk-bearing capacity of the DZ BANK Group to be addressed comprehensively and consistently.

For the economic stress tests, DZ BANK has put in place a system of threshold values as an **early-warning mechanism.** A continuous reporting system monitors whether values are within these thresholds in the multiple-risk scenarios and the stress tests for specific risk types. These early-warning signals trigger various **risk management processes** so that there is an early response to the potential risks highlighted by the stress tests.

The stress tests are calculated every quarter and approved by the **Risk Committee** or the Board of Managing Directors of DZ BANK.

Economic stress tests in the Bank sector

The method used for stress testing in the Bank sector includes potential **reductions in available internal capital** and amendments to risk exposures resulting from the scenarios. These reductions may be caused, for example, by losses on the measurement of tradable financial instruments, write-downs on the carrying amounts of investments due to changes in market prices, losses due to defaults and changes in fair value due to deteriorations in credit quality and loss rates, losses from operational risk, and changes in sources of return resulting from changing macroeconomic conditions or market situations.

In the stress scenarios, the measurement of market risk, equity investment risk, credit risk, the technical risk of a home savings and loan company, business risk, and operational risk in the Bank sector is also adapted so as to adequately reflect the simulated change triggered by a crisis. The initial parameters for measuring risk are scaled in such a way as to make them suitable for reflecting extremely negative hypothetical or historical situations. The procedure for aggregating risk types into a stress test result covering all management units and risk types is similar to the regular procedure used for risk measurement. In the hypothetical multiple-risk scenarios, increased correlation between different types of risk is also tested.

In the **inverse stress test**, the danger to risk-bearing capacity 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. The priorities in inverse stress tests are therefore, firstly, to identify relevant scenarios with the underlying potential to jeopardize the survival of the business, and secondly, to analyze just how probable and/or plausible a specific, sufficiently serious scenario of this nature would be.

DZ BANK is integrated into the standard risk capital requirement stress tests conducted in the DZ BANK Group. In addition to the standard stress test procedures at group level, DZ BANK creates crisis scenarios based on the internal market risk model and adjusts the scenarios on an ongoing basis to take into account current market data.

Economic stress tests in the Insurance sector

Like the other management units in the DZ BANK Group, R+V regularly conducts the economic stress tests applicable to the group but they are based on a separate stress testing method for the Insurance sector. This means that appropriate account is taken of the specific features of R+V's business model and its risk and capital management systems. In particular, policyholder participation is taken into account.

As a minimum, market and credit risk are covered in the **multiple-risk economic scenarios,** while actuarial risk is addressed using the stressed yield curve. The parameters for the yield curve, exchange rates, share prices, interest-rate volatility, and credit spreads are changed.

In the **specific economic stress tests** for actuarial risk, the parameters for lapse and mortality in life insurance business and the expected number of claims for natural disasters in the non-life insurance business are explicitly changed.

7.2.6. Possible impact from crystallized risk

If risk covered by capital actually materializes, this has a negative impact on both financial performance and financial position. In the income statement, 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 a central institution in the cooperative financial network. The return on investment 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 that the risk capital requirement exceeds the available internal capital. Additional or more stringent statutory or 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 aim to wind up DZ BANK or its subsidiaries.

7.3. Regulatory capital adequacy

7.3.1. Principles

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 continuously for the DZ BANK financial conglomerate, monthly for the DZ BANK banking group and DZ BANK, and at least quarterly for the R+V Versicherung AG insurance group. The Board of Managing Directors and the supervisory authority are notified of the results in the quarterly reports on capital management.

7.3.2. DZ BANK financial conglomerate

The German Supervision of Financial Conglomerates Act (FKAG) essentially forms the legal basis for the supervision of the DZ BANK financial conglomerate.

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 figures for the R+V Versicherung AG insurance group included in the calculations for the financial conglomerate's solvency as at December 31, 2015 were determined in accordance with Solvency I for the last time. The preliminary figures as at December 31, 2016 for the first time included figures for the R+V Versicherung AG insurance group calculated in accordance with Solvency II.

On the basis of a provisional calculation, the DZ BANK financial conglomerate's eligible own funds as at December 31, 2016 amounted to €25,637 million (December 31, 2015: confirmed final eligible own funds of €20,760 million). On the other side of the ratio, the provisional solvency requirement was €14,358 million (December 31, 2015: confirmed final solvency requirements of €11,213 million). This gives a provisional coverage ratio of 178.6 percent (December 31, 2015: confirmed final coverage ratio of 185.1 percent), which is significantly in excess of the regulatory minimum requirement of 100 percent.

7.3.3. DZ BANK banking group

Regulatory framework

The DZ BANK banking group uses the following methods to calculate the regulatory own funds requirements in accordance with the CRR:

- Credit risk: IRB approaches (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.

In the reporting year, DZ BANK continued to support the further development of banking supervision, once again stepping up its collaboration in the relevant committees, both at national and international levels.

Regulatory capital ratios in accordance with the CRR

The regulatory **own funds** of the **DZ BANK banking group** as at December 31, 2016 amounted to a total of €22,066 million (December 31, 2015: €18,429 million).

The significant rise in own funds was mainly attributable to a total increase of €3,600 million in **common equity Tier 1 capital**. Positive merger effects and net profits eligible for retention led to an increase in share capital, capital reserves, and retained earnings of €4,415 million. Another positive factor was the increase in the revaluation reserve of €355 million, which was eligible for inclusion in accordance with the CRR. On the other hand, the decline in non-controlling interests reduced common equity Tier 1 capital by €933 million. Other adverse effects on common equity Tier 1 capital arose from the rise in capital deductions, which were attributable, among other things, to CRR phase-in stipulations.

There were no changes in the year under review in the portfolio of issued additional Tier 1 bonds (AT1 bonds). The increase of €87 million in this class of capital from €1,748 million as at December 31, 2015 to €1,835 million as at December 31, 2016 was largely explained by lower capital deductions. Under the CRR transitional guidance, the capital deductions, particularly those in connection with intangible assets and goodwill, are being moved from AT1 to common equity Tier 1 capital in five annual stages.

Tier 2 capital declined marginally by €50 million year on year. The additional Tier 2 capital instruments resulting from the merger were more than offset by the decreases resulting from the reduced level of eligibility under the CRR in the last five years before the maturity date.

As at December 31, 2016, the regulatory **own funds requirements** for the DZ BANK banking group were calculated at €9,477 million (December 31, 2015: €7,828 million). The substantial rise resulted from the inclusion of the former WGZ BANK banking group for the first time as at September 30, 2016.

The DZ BANK banking group's **common equity Tier 1 capital ratio** was 14.5 percent as at December 31, 2016 and thus significantly higher than the ratio of 13.9 percent as at the end of 2015. As at December 31, 2016, the **Tier 1 capital ratio** was 16.0 percent, an increase on the ratio of 15.6 percent as at December 31, 2015. The **total capital ratio** declined from 18.8 percent as at December 31, 2015 to 18.6 percent as at the balance sheet date.

The **common equity Tier 1 capital ratio** for **DZ BANK** was calculated at 18.1 percent as at December 31, 2016, which was lower than the equivalent figure of 19.1 percent as at December 31, 2015. The **Tier 1 capital ratio** was also down, from 20.2 percent as at December 31, 2015 to 19.1 percent as at December 31, 2016. The **total capital ratio** declined from 26.6 percent as at December 31, 2015 to 24.4 percent as at the reporting date.

The ratios at DZ BANK banking group level and at DZ BANK level were well above the regulatory minimum CRR capital ratios at all times during 2016.

FIG. 18 – REGULATORY CAPITAL RATIOS OF THE DZ BANK BANKING GROUP IN ACCORDANCE WITH THE CRR

€ million	Dec. 31, 2016	Sep. 30, 2016	Jun. 30, 2016[1]	Mar. 31, 2016[1]	Dec. 31, 2015[1]
Capital					
Common equity Tier 1 capital	17,154	16,472	13,101	13,318	13,554
Additional Tier 1 capital	1,835	1,840	1,890	1,879	1,748
Tier 1 capital	**18,989**	**18,312**	**14,991**	**15,197**	**15,302**
Total Tier 2 capital	3,077	3,134	2,800	3,005	3,127
Total capital	**22,066**	**21,466**	**17,791**	**18,202**	**18,429**
Capital requirements					
Credit risk (including long-term equity investments)	8,153	8,243	6,501	6,272	6,243
Market risk	510	507	693	809	872
Operational risk	814	814	712	712	713
Total	**9,477**	**9,564**	**7,906**	**7,793**	**7,828**
Capital ratios					
Common equity Tier 1 capital ratio (minimum ratio: 5.125%)	14.5%	13.8%	13.3%	13.7%	13.9%
Tier 1 capital ratio (minimum ratio: 6.625%)	16.0%	15.3%	15.2%	15.6%	15.6%
Total capital ratio (minimum ratio: 8.625%)	18.6%	17.9%	18.0%	18.7%	18.8%

1 Pre-merger disclosures.

Figure 18 provides an overview of the DZ BANK banking group's regulatory capital ratios in accordance with the CRR.

SREP minimum capital ratio

Under the Supervisory Review and Evaluation Process (SREP) in connection with Basel III Pillar 2 (article 16 of Regulation (EU) No. 1024/2013), the ECB decided that the DZ BANK banking group had to maintain a common equity Tier 1 capital ratio of at least 9.5 percent in the reporting year. The countercyclical capital buffer, which has to be determined individually for each bank at every reporting date, is added to the common equity Tier 1 capital ratio. As at December 31, 2016, this countercyclical capital buffer amounted to 0.023 percent, producing a total SREP minimum capital ratio of 9.523 percent (December 31, 2015: 8.0 percent). This requirement, which is specific to the banking group, was met at all times during the year under review.

Future regulatory capital ratios with full application of the CRR

According to the rules that will be in force from 2019, under which the CRR will be applied in full, the capital ratios for the DZ BANK banking group and DZ BANK will be as shown in figure 19.

At all times in the reporting year, the ratios were in excess of the minimum values planned for the future and the present ECB requirement specified in the SREP.

Leverage ratio

The leverage ratio shows the ratio of a banking group's or bank's Tier 1 capital to its total exposure. In contrast to risk-based capital requirements for which the assumptions are derived from models, the individual line items in the leverage ratio are not given their own risk weighting but are generally included in the total exposure without any weighting at all.

FIG. 19 – REGULATORY CAPITAL RATIOS WITH FULL APPLICATION OF THE CRR

	DZ BANK banking group		DZ BANK	
	Dec. 31, 2016	Dec. 31, 2015	**Dec. 31, 2016**	Dec. 31, 2015
Total capital ratio	18.8%	18.3%	24.4%	26.6%
Tier 1 capital ratio	15.1%	13.8%	19.1%	20.0%
Common equity Tier 1 capital ratio	14.5%	13.0%	18.1%	19.0%

FIG. 20 – LEVERAGE RATIOS

	DZ BANK banking group		DZ BANK	
	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Leverage ratio according to CRR transitional guidance	4.4%	4.5%	4.0%	4.6%
Leverage ratio applying the CRR in full	4.1%	4.0%	4.0%	4.6%

The leverage ratios for the DZ BANK banking group and DZ BANK – in each case in accordance with the currently applicable CRR transitional guidance and assuming full application of the CRR – are presented in figure 20.

The slight year-on-year decline in the **DZ BANK banking group's** leverage ratio as at December 31, 2016 calculated in accordance with the **CRR transitional guidance** mainly arose because of the increase of €98.1 billion in the total exposure. This increase was primarily due to the merger and also the expansion in on-balance-sheet business as part of ordinary business activities. However, this downward effect on the leverage ratio was almost fully offset by a rise in Tier 1 capital.

At **DZ BANK** level, the total exposure went up by €101.4 billion. The increase was largely attributable to the merger and expansion in on-balance-sheet business in the course of ordinary business activities. The rise in Tier 1 capital, which was lower than the equivalent figure for the DZ BANK banking group, led to a significant fall in the leverage ratio for DZ BANK.

Regulatory stress tests

At banking group level, DZ BANK conducts the quarterly regulatory stress tests that are required to verify the group's capital adequacy, including in crisis situations. In these tests, DZ BANK distinguishes between multiple-risk scenarios and scenarios for specific risk types. Two multiple-risk stress tests are currently being conducted, as is one risk-specific stress test for credit risk. These stress scenarios correspond to those in the economic stress test.

In the stress scenarios, regulatory capital adequacy is examined by stress-testing net profit, the revaluation reserve and, building on that, own funds calculated in accordance with the CRR and the risk-weighted assets for credit risk, market risk, and operational risk, depending on the scenario concerned.

In line with the approach in the economic stress tests, DZ BANK has also put in place a system of threshold values as an early-warning mechanism in the regulatory stress tests. A continuous reporting system monitors whether values are within these thresholds in the multiple-risk scenarios and in the risk-specific credit risk stress test. These early-warning signals trigger various risk management processes so that there is an early response to the potential risks highlighted by the stress tests. The stress tests are calculated every quarter and approved by the Risk Committee.

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.

Following the introduction of Solvency II on January 1, 2016, regulatory risk-bearing capacity is calculated using the standard formula as specified in Solvency II. The regulatory risk capital requirement is calculated as value-at-risk with a confidence level of 99.50 percent.

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.

As at December 31, 2016, the preliminary figure for the regulatory risk-bearing capacity of the R+V Versicherung AG insurance group was 182.4 percent. Own funds eligible under regulatory requirements

amounting to €9,273 million were available as at December 31, 2016 to cover the solvency requirement of €5,083 million. There are no comparable figures for the prior year because Solvency II was applied for the first time from January 1, 2016.

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, 2017. 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.

The internal stress tests described in section 7.2.5. fulfill the requirement on R+V to conduct stress tests as prescribed by EIOPA and BaFin and 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. Outlook

7.4.1. New definition of economic capital adequacy

From the 2017 financial year, DZ BANK is planning to allocate the economic capital buffer requirement to the individual types of risk on the risk side rather than deduct it from the available internal capital. Risks that cannot be allocated to any particular type of risk are reported separately. The aim is to make the presentation of economic capital adequacy more transparent. If all other factors remain the same, this change will not result in any difference in the absolute coverage of risk provided by the available internal capital. The coverage ratio (ratio of available internal capital to risk capital requirement) is expected to decline slightly as a result of the change.

7.4.2. SREP minimum capital ratio in 2017

The ECB will use a modified approach for determining the SREP minimum ratio for 2017. With the additional Pillar 2 own funds requirement (Pillar 2 requirement), it will specify a mandatory add-on that represents the basis of calculation for the maximum distributable amount (MDA). The add-on will be determined from the findings of the SREP. In addition to this mandatory component, there will be a recommended own funds amount under Pillar 2 (Pillar 2 guidance), which likewise will be determined from the SREP. Failure to comply with the own funds guidance under Pillar 2 does not constitute a breach of regulatory own funds requirements. Nevertheless, this figure will be relevant as an early warning indicator for capital planning.

The mandatory SREP minimum capital ratio and its components are shown in figure 21.

FIG. 21 – SREP MINIMUM CAPITAL RATIO IN 2017

Minimum requirement for common equity Tier 1 capital ratio	4.50%
Additional Pillar 2 own funds requirement	1.75%
Capital conservation buffer	1.25%
O-SII buffer	0.33%
Mandatory minimum requirement for common equity Tier 1 capital ratio	**7.83%**

The countercyclical capital buffer will have to be added to the calculation of the SREP minimum capital ratio going forward. As this figure will be determined individually for each banking group on future reporting dates, there is currently no information available about the amount that will be involved in 2017.

At the same time, the SREP minimum capital ratio represents the regulatory minimum requirement for the Tier 1 capital ratio and the total capital ratio at the level of the DZ BANK banking group.

Based on current planning, it can be assumed that the group will comply with both the mandatory and the recommended SREP minimum capital ratios, including the countercyclical capital buffer.

7.4.3. O-SII capital buffer by 2019

BaFin has issued a decision under which, from 2017, the DZ BANK banking group must maintain an O-SII capital buffer within the meaning of section 10g (1) KWG, comprising common equity Tier 1 capital. The required buffer will change over time as follows:

– From January 1, 2017 to December 31, 2017: 0.33 percent
– From January 1, 2018 to December 31, 2018: 0.66 percent
– From January 1, 2019 onward: 1.0 percent.

7.4.4. Capital requirements for market risk

In the year under review, DZ BANK launched a design and implementation project to prepare for the new Basel standard on regulatory capital requirements for market risk, which is expected to come into force at the end of 2019. The bank will also closely monitor the process of transposing the Basel requirements into national law.

7.4.5. 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. In 2016, this work was further developed, with the involvement of the management units, to create a target scenario for the DZ BANK Group that was used to derive a step-by-step implementation plan that will enable the group to satisfy the main requirements by the end of 2018. The plan will be implemented in groupwide projects.

Bank sector

8. Credit risk

8.1. Definition and causes

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 sale and repurchase agreements, referred to below 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 is 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.

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. Causes

Credit risk from traditional lending business arises primarily at DZ BANK, BSH, DG HYP, DVB, TeamBank, and WL BANK. 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.

Credit risk relating to trading transactions arises from issuer risk, particularly in connection with the trading activities and investment business of DZ BANK, BSH, DG HYP, and WL BANK. 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 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.

As a result of the merger, additions have been made at DZ BANK in relation to the real estate lending business and treasury activities. At Bank sector level, the minimum credit rating requirements for the joint credit business with the local cooperative banks have been aligned. The size requirements for corporate customers and banks have also been extended and the general conditions for commercial and retail real estate finance harmonized.

8.3. Organization, responsibility, and risk reporting

Responsibilities in the lending process have been defined 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. Decisionmaking 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 the active management of credit risk.

As part of the **credit risk report**, the Group Risk and Finance Committee is kept 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

Characteristics of the rating systems

The generation of internal credit ratings for the business partners of entities in the Bank sector helps, in particular, to provide a solid basis for lending decisions as part of the management of individual transactions. 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.

Numerous rating systems were developed jointly by DZ BANK (pre-merger) and the former WGZ BANK and were already in use as standard in both banks prior to the merger. Given the standardized use, together with the representativity and comparability of the rating systems, the joint central institution received approval from the supervisory authority also to apply the jointly developed rating systems in the version used by pre-merger DZ BANK to determine the regulatory capital requirement for the portfolio of the former WGZ BANK.

DZ BANK primarily uses VR rating systems as part of 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. 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 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. The rating systems for open-ended real estate funds and for commercial real estate used by the former WGZ BANK Group are also used for internal management purposes.

Most of the other entities in the Bank sector also 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 of rating systems

The overhaul of the rating system used by DZ BANK for project finance continued in the year under review and is expected to be completed in 2017. Work also began on 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. In addition, the development of the rating system for insurers was completed in 2016 and the system has now been introduced. An IRB approach assessment for approval purposes is scheduled for 2017. The enhancement of the rating system for banks was also completed in 2016. A supervisory assessment of the IRB approach followed by approval from the banking supervisor is still required before the rating system can be introduced.

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.

Figure 22 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.

FIG. 22 – BANK SECTOR: DZ BANK'S VR CREDIT RATING MASTER SCALE AND EXTERNAL CREDIT RATINGS

		External rating classes			
Internal rating class	Average default probability	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				

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. Pricing in the lending business

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 individual transactions reflect the particular features of the product or business concerned.

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 allowances for losses on loans and advances 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. 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 allowances for losses on loans and advances.

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.

8.4.4. 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.

Replacement risk on bilateral, over-the-counter (OTC) derivatives is calculated on the basis of fair value and the add-on for an individual transaction. The add-on takes into account specific risk factors and residual maturities. With regard to exchange-traded derivatives and OTC derivatives settled via a central counterparty (client clearing), the replacement risk vis-à-vis the customer in customer brokerage business and client clearing consists of the actual collateral exchanged (the variation margin and the initial margin), the fair value, and additional collateral requirements. To calculate the replacement risk vis-à-vis stock exchanges, central counterparties, and clearing brokers 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 amount at risk is deemed to be the amount owed, i.e. the amount actually due to be paid by the counterparty to the bank. 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** 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 related to credit ratings or, in certain circumstances, a general limit is determined for each issuer as the basis for managing issuer risk. There is a separate limit for covered bonds that are subject to special public supervision in accordance with article 52 (4) of the EU's Directive 2009/65. The main subsidiaries have their own comparable limit systems.

The issuer risk in the investment book of the former WGZ BANK's treasury 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.

8.4.5. 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 in 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 only permitted 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 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.

In addition, the 'minimum requirements for bilateral reverse repos and securities lending transactions' exclude prohibited concentrations and correlations and specify collateral quality depending on the credit rating of the counterparties. In addition to daily monitoring of the relevant rules and regulations, a semi-annual report is prepared for the Credit Committee that presents the remaining concentration risk and wrong-way risk.

If material specific wrong-way risk occurs in connection with a bilateral OTC trading transaction, it is taken into account when the exposure is calculated and the Credit Committee is notified.

Furthermore, specific wrong-way risk in connection with **credit derivatives** in which the counterparty and underlying instrument form part of the financial sector is notified to the Credit Committee in a quarterly report.

8.4.6. Mitigating credit risk

Collateral strategy and secured transactions

In accordance with the credit risk strategy, **customer credit quality** forms the 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. Decisions to protect transactions against default risk are made on a case-by-case basis, the protection taking the form of traditional collateral.

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, 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 matters concerning collateral.

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 policy on collateral 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 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 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').

Central counterparties

The European Market Infrastructure Regulation (EMIR), which covers OTC derivatives, central counterparties, and trade repositories, 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 trade 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 the 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.

8.4.7. 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 subportfolio 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 subportfolios 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 allowances for losses on loans and advances

The following descriptions apply to DZ BANK. The main subsidiaries in the Bank sector have implemented comparable guidelines on the recognition of allowances for losses on loans and advances adapted in line with their respective business activities.

The entire transaction is deemed to be '**past due**' if interest payments, repayments of principal, or other receivables are more than 1 day in arrears. A borrower is classified as in '**default**' if the borrower is not expected to meet his/her payment obligations in full without the need for action such as the recovery of any available collateral. Regardless of this definition, a borrower is classified as in default according to CRR criteria if payments are past due by more than 90 days.

If there is objective evidence that the value of repayments under **loans** is impaired, a review is carried out to establish whether it is likely that the borrower will not meet his/her contractual obligations in full and whether a financial loss could be incurred. **Specific loan loss allowances** are recognized for the difference between the carrying amount of the loan or advance and the net present value of the anticipated payments (including any proceeds from the recovery of collateral), if the carrying amount of the loan or advance is higher than the net present value.

Provisions for loan commitments and **liabilities under financial guarantee contracts** are recognized in an amount equivalent to the difference between the present value of the potential default amount and the present value of expected payments, provided that it is probable the obligation will actually be incurred.

If no specific allowances are recognized for losses on payments due under loans or if there are no provisions for loan commitments or liabilities under financial guarantee contracts, then these transactions are taken into account in the recognition of the **portfolio loan loss allowance**. Portfolio loan loss allowances consist of the loss allowances for the portfolio of loans and advances, provisions for loan commitments, and liabilities under financial guarantee contracts. As soon as an impairment becomes apparent or a transaction is identified as requiring a provision or liability, it is derecognized from the portfolio allowance and recognized as a specific loan loss allowance. The calculation of the portfolio loan loss allowance is based on the method for the calculation of expected losses used for regulatory purposes.

Latent country risk is recognized in the portfolio loan loss allowances.

In **trading units**, derivatives business and parts of the securities and money market business are measured at fair value through profit or loss. Any impairment is therefore immediately recognized in the income statement and on the balance sheet, precluding the need for the recognition of any allowances for losses on loans and advances. For securities and money market placements that are recognized at amortized cost or fair value through other comprehensive income, impairment losses are determined using the same procedure as that for loans.

BSH and TeamBank recognize **specific loan loss allowances evaluated on a group basis** for their retail business. These specific loan loss allowances evaluated on a group basis are based on cash flows from credit portfolios with the same risk characteristics analyzed using migration scenarios and probabilities of default. At BSH, specific loan loss allowances include, in particular, specific loan loss allowances evaluated on a group basis.

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:

- Loan loss allowance ratio (balance of allowances for losses on loans and advances as a proportion of total lending volume)
- Risk cover ratio (balance of allowances for losses on loans and advances 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 balance of allowances for losses on loans and advances is calculated as the total of specific loan loss allowances, portfolio loan loss allowances, provisions for loan commitments, and liabilities under financial guarantee contracts.

8.4.8. Credit-portfolio management

In risk-related credit-portfolio management, a distinction is made between the expected loss and unexpected loss arising from the credit portfolio as a whole. The calculation of an expected loss for each individual transaction prevents a creeping erosion of equity. Most of the management units determine the standard risk costs necessary for this calculation. These costs vary according to credit rating.

Credit portfolio models are also used together with value-at-risk methods to quantify unexpected losses that may arise from the credit portfolios of management units. Credit value-at-risk describes the risk of unexpected losses arising should a default event occur in the credit portfolio. Credit portfolio models are used to measure the credit value-at-risk. Key factors in determining this credit risk include the lending volume, concentrations in terms of sectors, countries, and/or counterparties, and the credit quality structure of the credit portfolio. The measurement includes credit risk from both lending and trading businesses.

The credit portfolio in the Bank sector is managed by limiting the credit value-at-risk to the upper loss limit set for credit risk.

8.5. Lending volume

8.5.1. Lending volume as risk factor

The amount and structure of the lending volume are key factors in determining the credit risk. For the purposes of internal credit risk management in the Bank sector, the lending volume is broken down by credit-risk-bearing instruments – 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 instrument.

The credit-risk-bearing instruments are also 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.

8.5.2. Reconciliation of lending volume to the consolidated financial statements

Figure 23 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.

8.5.3. Change in lending volume

As a result of the merger with the former WGZ BANK Group and the associated inclusion of WL BANK for the first time, the **total lending volume** of the **Bank sector** rose sharply, by 28 percent, from €302.3 billion as at December 31, 2015 to €387.7 billion as at December 31, 2016. Unless stated otherwise, the following increases in exposures and risk are attributable to effects from the merger.

There was an increase in the volume of **traditional lending business**, which rose from €209.8 billion as at December 31, 2015 to €275.8 billion at the end of 2016, a gain of 31 percent.

The lending volume in the **securities business** was up by 22 percent, from €78.4 billion as at December 31, 2015 to €95.5 billion as at December 31, 2016. This increase was largely attributable to DZ BANK and the first-time inclusion of WL BANK.

At €16.3 billion, the lending volume in the **derivatives and money market business** was up by 16 percent as at December 31, 2016 compared with the figure of €14.0 billion as at December 31, 2015.

At **DZ BANK**, the **total lending volume** rose by 30 percent, from €158.0 billion as at December 31, 2015 to €205.8 billion as at December 31, 2016. This increase arose in particular from the **traditional lending business** (December 31, 2016: €136.1 billion; December 31, 2015: €104.0 billion) and the **securities business** (December 31, 2016: €54.5 billion; December 31, 2015: €41.7 billion). The lending volume in the **derivatives and money market business** advanced by 23 percent, from €12.3 billion at the end of 2015 to €15.1 billion as at December 31, 2016. This gain was generated by the derivatives business.

8.5.4. Collateral called in

Given the efficiency of the workout process in the **Bank sector**, the role played by calling in collateral during the course of workout procedures for non-performing borrowers was as negligible in 2016 as it had been in 2015. The collateral called in by the entities in the Bank sector amounted to €13 million as at December 31, 2016 (December 31, 2015: €18 million).

8.5.5. Sector structure of the credit portfolio

Figure 24 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, 2016, a significant proportion (33 percent) of the lending volume in the **Bank sector** continued to be concentrated in the financial sector (December 31, 2015: 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, 2016, a significant proportion (55 percent) of **DZ BANK's** lending volume was also concentrated in the financial sector (December 31, 2015: 57 percent). The composition of this customer segment is the same both at DZ BANK and in the

FIG. 23 – BANK SECTOR: RECONCILIATION OF THE LENDING VOLUME

€ billion

	Lending volume for internal management accounts		Reconciliation			
			Scope of consolidation		Carrying amount and measurement	
	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Traditional lending business	275.8	209.8	1.8	1.9	18.8	9.6
Securities business	95.5	78.4	–	–	-18.4	-15.3
Derivatives business	13.7	10.6	–	–	-17.5	-13.8
Money market business	2.6	3.5	–	–	37.4	27.2
Total	387.7	302.3	1.8	1.9	20.3	7.8

Not relevant

FIG. 24 – BANK SECTOR: LENDING VOLUME, BY SECTOR

€ billion	Traditional lending business		Securities business		Derivatives and money market business		Total	
	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Financial sector	88.7	68.2	28.2	26.8	11.5	9.7	128.4	104.7
Public sector	11.1	6.2	54.5	45.4	1.0	0.8	66.6	52.4
Corporates	110.4	84.0	8.6	2.3	2.9	2.6	122.0	88.9
Retail	58.6	45.6	2.8	2.9	–	–	61.4	48.6
Industry conglomerates	6.5	5.4	1.4	1.1	0.9	0.8	8.8	7.2
Other	0.5	0.5	–	–	–	–	0.5	0.5
Total	275.8	209.8	95.5	78.4	16.3	14.0	387.7	302.3

Dec. 31, 2016		Dec. 31, 2015		Lending volume for the consolidated financial statements	Note
292.9	**79.5**	221.3	**65.8**	**Loans and advances to banks**	
	79.5		65.9	of which: loans and advances to banks excluding money market placements	50
	–		-0.1	of which: allowances for losses on loans and advances to banks	52
	173.1		**124.2**	**Loans and advances to customers**	
	175.5		126.2	Loans and advances to customers excluding money market placements	51
	-2.4		-2.0	of which: allowances for losses on loans and advances to customers	52
	40.3		**31.3**	**Financial guarantee contracts and loan commitments**	**87**
77.2	**77.2**	63.2	**63.2**	**Bonds and other securities**	
	9.3		10.9	of which: financial assets held for trading/bonds excluding money market placements	54
	0.9		0.8	of which: financial assets held for trading/promissory notes, registered bonds, and loans and advances	54
	67.0		51.5	of which: investments/bonds excluding money market placements	55
-3.9	**-3.9**	-3.3	**-3.3**	**Derivatives**	
	1.5		0.4	of which: derivatives used for hedging (positive fair values)	53
	23.6		21.7	of which: financial assets held for trading/derivatives (positive fair values)	54
	-3.9		-1.6	of which: derivatives used for hedging (negative fair values)	65
	-25.1		-23.7	of which: financial liabilities held for trading/derivatives (negative fair values)	66
43.6	**43.6**	30.7	**30.7**	**Money market placements**	
	27.7		14.9	of which: loans and advances to banks/money market placements	50
	1.1		0.6	of which: loans and advances to customers/money market placements	51
	0.2		0.4	of which: financial assets held for trading/money market instruments	54
	14.2		14.7	of which: financial assets held for trading/money market placements	54
	0.4		0.1	of which: investments/money market instruments	55
409.8		**312.0**		**Total**	

Balance as at Dec. 31, 2016	**22.1**	**5.7%**
Balance as at Dec. 31, 2015	9.7	3.2%

Bank sector. Loans and advances to public-sector borrowers rose by €3.4 billion year on year, with a particularly large increase in Germany.

In its role as a 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, DG HYP and DVB's direct business with corporate customers in Germany and abroad, the retail real-estate business under the umbrella of BSH, TeamBank's consumer finance business, and WL BANK's real estate lending and local authority loans businesses determine the sectoral breakdown of the remainder of the portfolio.

8.5.6. Geographical structure of the credit portfolio

Figure 25 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, 2016, 95 percent of the lending in the **Bank sector** (December 31, 2015: 94 percent) and 96 percent of the total lending by **DZ BANK** (December 31, 2015: 95 percent) was concentrated in Germany and other industrialized countries.

8.5.7. Residual maturity structure of the credit portfolio

Residual maturities in the overall credit portfolio

The breakdown of the credit portfolio by residual maturity presented in figure 26 for the **Bank sector** as at December 31, 2016 shows that the lending volume had increased by €7.1 billion in the short-term maturity band compared with the figure as at December 31, 2015. The increase in the medium-term maturity band amounted to €17.2 billion. The biggest leap in lending volume was in the longer-term maturity band, where the figure rose by €61.1 billion.

Lending volume past due but not impaired

Figures 27 and 28 show the portion of the lending volume that is past due but not impaired. The disclosures largely relate to traditional lending business.

No valuation allowances are recognized for these loans because it can generally be assumed that the amounts past due will be repaid promptly. Furthermore, it can be assumed that the entire amounts due under the lending agreements concerned can be collected by recovering collateral. Because of the conservative risk provisioning policy of the entities in the Bank sector, past-due loans only account for a relatively small proportion of the overall credit portfolio.

In the **Bank sector**, the rise in loans in the corporates sector that were past due but not impaired, which went up from €522 million as at December 31, 2015 to €1,134 million as at December 31, 2016, was largely attributable to DVB's shipping and offshore businesses. In the retail sector, the increase from €61 million at the end of 2015 to €388 million as at the reporting date

FIG. 25 – BANK SECTOR: LENDING VOLUME, BY COUNTRY GROUP

	Traditional lending business		Securities business		Derivatives and money market business		Total	
€ billion	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Germany	232.9	168.8	60.3	52.3	10.7	8.8	303.8	229.8
Other industrialized countries	29.5	27.5	31.3	22.7	5.1	4.7	65.8	54.9
Advanced economies	3.5	4.2	0.5	0.6	0.1	0.1	4.1	4.9
Emerging markets	9.9	9.3	0.8	0.7	0.1	0.2	10.9	10.2
Supranational institutions	–	–	2.7	2.2	0.4	0.3	3.0	2.5
Total	**275.8**	**209.8**	**95.5**	**78.4**	**16.3**	**14.0**	**387.7**	**302.3**

FIG. 26 – BANK SECTOR: LENDING VOLUME, BY RESIDUAL MATURITY

	Traditional lending business		Securities business		Derivatives and money market business		Total	
€ billion	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
≤ 1 year	49.9	44.0	15.0	15.3	11.0	9.5	75.9	68.8
> 1 year to ≤ 5 years	55.2	47.3	38.5	29.4	2.1	1.8	95.8	78.6
> 5 years	170.7	118.5	42.1	33.7	3.3	2.7	216.0	154.9
Total	**275.8**	**209.8**	**95.5**	**78.4**	**16.3**	**14.0**	**387.7**	**302.3**

was due to a change in the method of calculation used at BSH. The rise shown therefore does not mean that the portfolio has deteriorated. The past-due loans in arrears by more than 3 months amounting to €812 million (December 31, 2015: €237 million) were predominantly loans secured by mortgages.

At **DZ BANK**, the volume of loans that were past due but not impaired fell from €87 million as at December 31, 2015 to €61 million as at December 31, 2016.

8.5.8. Rating structure of the credit portfolio

Rating structure of the total lending volume

Figure 29 shows the Bank sector's consolidated lending volume by rating class according to the VR credit rating master scale. 'Not rated' comprises counterparties for which a rating classification is not required.

In the **Bank sector**, the proportion of the total lending volume accounted for by rating classes 1A to 3A (investment grade) was 78 percent as at December 31, 2016 (December 31, 2015: 74 percent). Rating classes 3B to 4E (non-investment grade) represented 20 percent of the total lending volume as at the reporting date (December 31, 2015: 23 percent). Defaults in rating classes 5A to 5E accounted for 1 percent of the Bank sector's total lending volume as at December 31, 2016 and thus remained at the low level of the previous year.

Rating classes 1A to 3A (investment grade) also dominated lending at **DZ BANK**, where they accounted for 89 percent of the total lending volume (December 31, 2015: 88 percent). Rating classes 3B to 4E (non-investment grade) represented 10 percent of the total lending volume as at the reporting date, which was unchanged compared with the end of 2015. Defaults (rating classes 5A to 5E) accounted for 1 percent of the total lending volume as at December 31, 2016, which was again largely unchanged year on year.

FIG. 27 – BANK SECTOR: LENDING VOLUME PAST DUE BUT NOT IMPAIRED, BY SECTOR

	Past due up to 5 days		Past due > 5 days to 1 month		Past due > 1 month to 2 months		Past due > 2 months to 3 months		Past due > 3 months		Total	
€ million	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Financial sector	13	9	1	–	–	1	–	–	–	5	14	15
Public sector	–	–	–	1	–	–	–	–	–	–	–	1
Corporates	18	22	301	244	127	31	5	10	684	215	1,134	522
Retail	37	18	123	18	63	6	38	2	128	17	388	61
Industry conglomerates	9	3	–	–	–	–	–	–	–	–	9	4
Other	–	–	–	–	–	–	–	–	–	–	–	–
Total	**76**	53	**425**	263	**190**	39	**42**	13	**812**	237	**1,545**	603

FIG. 28 – BANK SECTOR: LENDING VOLUME PAST DUE BUT NOT IMPAIRED, BY COUNTRY GROUP

	Past due up to 5 days		Past due > 5 days to 1 month		Past due > 1 month to 2 months		Past due > 2 months to 3 months		Past due > 3 months		Total	
€ million	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Germany	64	43	201	69	91	39	42	13	188	70	585	233
Other industrialized countries	10	2	224	42	1	–	1	–	175	52	410	96
Advanced economies	3	1	–	60	29	–	–	–	217	43	248	104
Emerging markets	–	7	–	92	69	–	–	–	233	71	302	170
Supranational institutions	–	–	–	–	–	–	–	–	–	–	–	–
Total	**76**	53	**425**	263	**190**	39	**42**	13	**812**	237	**1,545**	603

FIG. 29 – BANK SECTOR: LENDING VOLUME, BY RATING CLASS

€ billion		Traditional lending business		Securities business		Derivatives and money market business		Total	
		Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Investment grade	1A	6.1	1.8	38.4	26.9	1.4	1.2	45.9	30.0
	1B	2.5	1.8	10.1	10.3	1.9	1.1	14.5	13.3
	1C	82.5	63.9	9.2	11.8	4.3	3.9	96.0	79.6
	1D	4.8	2.3	2.4	2.6	0.2	0.3	7.5	5.2
	1E	7.0	2.3	2.2	1.3	1.9	0.4	11.1	4.0
	2A	12.7	7.8	2.5	1.7	0.7	2.0	16.0	11.5
	2B	11.7	6.2	10.4	8.5	1.9	1.5	24.0	16.2
	2C	14.5	11.6	4.8	2.4	0.9	0.9	20.2	15.0
	2D	15.6	9.1	2.5	3.0	0.7	0.7	18.8	12.8
	2E	21.4	16.5	7.2	4.2	1.0	0.8	29.6	21.5
	3A	17.3	12.8	1.4	0.8	0.7	0.3	19.3	13.9
Non-investment grade	3B	17.5	16.8	0.6	0.6	0.2	0.3	18.3	17.7
	3C	16.4	11.6	1.3	1.6	0.1	0.1	17.8	13.3
	3D	13.9	13.5	0.8	0.6	0.1	0.1	14.8	14.2
	3E	4.6	3.5	0.2	0.1	–	–	4.9	3.6
	4A	2.3	2.8	0.1	0.1	–	–	2.4	2.9
	4B	7.2	6.9	0.2	0.2	–	–	7.4	7.1
	4C	6.2	5.5	0.1	0.1	–	–	6.3	5.6
	4D	0.6	0.6	–	–	–	–	0.6	0.6
	4E	3.8	4.5	0.1	0.1	–	–	3.9	4.6
Default		5.6	5.0	0.2	0.2	–	–	5.8	5.2
Not rated		1.7	2.8	0.8	1.2	0.4	0.4	2.8	4.5
Total		**275.8**	**209.8**	**95.5**	**78.4**	**16.3**	**14.0**	**387.7**	**302.3**

Single borrower concentrations

As at December 31, 2016, the 10 counterparties associated with the largest lending volumes accounted for 9 percent of total lending in the **Bank sector** (December 31, 2015: 11 percent). The equivalent proportion for **DZ BANK** was also 9 percent (December 31, 2015: 11 percent). These counterparties largely comprised financial-sector and public-sector borrowers domiciled in Germany with an investment-grade rating.

Investment-grade lending volume

Figures 30 and 31 show the lending volume that is neither impaired nor past due, i.e. the investment-grade proportion of the total credit portfolio.

In the **Bank sector**, the proportion of the total lending volume represented by this portfolio as at December 31, 2016 was 98 percent, unchanged on December 31, 2015.

The situation was similar at **DZ BANK**, where the proportion of the total lending volume with an investment-grade rating was unchanged year on year at 99 percent as at December 31, 2016.

As in previous years, the large proportion of investmentgrade business is attributable to the risk-conscious lending policy pursued by the entities in the Bank sector.

8.5.9. Collateralized lending volume

Figure 32 shows the breakdown of the collateralized lending volume at overall portfolio level by type of collateral and class of risk-bearing instrument. In the case of traditional lending business, figures are generally reported before the application of any offsetting agreements, whereas the collateralized exposure in the securities business and derivatives and money market business is shown net.

As at December 31, 2016, the collateralized lending volume in the **Bank sector** had risen to €116.2 billion from €90.4 billion as at December 31, 2015. The

FIG. 30 – BANK SECTOR: LENDING VOLUME NEITHER IMPAIRED NOR PAST DUE, BY SECTOR

	Total portfolio		Portfolio neither impaired nor past due	
€ billion	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Financial sector	128.4	104.7	128.3	104.5
Public sector	66.6	52.4	66.6	52.4
Corporates	122.0	88.9	117.3	85.4
Retail	61.4	48.6	60.2	47.5
Industry conglomerates	8.8	7.2	8.8	7.2
Other	0.5	0.5	0.5	0.5
Total	**387.7**	302.3	**381.7**	297.4

FIG. 31 – BANK SECTOR: LENDING VOLUME NEITHER IMPAIRED NOR PAST DUE, BY COUNTRY GROUP

	Total portfolio		Portfolio neither impaired nor past due	
€ billion	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Germany	303.8	229.8	300.7	227.1
Other industrialized countries	65.8	54.9	64.2	53.9
Advanced economies	4.1	4.9	3.7	4.4
Emerging markets	10.9	10.2	10.1	9.6
Supranational institutions	3.0	2.5	3.0	2.5
Total	**387.7**	302.3	**381.7**	297.4

FIG. 32 – BANK SECTOR: COLLATERALIZED LENDING VOLUME, BY TYPE OF COLLATERAL

	Traditional lending business		Securities business		Derivatives and money market business		Total	
€ billion	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Guarantees, indemnities, risk subparticipation	7	6.9	–	–	0.3	0.3	7.3	7.3
Credit insurance	3	2.7	–	–	–	–	3.1	2.7
Land charges, mortgages, ship mortgages	98.0	72.7	–	–	–	–	98.0	72.8
Pledged loans and advances, assignments, other pledged assets	5.8	5.3	–	–	–	–	5.8	5.3
Financial collateral	1.5	1.6	–	–	0.1	0.3	1.6	1.9
Other collateral	0.4	0.4	–	–	–	–	0.4	0.4
Collateralized lending volume	**115.7**	89.7	**–**	–	**0.5**	0.7	**116.2**	90.4
Gross lending volume	275.8	209.8	95.5	78.4	16.3	14.0	387.7	302.3
Uncollateralized lending volume	**160.1**	120.1	**95.5**	78.4	**15.8**	13.3	**271.5**	211.9
Collateralization rate	**41.9%**	42.7%	**–**	–	**3.0%**	5.2%	**30.0%**	29.9%

collateralization rate was 30.0 percent at the reporting date (December 31, 2015: 29.9 percent).

In the Bank sector's **traditional lending business**, most of the collateralized lending volume – 85 percent as at December 31, 2016 (December 31, 2015: 81 percent) – was accounted for by lending secured by charges over physical assets such as land charges, mortgages, and registered ship mortgages. These types of collateral are particularly important for BSH, DG HYP, DVB, and WL BANK. 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.

In **securities transactions**, there is generally no further collateralization to supplement the hedging activities already taken into account. Equally, in the **derivatives and money market business**, collateral received under collateral agreements is already factored into the

calculation of gross lending volume with the result that only a comparatively low level of collateral (personal and financial collateral) is then additionally reported.

At €12.4 billion, **DZ BANK's** collateralized lending volume at December 31, 2016 was up year on year (December 31, 2015: €7.5 billion). The collateralization rate was 6 percent at the reporting date (December 31, 2015: 5 percent).

In terms of traditional collateral, **securities transactions** are generally concluded on an unsecured basis. A low level of personal collateral (guarantees and indemnity agreements) and financial collateral is used to mitigate risk in **derivatives and money market business**.

8.5.10. Securitizations

The asset-backed securities (ABS) portfolio in the Bank sector is predominantly held by DZ BANK and DG HYP. It had a fair value of €3,430 million as at the reporting date (December 31, 2015: €3,528 million). This includes the ABS wind-down portfolio dating back to the period before the financial crisis, which had a fair value of €2,474 million (December 31, 2015: €2,851 million).

The changes in the wind-down portfolio in 2016 were largely in line with 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 asset-backed commercial paper or liquidity lines. The ABCP programs are made available for DZ BANK customers who then securitize their own assets via these companies.

8.6. Portfolios with increased risk content

The following disclosures relating to exposures in subportfolios also form part of the above analyses of the entire credit portfolio. However, these subportfolios have been analyzed separately because of their significance for the risk position.

Due to the reduction of the lending exposure in **Russia** and **Hungary**, these countries have no longer been included in the portfolios with increased risk content. Their credit ratings have not changed. This section of the report therefore no longer includes disclosures relating to the Russian and Hungarian lending exposures, which were last presented in section 8.6.1. of the 2015 opportunity and risk report.

8.6.1. European sovereign debt portfolio

As at December 31, 2016, loans and advances to borrowers in the countries directly affected by the **European sovereign debt crisis** attributable to the **Bank sector** and to **DZ BANK** amounted to €8,721 million (December 31, 2015: €8,095 million) and €2,670 million (December 31, 2015: €3,196 million) respectively. The increase in the lending exposure to the Italian public sector to €2,920 million as at December 31, 2016 was caused by the inclusion of WL BANK for the first time.

As a result of the improvement in the credit ratings for counterparties in Ireland, the lending exposure for this country has not been shown separately in internal risk reporting since the start of the reporting year. Consequently, the total lending volume in respect of the eurozone periphery countries as at December 31, 2015 disclosed in this opportunity and risk report differs from the corresponding amount in the 2015 opportunity and risk report. Figure 33 shows the borrower structures of the entities in the Bank sector for the eurozone periphery countries by credit-risk-bearing instrument.

8.6.2. Shipping finance portfolio

Background

DVB is the main entity in the Bank sector that engages in shipping finance. DZ BANK also has this type of finance in its credit portfolio, but the proportion is significantly lower than at DVB.

DVB operates at an international level and offers finance for various means of transport, such as ships, aircraft, offshore service vessels, drilling platforms, and rail transport rolling stock. Criteria for granting shipping loans include 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 financing arrangements for which the financed ship can be used as collateral.

FIG. 33 – 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, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Portugal	**117**	106	**1,017**	741	**–**	–	**1,134**	847
of which: public sector	–	–	894	645	–	–	894	645
of which: non-public sector	117	106	122	96	–	–	240	202
of which: financial sector	25	–	3	4	–	–	28	5
Italy	**190**	209	**3,468**	2,563	**15**	17	**3,673**	2,790
of which: public sector	–	–	2,920	2,088	–	–	2,920	2,088
of which: non-public sector	190	209	548	475	15	17	753	702
of which: financial sector	33	31	144	213	14	15	192	259
Greece	**13**	41	**–**	–	**–**	–	**13**	41
of which: public sector	–	–	–	–	–	–	–	–
of which: non-public sector	13	41	–	–	–	–	13	41
of which: financial sector	–	–	–	–	–	–	–	–
Spain	**319**	336	**3,555**	4,055	**26**	26	**3,901**	4,416
of which: public sector	26	33	2,132	1,875	–	–	2,158	1,908
of which: non-public sector	293	303	1,423	2,180	26	26	1,742	2,509
of which: financial sector	39	20	575	1,370	21	22	636	1,412
Total	**639**	692	**8,040**	7,360	**41**	43	**8,721**	8,095
of which: public sector	26	33	5,947	4,609	–	–	5,973	4,641
of which: non-public sector	613	659	2,093	2,751	41	43	2,748	3,453
of which: financial sector	98	51	722	1,588	36	37	855	1,675

1 Unlike the other presentations of lending volume, traditional lending business in this case includes long-term equity investments.

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, the finance 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.

At DVB and DZ BANK, the lending volume associated with shipping finance comprises loans and advances to customers, guarantees and indemnities, irrevocable loan commitments, securities, and derivatives.

Change in lending volume

As at December 31, 2016, the Bank sector's shipping finance portfolio had a value of €12,763 million (December 31, 2015: €12,684 million). Figure 34 shows the portfolio structure by country group and credit-risk-bearing instrument.

As at December 31, 2016, **DVB's** shipping finance portfolio comprised finance provided for 1,420 vessels and 0.4 million containers (December 31, 2015: 1,328 vessels and 0.5 million containers). The average exposure as at the reporting date was €40 million (December 31, 2015: €41 million) and the largest single exposure was €237 million (December 31, 2015: €213 million).

FIG. 34 – BANK SECTOR: SHIPPING FINANCE LENDING VOLUME, BY COUNTRY GROUP

	Traditional lending business		Securities business		Derivatives business		Total	
€ million	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Germany	1,504	1,588	–	–	3	12	1,507	1,599
Other industrialized countries	7,453	7,004	–	–	5	15	7,458	7,020
Advanced economies	1,907	2,173	–	–	–	–	1,907	2,173
Emerging markets	1,885	1,883	–	–	5	8	1,890	1,892
Total	12,749	12,649	–	–	14	35	12,763	12,684

DVB's total exposure as at December 31, 2016 amounted to €11,948 million compared with €11,789 million as at December 31, 2015. The increase was attributable to exchange rate fluctuations (appreciation of the US dollar). The shipping finance portfolio was broadly diversified in terms of geographical region, type of vessel, borrower, charterer, and shipping activity. The largest proportion of the volume lent was attributable to the financing of tankers. As at December 31, 2016, this proportion had risen by 2 percentage points to 48 percent of the total volume of shipping finance. The increase related to the crude oil tanker, chemical tanker, and gas tanker segments of the shipping market, while the proportion of the portfolio attributable to product tankers as at December 31, 2016 was virtually unchanged year on year at 11 percent. The portfolio was almost fully collateralized in compliance with DVB strategy.

The current overcapacity in some shipping sectors, mainly in the bulk freighter and container ship sectors, continued to be the source of downward pressure on ship asset values and charter rates. There is likely to be an overall rise in default rates in the shipping industry because liquidity reserves have been exhausted. In view of this trend, the additions to allowances for losses on loans and advances in the shipping business were increased in the year under review.

DZ BANK's shipping finance exposures amounted to €815 million as at December 31, 2016 (December 31, 2015: €895 million). Broken down by type of ship, the portfolio was focused mainly on multifunctional merchant vessels and, in terms of carrying capacity, comprised almost exclusively small- to medium-sized vessels. As in 2015, DZ BANK's shipping finance portfolio in 2016 was mainly concentrated in Germany but broadly diversified by type of vessel, borrower, charterer, and shipping activity.

8.7. Non-performing lending volume

8.7.1. Impaired lending volume

Figures 35 and 36 show the impaired lending volume. The collateral shown is available for securing the lending volume after specific loan loss allowances. The disclosures largely relate to traditional lending business.

As at December 31, 2016, the **Bank sector's** lending volume after allowances for loans and advances amounted to €2,622 million, which was virtually unchanged on the figure of €2,623 million as at December 31, 2015.

At **DZ BANK**, the impaired lending volume rose from €795 million as at December 31, 2015 to €835 million as at December 31, 2016. This increase was almost entirely the result of a higher volume of impaired loans to corporates.

8.7.2. Volume of non-performing loans

Because the volume of non-performing loans reported for the **Bank sector** rose from €5.2 billion to €5.8 billion during 2016, while the total lending volume also increased from €302.3 billion to €387.7 billion, the NPL ratio had gone down to 1.5 percent at the end of 2016 (December 31, 2015: 1.7 percent).

At **DZ BANK**, there was also an increase in the volume of impaired loans, which went up from €1.9 billion as at December 31, 2015 to €2.3 billion as at the 2016 balance sheet date. As a result of this change, and because the total lending volume had grown from

FIG. 35 – BANK SECTOR: IMPAIRED LENDING VOLUME AND COLLATERAL, BY SECTOR

	Amount before specific loan loss allowances		Specific loan loss allowances		Amount after specific loan loss allowances		Collateral	
€ million	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Financial sector	81	148	41	46	40	102	31	66
Public sector	–	–	–	–	–	–	–	–
Corporates	3,517	3,023	1,436	1,137	2,081	1,886	1,237	1,171
Retail	859	1,014	358	391	501	623	491	599
Industry conglomerates	2	18	1	6	1	12	–	11
Other	–	27	–	27	–	–	–	–
Total	**4,458**	**4,230**	**1,836**	**1,607**	**2,622**	**2,623**	**1,758**	**1,847**

FIG. 36 – BANK SECTOR: IMPAIRED LENDING VOLUME AND COLLATERAL, BY COUNTRY GROUP

	Amount before specific loan loss allowances		Specific loan loss allowances		Amount after specific loan loss allowances		Collateral	
€ million	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Germany	2,521	2,554	1,221	1,183	1,300	1,371	913	1,022
Other industrialized countries	1,226	918	365	239	861	679	459	352
Advanced economies	219	341	132	94	87	247	101	166
Emerging markets	492	417	118	91	374	326	285	308
Supranational institutions	–	–	–	–	–	–	–	–
Total	**4,458**	**4,230**	**1,836**	**1,607**	**2,622**	**2,623**	**1,758**	**1,847**

€158.0 billion to €205.8 billion, there was a slight year-on-year fall in the NPL ratio, which stood at 1.1 percent (December 31, 2015: 1.2 percent).

Figure 37 shows key figures relating to the volume of non-performing loans.

8.8. Allowances for losses on loans and advances

8.8.1. Allowances for losses on loans and advances in the total portfolio

Figures 38 and 39 show the change in the volume of allowances (specific loan loss allowances, including the specific loan loss allowances evaluated on a group basis, and portfolio loan loss allowances), the provisions for loan commitments, and liabilities under financial guarantee contracts in 2016 and 2015 for the entire credit portfolio of the Bank sector and DZ BANK.

FIG. 37 – BANK SECTOR: KEY FIGURES FOR THE VOLUME OF NON-PERFORMING LOANS

	Bank sector		DZ BANK	
€ billion	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Total lending volume	387.7	302.3	205.8	158.0
Volume of non-performing loans	5.8	5.2	2.3	1.9
Balance of allowances for losses on loans and advances	2.7	2.4	1.3	1.2
Loan loss allowance ratio	0.7%	0.8%	0.6%	0.7%
Risk cover ratio	47.0%	47.1%	57.4%	60.2%
NPL ratio	1.5%	1.7%	1.1%	1.2%

FIG. 38 – BANK SECTOR: ALLOWANCES FOR LOSSES ON LOANS AND ADVANCES IN THE TOTAL PORTFOLIO

	Specific loan loss allowances[1]		Portfolio loan loss allowances		Total loan loss allowances		Provisions for loan commitments[2] and liabilities under financial guarantee contracts	
€ million	2016	2015	2016	2015	2016	2015	2016	2015
Balance as at Jan. 1	1,607	1,908	466	480	2,073	2,388	148	167
Additions	908	666	218	95	1,126	761	117	48
Utilizations	-244	-377	–	–	-244	-377	–	–
Reversals	-416	-437	-139	-113	-555	-550	-71	-69
Interest income	-31	-45	–	–	-31	-45	2	2
Other changes	12	-108	13	4	25	-104	58	–
Balance as at Dec. 31	1,836	1,607	558	466	2,394	2,073	254	148
Directly recognized impairment losses	48	68	–	–	48	68		
Recoveries on loans and advances previously impaired	-116	-121	–	–	-116	-121		

1 Including specific loan loss allowances evaluated on a group basis.
2 Excluding other provisions for loans and advances.

Not relevant

FIG. 39 – BANK SECTOR: ALLOWANCES FOR LOSSES ON LOANS AND ADVANCES IN DZ BANK'S TOTAL PORTFOLIO

	Specific loan loss allowances		Portfolio loan loss allowances		Total loan loss allowances		Provisions for loan commitments and liabilities under financial guarantee contracts	
€ million	2016	2015	2016	2015	2016	2015	2016	2015
Balance as at Jan. 1	825	958	119	129	944	1,087	138	157
Additions	256	303	92	4	348	307	114	46
Utilizations	-103	-182	–	–	-103	-182	–	–
Reversals	-192	-261	-32	-14	-224	-275	-66	-68
Interest income	-10	-15	–	–	-10	-15	3	2
Other changes	10	22	–	–	10	22	53	1
Balance as at Dec. 31	786	825	179	119	965	944	242	138
Directly recognized impairment losses	–	4	–	–	–	4		
Recoveries on loans and advances previously impaired	-59	-71	–	–	-59	-71		

Not relevant

These items are disclosed for the Bank sector in the notes to the consolidated financial statements as follows:

- Loan loss allowances: note 52 (allowances for losses on loans and advances)
- Provisions for loan commitments: note 67 (provisions)
- Liabilities under financial guarantee contracts: note 69 (other liabilities).

Over the course of the reporting period, the **volume of specific loan loss allowances** in the **Bank sector**

rose by €229 million compared with December 31, 2015. This increase was primarily attributable to DVB's shipping and offshore businesses. Some of the increase was offset by decreases at DG HYP, TeamBank, and **DZ BANK** (€39 million). As at December 31, 2015, there had been a year-on-year contraction in the volume of specific loan loss allowances of €301 million in the Bank sector and €133 million at DZ BANK.

In the year under review, a net addition was made to the specific loan loss allowances in the **Bank sector**, including **DZ BANK**, taking into account the effects from the merger. The specific loan loss allowances recognized – mainly in corporate banking – were offset by reversals resulting from the continued success of efforts to aid the recovery of non-performing loans and recoveries from loans and advances previously impaired. Overall, the change in specific loan loss allowances – which also benefited from stable economic conditions – reflects the stability of the credit portfolio and the sustainable risk policy adopted by the entities in the Bank sector, including DZ BANK.

There was a net addition to **portfolio loan loss allowances** in the reporting year. The net addition in the **Bank sector** totaled €92 million (December 31, 2015: net reversal of €14 million), of which €60 million related to **DZ BANK** (December 31, 2015: net reversal of €10 million). The balance of these allowances at DVB and TeamBank also went up, although the equivalent balance at DG HYP was reduced.

The volume of **provisions for loan commitments and liabilities under financial guarantee contracts** likewise rose in 2016, both in the **Bank sector** (by €106 million; December 31, 2015: fall of €19 million) and at **DZ BANK** (by €104 million; December 31, 2015: fall of €19 million).

8.8.2. Allowances for losses on loans and advances in portfolios with increased risk content

The level of specific loan loss allowances for the Bank sector's exposure in the **peripheral countries of the eurozone** declined slightly in the year under review. The opening balance for the allowances for losses on loans and advances recognized for the peripheral eurozone countries was adjusted in the same way as the lending volume was adjusted in respect of Ireland. The reported opening balance as at January 1, 2016 was therefore different from the closing balance as at December 31, 2015 reported in the 2015 opportunity and risk report.

A net reversal was recognized for portfolio loan loss allowances in the reporting year, the largest contribution coming from DG HYP.

Additions of €207 million and €5 million were recognized for specific loan loss allowances and portfolio loan loss allowances respectively in relation to DVB's **shipping finance portfolio** in 2016 in view of the deterioration in international shipping markets, especially in the second half of the year. In contrast, the level of specific and portfolio loan loss allowances for the shipping finance portfolio at DZ BANK was reduced slightly.

Changes in the individual components of the allowances for losses on loans and advances for portfolios with increased risk content for 2016 and 2015 are shown in figure 40 (Bank sector) and in figure 41 (DZ BANK).

8.9. Risk position

The amount of capital required to cover 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, 2016, the **Bank sector's** risk capital requirement amounted to €4,472 million (December 31, 2015: €3,569 million), with an upper loss limit of €6,606 million (December 31, 2015: €4,860 million).

The rises in the risk capital requirement and upper loss limit were mainly due to the inclusion of the former WGZ BANK Group for the first time.

As at December 31, 2016, the risk capital requirement for **DZ BANK** was calculated at €1,577 million (December 31, 2015: €1,249 million), with an upper loss limit of €2,200 million (December 31, 2015: €1,600 million). Again, the higher values were largely attributable to the impact from the merger.

The risk capital requirements for the Bank sector and for DZ BANK were within the applicable upper loss limits at all times during the course of 2016.

FIG. 40 – BANK SECTOR: ALLOWANCES FOR LOSSES ON LOANS AND ADVANCES FOR PORTFOLIOS WITH INCREASED RISK CONTENT

	Specific loan loss allowances[1]		Portfolio loan loss allowances		Total loan loss allowances		Provisions for loan commitments[2] and liabilities under financial guarantee contracts	
€ million	2016	2015	2016	2015	2016	2015	2016	2015
Eurozone periphery countries								
Balance as at Jan. 1	13	8	14	20	27	29	–	–
Balance as at Dec. 31	10	13	10	14	20	27	–	–
Shipping finance								
Balance as at Jan. 1	327	349	43	39	369	388	2	4
Balance as at Dec. 31	510	327	46	43	556	369	–	2

1 Including specific loan loss allowances evaluated on a group basis.
2 Excluding other provisions for loans and advances.

FIG. 41 – BANK SECTOR: ALLOWANCES FOR LOSSES ON LOANS AND ADVANCES FOR PORTFOLIOS WITH INCREASED RISK CONTENT, DZ BANK

	Specific loan loss allowances		Portfolio loan loss allowances		Total loan loss allowances		Provisions for loan commitments and liabilities under financial guarantee contracts	
€ million	2016	2015	2016	2015	2016	2015	2016	2015
Eurozone periphery countries								
Balance as at Jan. 1	5	5	3	2	8	7	–	1
Balance as at Dec. 31	5	5	2	3	7	8	–	–
Shipping finance								
Balance as at Jan. 1	184	247	20	19	204	266	2	4
Balance as at Dec. 31	160	184	18	20	178	204	–	2

FIG. 42 – BANK SECTOR: FACTORS DETERMINING THE CREDIT VALUE-AT-RISK

	Average probability of default				Expected loss (€ million)				Risk capital requirement (€ million)			
	Bank sector		DZ BANK		Bank sector		DZ BANK		Bank sector		DZ BANK	
	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Traditional credit risk	0.7%	0.7%	0.2%	0.2%	503	409	112	104	2,566	2,091	974	811
Issuer risk	0.2%	0.3%	0.2%	0.2%	70	78	38	32	1,571	1,183	325	238
Replacement risk	0.2%	0.1%	0.1%	0.1%	12	10	10	9	335	295	278	200
Total					585	497	161	145	4,472	3,569	1,577	1,249
Average	0.5%	0.6%	0.2%	0.2%								

Not relevant

FIG. 43 – BANK SECTOR: CREDIT VALUE-AT-RISK FOR CREDIT PORTFOLIOS WITH INCREASED RISK CONTENT

	Bank sector		DZ BANK	
€ million	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015
Eurozone periphery countries	946	701	16	17
Shipping finance	361	266	58	52

Figure 42 shows the credit value-at-risk together with the average probability of default and expected loss.

The risk capital required in the **Bank sector** and at **DZ BANK** for credit portfolios exposed to increased credit risk is shown in figure 43.

The year-on-year increase of 35 percent in the risk capital requirement for exposures held by entities in the Bank sector to **European periphery countries** was largely the result of including WL BANK for the first time. Because Irish counterparties were removed from the analysis of particularly risky credit portfolios, the risk capital requirement for eurozone periphery countries as at December 31, 2015 that was given in the 2015 opportunity and risk report has been restated. The risk capital requirement in the Bank sector for **shipping finance** stemmed primarily from DVB.

8.10. Summary and outlook

All internal **rating systems** approved by the banking supervisor for solvency reporting were validated in 2016. For 2017, DZ BANK is planning to complete the further development work on the project finance rating system and to develop a supervisory slotting approach for project finance, which is scheduled to be used from 2020 onward to calculate the regulatory capital requirement. It is also expected that the rating system for insurance companies used in connection with the IRB approach will be subject to a supervisory review, and that the rating systems used in the IRB approach will be validated, taking into account the portfolios of the former WGZ BANK.

From March 1, 2017, OTC derivatives are subject to a more extensive collateralization obligation under the EMIR. In this regard, the **collateral policy** has been revised to include further standardization of contract parameters. In connection with the introduction of a portfolio-based approach for measuring the replacement risk in the bulk of the **derivatives portfolio**, further progress was made in 2016 on the design of the approach and technical preparations were put in place for live implementation. Furthermore, the inclusion of proprietary **exchange-traded futures and options** and those traded on behalf of customers below the replacement risk limits was completed. Another notable development planned for 2017 is the **migration and integration of the former WGZ BANK's business portfolios**. In addition, DZ BANK intends to initiate further measures as part of its continuous optimization of the internal **credit risk measurement** system.

In 2017, the entities in the Bank sector will continue to apply their existing **risk-strategy approach** to lending. At DZ BANK, this will involve further stepping up business with the cooperative financial network and selected customers. The Bank sector also plans to further increase its market share in SME business and strengthen its positioning in this segment in Germany, especially in the medium-sized company subsegment.

Given the predictions for economic growth, the Bank sector and DZ BANK are both likely to make additions to **specific loan loss allowances** in 2017, but within the expected level of allowances for losses on loans and advances.

9. Equity investment risk

9.1. Definition and causes

Equity investment risk is the risk of losses arising from negative changes in the fair value of the 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 Group Strategy and Controlling division is responsible for **supporting these investments**, whereas at BSH the task falls within the scope of the International Markets division and the Controlling and Investment Management division. At DVB, the investments are the responsibility of the Accounting and Legal Affairs departments.

The **monitoring and measurement** of equity investment risk is the responsibility of the relevant planning and control units, which must then submit quarterly reports on the results of their activities to the Supervisory Board, the Board of Managing Directors, and the division responsible for supporting the investments.

9.3. Risk management

Goodwill relating to long-term equity investments is 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 an impairment test, the carrying amount of the units to which the goodwill relates is compared with the market price that could be achieved at this point.

Since the first quarter of 2016, the capital requirement for equity investment risk at **DZ BANK** has been determined using a Monte Carlo simulation. In this method, which replaces the previous variance-covariance approach, portfolio concentrations in sectors and individual counterparties are taken into account by simulating industry-wide and individual investment-related risk factors.

At **BSH**, risk is still determined using a variance-covariance method, in which the value-at-risk is measured with a holding period of 1 year.

The main risk drivers are 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 capital requirement for equity investment risk has been determined using an earnings-at-risk approach since the second quarter of 2016.

The measurement of equity investment risk takes into account both the equity-accounted investments and 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. Risk factors and risk position

If a future impairment test determines that the goodwill 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.

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.

The **carrying amounts of long-term equity investments** in the **Bank sector** relevant for the measurement of equity investment risk amounted to €2,786 million as at December 31, 2016 (December 31, 2015: €3,235 million). The decrease was primarily attributable to a switch in the valuation method used at DVB. As at December 31, 2016, the carrying amounts of the long-term equity investments of **DZ BANK** totaled €1,709 million (December 31, 2015: €1,544 million).

As at the reporting date, the **economic capital requirement** for equity investment risk in the **Bank sector** was measured at €1,263 million, which was higher than the corresponding figure at the end of 2015 of €854 million. The upper loss limit was €1,468 million (December 31, 2015: €1,081 million). As at December 31, 2016, the economic capital requirement for equity investment risk at **DZ BANK** amounted to €722 million (December 31, 2015: €439 million). The principal reasons for this increase were the introduction of a newly developed risk measurement model and the impact from the merger. The upper loss limit at December 31, 2016 was €760 million (December 31, 2015: €440 million). The upper loss limits for the entities in the Bank sector, including DZ BANK, were not exceeded at any time during 2016.

10. Market risk

10.1. Definition and causes

Market risk in the Bank sector comprises market risk in the narrow sense of the term, and market liquidity risk.

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, commodity risk, and asset-management risk. These risks are caused by changes in the yield curve, credit spreads, exchange rates, share prices, and commodity prices.

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, 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

The following principles for managing market risk apply to DZ BANK and its subsidiaries in the Bank sector:

- 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.

For regulatory purposes, **DZ BANK** is classed as a trading book institution. It conducts trading activities as part of its role as a 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, primarily involving spread risk and migration risk, arise in connection

with customer business and from holding securities portfolios for trading on behalf of customers. 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 in its lending business and own issues and also incurs market risk from holding issues from the primary 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.

As an institution with a banking book for regulatory purposes, **BSH** is exposed to market risks, primarily in the form of interest-rate risk, spread risk, and migration risk. In the case of interest-rate risk, the risk arising from collective business is particularly significant because the business guarantees customers fixed interest rates on both their credit balances and on loans to be drawn down in the future. Risk quantification models designed specifically for the building society business take account of this transaction structure. BSH enters into capital-market transactions in order to manage interest-rate risk from the collective business and to invest surplus home savings deposits. This primarily involves purchasing securities. BSH does not conduct any own-account trading with a view to exploiting short-term pricing fluctuations. Spread risk and migration risk arise on its securities portfolio.

For regulatory purposes, **DG HYP** is also classed as an institution with a banking book. DG HYP's business model means that the risks relevant to its management of market risk are interest-rate risk, spread risk, migration risk, and currency risk. Currency risk only represents a low risk in this case, as it is usually largely eliminated. Spread risk and migration risk are monitored as part of the internal reporting system.

As DG 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.

For regulatory purposes, **DVB** has the characteristics of a trading book institution, although its trading positions are minimal. Given its business model, it is particularly exposed to interest-rate risk and currency risk, as well as a small degree of equity risk. These forms of market risk primarily arise from customer business and funding activities. DVB is also exposed to a low level of spread risk and migration risk that mainly results from holding securities for the purpose of liquidity management. DVB does not trade on its own account to generate profits from temporary fluctuations in prices and exchange rates.

Both **UMH** itself and its subsidiaries invest their own resources in purchasing Union Investment mutual funds. UMH and its subsidiaries also acquire units in newly launched Union Investment 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.

UMH is also exposed to asset-management risk. This risk arises from its obligation to pay additional capital for guarantee products. 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.

Interest-rate risk arises in connection with the valuation of defined benefit obligations.

UMH and its foreign subsidiaries are also exposed to currency risk on a small scale. This mainly results from exposures for processing payments and for ensuring liquidity.

For regulatory purposes, **WL BANK** is classed as an institution with a banking book. Because of WL BANK's strategic focus, it is exposed to market risks, primarily in the form of interest-rate risk, spread risk,

and migration risk. Interest-rate risk arises largely as a result of temporary or long-term maturity mismatches in connection with fixed-interest periods for interest-bearing transactions. This risk is subject to specified limits and is closely monitored. Spread risk and migration risk are monitored as part of the internal reporting system. The risk arising on transactions subject to currency risk is eliminated by hedging. As a non-trading book institution, WL BANK does not conduct any own-account trading with a view to exploiting short-term pricing fluctuations.

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 as part of the banking book. Market risk arising at **DG HYP**, **DVB**, 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. WL BANK's market risk is largely managed by Pfandbrief treasury within the limits decided by the Board of Managing Directors of WL BANK.

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.

As part of internal reporting at **DZ BANK**, **BSH**, **DG HYP**, **DVB**, and **WL BANK**, Risk Controlling provides the portfolio managers and the senior managers 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.

10.4. Risk management

10.4.1. Refinement of the portfolio structure

With effect from January 1, 2016, the existing definitions for trading portfolios and non-trading portfolios were amended in the context of value-at-risk, which is used for short-term risk management. '**Trading portfolios**' is now the overarching term for the trading and banking books assigned to the capital-markets-related trading units of DZ BANK. This differs from the previous definition of 'trading portfolios', which used to also cover parts of the treasury portfolios.

Under the new definition, the **non-trading portfolios** continue to cover all of the other portfolios of DZ BANK as well as the portfolios of the other management units within the Bank sector. They now also include the parts of the treasury portfolios that are not assigned to the trading portfolios. In addition, plan assets and defined benefit obligations that do not form part of any outsourced pension plans are allocated to the non-trading portfolios.

10.4.2. Measurement of market risk

Measurement of market risk in the narrow sense

DZ BANK, BSH, DG HYP, DVB, UMH, and **WL BANK** 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, DG HYP, WL BANK), 1,500 trading days (BSH), 256 trading days (DVB), and 1 year (own-account investments of UMH).

DZ BANK, **BSH**, **DVB**, and **DG 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 and it is also used when quantifying the asset-management risk for most product types. The measurement of risk in each case is based on a unilateral confidence level of 99.9 percent and a holding period of 1 year.

For **DZ BANK**, **BSH**, **DG HYP**, **DVB**, and **WL BANK**, 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, currency risk, and commodity 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. 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.

To quantify market risk from a longer-term (strategic) perspective, the credit institutions in the Bank sector regularly calculate the **capital requirement for market risk** and compare it with the associated upper loss limit.

The risk measurements from both the operating and strategic perspectives for the credit institutions in the Bank sector are linked to each other by a consistent **system of limits**, whereas the market risk incurred by UMH is managed directly at the level of its risk capital requirement. Consequently, it does not require a limit system for linking the operating and strategic perspectives.

Changes to the measurement of risk from pension commitments

The reclassification of the portfolios described in section 10.4.1. was accompanied by refinements to the measurement of the risk from pension commitments in the Bank sector. The market risk arising on **defined benefit obligations** is now included in the daily measurement of risk in the non-trading portfolios. Until mid-June 2016, some of these risks were backed by a general capital buffer.

DZ BANK has also refined the way in which it shows the amounts invested to meet the defined benefit obligations. These **plan assets**, which are held as a fund, were previously reported for risk purposes in terms of the market risk attaching to the fund or equities. The fund is now broken down into its constituent asset classes (interest rates, credit spreads, equities, and currencies) for the purposes of risk calculation. As the fund only contains a small proportion of equities, this has resulted in a sharp fall in the risk assigned to the equities category.

Measurement of market liquidity risk

In the **Bank sector** and at **DZ BANK**, market liquidity effects are taken into account centrally when determining the risk capital requirement for spread risk and migration risk.

In addition, the market liquidity risk associated with interest-rate risk, equity risk, fund price risk, currency risk, commodity risk, and asset-management risk is measured using special stress scenarios when determining the risk capital requirement for market risk. The economic capital requirement calculated in these stress scenarios is compared against the available cover assets in order to obtain an indication of capital adequacy during periods of adverse trends in market liquidity.

10.4.3. Backtesting and stress tests

The methods used by the entities in the Bank sector to quantify continuous market risk 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. In these stress tests, the following are deemed to be material risk factors: interest-rate risk, spread risk, migration risk, equity risk, currency risk, and commodity risk.

10.4.4. Management of limits for market risk

Market risk is managed at **DZ BANK**, **BSH**, and **DG 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 arising during the course of the year.

Within the trading divisions of **DZ BANK** and the treasury at **DG 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 DG HYP, the treasury's system of limits is based on value-at-risk and sensitivities.

The limit system used at both **DVB** and **UMH** is based on the value-at-risk or risk capital required at the highest portfolio level.

WL BANK manages interest-rate risk, together with spread risk and migration risk, at overall bank level within the sector-related limits specified by DZ BANK.

10.4.5. 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 **DG HYP**, it is hedged by treasury. At **WL BANK**, this responsibility lies with Pfandbrief treasury. In the case of the latter, market risk is hedged mainly by using OTC transactions with suitable counterparties.

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.

DG HYP exclusively uses 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.

At **BSH**, the asset-liability committee decides whether to hedge market risk via OTC transactions.

DVB's treasury uses OTC interest-rate and currency derivatives to hedge market risk.

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 **DG HYP**, the effectiveness of any hedging is reviewed and reported daily in terms of both risk and performance. The report covers the entire DG HYP book. Derivatives in various forms are used to mitigate market risk. These are predominantly plain vanilla products.

Interest-rate risk incurred by **DVB** is eliminated by the use of interest-rate swaps. Currency risk is hedged by the use of currency swaps and cross-currency swaps with the aim of closing out all currency exposure.

Market risk is measured at **WL BANK** in the Finance division, which reports the value-at-risk in the overall interest-rate book daily. Interest-rate derivatives are the main instrument used to hedge this risk.

10.4.6. 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.

At **DG HYP**, interest-rate risk largely arises from Pfandbrief cover assets and funding transactions. These risks are mitigated by hedging on a regular basis.

Interest-rate risk at **DVB** largely arises from customer business, the purchase of securities for the liquidity portfolio, and funding transactions. This risk is generally eliminated.

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 risk incurred in connection with trading on behalf of customers is actively managed. 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 as part of a conservative investment policy.

Spread risk and migration risk at **DG HYP** largely result from holding securities as Pfandbrief cover assets. The risks are included in an active internal reporting system and are monitored on a daily basis. Migration risk is not covered by this daily monitoring. Since the switch in DG HYP's business model, the entity only takes on new spread risk or migration risk if it is necessary as part of the management of cover assets.

Spread risk and migration risk arise at **DVB** from holding securities in its liquidity portfolio.

Spread risk and migration risk at **WL BANK** result from holding securities as Pfandbrief cover assets and for liquidity purposes. The risk associated with these exposures is monitored as part of regular risk monitoring.

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.

Equity risk is primarily incurred by **DVB** in relation to its holding of treasury shares. The risk is not material.

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, but these funds are broken down into their constituent parts for the purposes of calculating risk and therefore no longer treated as fund exposures. The risk determined for the constituent parts is actively managed within existing limits.

Fund price risk arises at BSH from investing surplus home savings deposits in special funds. Funds are also used to cover defined benefit obligations. In both cases, the 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 currency risk

Only a small amount of currency risk arises at **DZ BANK**, primarily in connection with interest-rate products denominated in foreign currency and in connection with customer business involving currency products and derivatives. Currency risk is eliminated for the most part. Generally speaking, DZ BANK does not hold any significant open currency positions.

At **BSH**, currency risk arises mainly as a result of capital transfers between BSH and subsidiaries in non-eurozone countries. This risk is not material and is eliminated by hedging where required.

The currency risk resulting from customer business at **DG HYP** is not material and is normally eliminated in full.

Currency risk is largely incurred by **DVB** as a result of currency transactions on behalf of customers and funding transactions in foreign currencies. This risk is generally eliminated.

Transactions at **WL BANK** subject to currency risk are not material and generally eliminated by hedges.

Management of commodity risk

DZ BANK is exposed to a low level of commodity risk arising from customer business involving commodity derivatives. The exposure is hedged for the most part or passed on directly and in full to external counterparties in back-to-back transactions.

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. Risk factors

Credit spreads

Some credit risk premiums for bank bonds and corporate bonds declined significantly over the course of 2016. In particular, there was a perceptible narrowing of credit spreads on investment-grade government and corporate bonds. This trend was accompanied by a corresponding increase in the fair values of bonds.

If credit spreads on bank and corporate bonds or other investments, particularly government bonds, were to widen again, this would lead to a drop in fair values. Present value losses of this nature could have a temporary or permanent adverse impact on the profits generated by the entities in the Bank sector.

Market liquidity

A market-wide liquidity squeeze could be detrimental to the business activities of the DZ BANK Group and therefore also to its financial position and financial performance. Tighter market liquidity arises particularly in stressed market conditions, for example during the financial crisis.

10.6. Risk position

10.6.1. Risk capital requirement

As at December 31, 2016, the risk capital requirement for market risk used to determine the risk-bearing capacity of the **Bank sector** amounted to €4,347 million (December 31, 2015: €3,204 million) with an upper loss limit of €7,582 million (December 31, 2015: €5,830 million). This growth in the risk capital requirement was largely due to the impact of the merger and to exposures being transferred from the capital buffer to the regular market risk calculation.

The risk capital requirement for the Bank sector includes **asset-management risk**. The asset-management risk for guarantee funds was measured at €50 million as at December 31, 2016 (December 31, 2015: €60 million). The asset-management risk for

UniProfiRente as at the reporting date amounted to €28 million (December 31, 2015: €30 million).

As at December 31, 2016, **DZ BANK's** risk capital requirement for market risk amounted to €1,200 million (December 31, 2015: €752 million) with an upper loss limit of €2,400 million (December 31, 2015: €1,300 million). DZ BANK is not exposed to any asset-management risk.

Throughout the year under review, the risk capital requirement remained below the upper loss limit at the levels of both the Bank sector and DZ BANK.

10.6.2. Value-at-risk

Figure 44 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, figure 45 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, 2016, the **aggregate risk** in the **Bank sector** was measured at €119 million (December 31, 2015: €105 million). The aggregate risk for **DZ BANK** as at December 31, 2016 was calculated at €33 million (December 31, 2015: €29 million). There was therefore only a negligible year-on-year increase in risk despite the integration of the former WGZ BANK and of WL BANK into the risk model. The main reason was lower volatility in a generally stable market environment.

The value-at-risk for the **trading portfolios** in the Bank sector as at December 31, 2016 was €4 million (December 31, 2015: €27 million). The substantial fall in the reported risk was attributable to the new breakdown between trading and non-trading portfolios, and the associated allocation of parts of the treasury portfolios to the non-trading portfolios. If this modification to the allocation had not been carried out, the risk in the trading portfolios would have remained virtually unchanged over the course of the year.

In the year under review, hypothetical changes in fair value exceeded the forecast risk value on one trading day.

As at December 31, 2016, the value-at-risk for the **Bank sector's non-trading portfolios** was calculated at €119 million (December 31, 2015: €75 million). The increase in risk in the Bank sector was mostly attributable to WL BANK's integration into the risk model. Other contributory factors were the refinement of the portfolio structure and the inclusion of defined benefit obligations for the first time.

The risk for the non-trading portfolios at **DZ BANK** rose during the course of 2016 from €13 million to €32 million. The principal reasons were the first-time inclusion of pension liabilities in the risk model from mid-June 2016 and the reallocation of parts of the treasury portfolios to this group of portfolios. The noticeable increase in interest-rate risk to €17 million as at December 31, 2016 was also due to the integration of defined benefit obligations.

Alongside the inclusion of the defined benefit obligations in the risk measurement, plan assets were integrated into the model by breaking them down into the constituent parts of the funds; previously, the plan assets had been treated as funds without a 'look through' approach. This led to a decline in equity risk at DZ BANK.

10.7. Summary and outlook

In 2016, DZ BANK continued to integrate the measurement and management of market risk to a greater depth in the management units of the Bank sector. This included the further expansion of the market risk model across the sector.

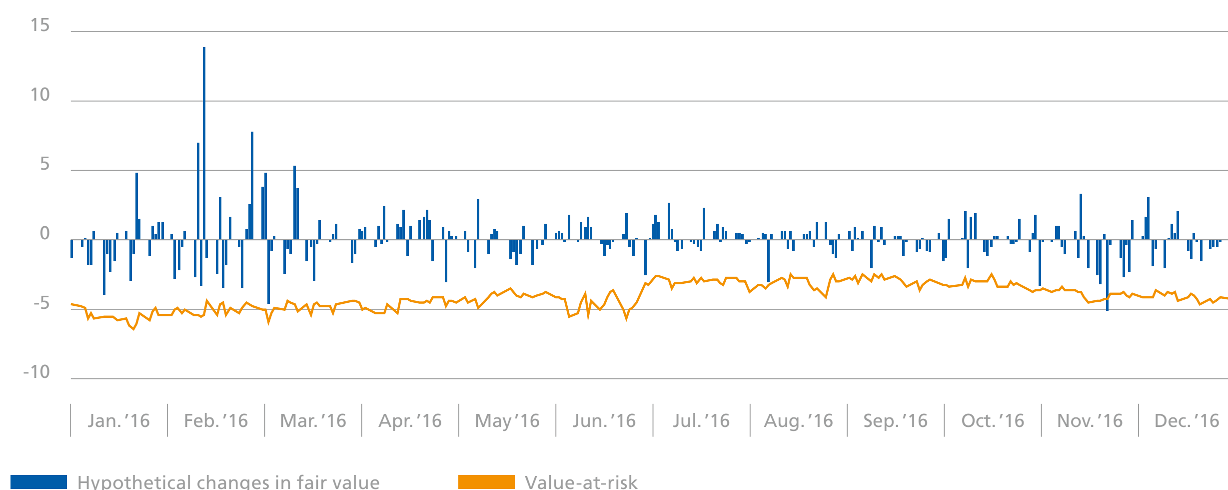
As in previous years, the focus of DZ BANK's trading business will be on customer business in 2017.

FIG. 44 – BANK SECTOR: VALUE-AT-RISK FOR MARKET RISK IN THE TRADING AND NON-TRADING PORTFOLIOS[1 2]

€ million	Interest-rate risk		Spread risk		Equity risk[3]		Currency risk		Commodity risk		Diversification effect[4]		Total	
	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK
Aggregate risk[5]														
Dec. 31, 2016	18	17	108	20	7	3	2	4	–	–	-15	-12	**119**	**33**
Dec. 31, 2015	12	6	99	28	14	9	1	4	–	–	-22	-18	105	29
Trading portfolios														
Dec. 31, 2016	2	2	4	4	1	1	1	1	–	–	-4	-4	**4**	**4**
Average	3	3	4	4	1	1	1	1	–	–	-4	-4	4	4
Maximum	5	5	5	5	1	1	2	2	–	–	-4	-4	5	5
Minimum	2	2	3	3	–	–	–	–	–	–	-5	-5	3	3
Dec. 31, 2015	4	4	26	26	1	1	2	2	–	–	-7	-7	27	27
Non-trading portfolios														
Dec. 31, 2016	19	17	104	17	7	3	2	4	–	–	-13	-9	**119**	**32**
Average	23	13	99	24	11	6	2	5	–	–	-26	-14	108	33
Maximum	44	21	124	27	15	11	3	6	–	–	-13	-9	140	42
Minimum	12	3	75	17	7	3	1	3	–	–	-42	-17	69	23
Dec. 31, 2015	11	3	68	3	14	9	1	2	–	–	-20	-4	75	13

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.
2 The minimum and maximum amounts for the different subcategories of market risk may stem from different points in time during the reporting period. Consequently, they cannot be aggregated to produce the minimum or maximum aggregate risk due to the diversification effect.
3 Including funds, if not broken down into constituent parts.
4 Total effects of diversification between the types of market risk for all consolidated management units.
5 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.

FIG. 45 – BANK SECTOR: VALUE-AT-RISK FOR MARKET RISK AND HYPOTHETICAL CHANGES IN FAIR VALUE IN TRADING PORTFOLIOS



11. Technical risk of a home savings and loan company

11.1. Definition and causes

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 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 at a later point – following a savings phase (around 6 to 10 years in a standard savings arrangement) – he/she can be granted a low-interest home savings loan (with a maturity of 6 to 14 years) when payout is approved. 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 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 of the collective simulation are fed into an income statement for the period using a long-term forecast of earnings. The variance between the actual earnings in the risk scenario and the necessary earnings to achieve the target 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, particularly the assumptions about customer behavior, 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. 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 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. There is also a risk that the liquidity position could deteriorate, in particular as a consequence of the drop in deposits from banks and customers.

11.5. Risk position

As at December 31, 2016, the capital requirement for the technical risk of a home savings and loan company amounted to €541 million (December 31, 2015: €549 million) with an upper loss limit of €600 million (December 31, 2015: €550 million). The risk capital requirement did not exceed the applicable upper loss limit at any point during the course of 2016.

12. Business risk

12.1. Definition and causes

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.

The key entities incurring business risk in the Bank sector in addition to DZ BANK are the management units DVB, DZ PRIVATBANK, and UMH.

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 **Financial Services Advisory Council** increases the involvement of the cooperative banks in the joint development and marketing of the DZ BANK Group's products and services and it works closely with the BVR and its Special Committees. The Financial Services Advisory Council therefore acts as a recommendation committee on product and sales issues arising from the partnership between the cooperative banks and the DZ BANK Group. This approach endeavors to engender a high degree of mutual commitment while at the same time fully maintaining the decentralized structure to the benefit of the cooperative banks.

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. Risk factors

Costs of regulation

Over the next few years, the DZ BANK Group is likely 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.).

Merger of DZ BANK and WGZ BANK

The process of integration after the merger of DZ BANK (pre-merger) and the former WGZ BANK will lead to

restructuring expenses. Once everything is up and running after the integration is complete, the joint institution is expected to be able to make full use of cost synergies in connection with structures, processes, and infrastructure and to avoid duplication of capital expenditure.

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. The resulting increased pressure on prices and lower business volume would notch up the competitive pressure still further. Again, this could give rise to margins that are economically unattractive or that do not adequately cover the risk arising from the corresponding transactions.

Changes in the market resulting from electronic trading platforms

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.

Digitalization and demographic change

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. Banks are often confronted by new, unregulated competitors that frequently originate from the non-banking sector and that only selectively arrange, or actually offer, high-margin products or services for customers, leaving the complex and thus high-risk areas of business to the established banks. Consequently, if traditional financial service providers offering the full range of products and services come under threat in high-margin areas of business from competitors that are subject to little or no regulation, yet are expected to continue offering the other standard products, the earnings prospects of the entities in the DZ BANK Group may deteriorate in their payments processing and card processing businesses.

In the coming years, the banking industry will also face challenges relating to **demographic change** and the resulting alterations in customer behavior, while becoming subject to increased regulation.

The **opportunities** associated with digitalization and demographic change are presented in section 4.2.2.

12.4. Risk position

As at December 31, 2016, the economic capital requirement for the business risk incurred by the **Bank sector** amounted to €912 million (December 31, 2015: €579 million). The rise was largely the result of a recalculation based on DZ BANK's updated business forecasts. The upper loss limit was €1,024 million at the reporting date (December 31, 2015: €775 million).

As at December 31, 2016, the economic capital requirement for **DZ BANK** was calculated at €717 million (December 31, 2015: €398 million). The upper loss limit as at December 31, 2016 was €750 million (December 31, 2015: €550 million).

13. Reputational risk

13.1. Definition and causes

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, business continuity management, and compliance.

13.3. Risk management

Reputational risk is generally taken into account within business risk and is therefore implicitly included in the measurement of risk and risk capital adequacy in the Bank sector. At BSH, reputational risk mainly is measured and the capital requirement determined 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. 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 shareholders and employees necessary to conduct business operations. Ultimately, reputational damage could make it more difficult to obtain funding.

14. Operational risk

14.1. Definition and causes

DZ BANK defines operational risk 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.

The activities of DZ BANK and those of BSH, DG HYP, DVB, DZ PRIVATBANK, and UMH

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. The following principles represent areas in which it has taken action, or is planning to take action, to ensure this core objective is achieved:

- Continuous enhancement of **risk awareness**, so that it is reflected in an appropriate risk culture focusing not only on individual areas of responsibility but also on overarching interests; establishment of comprehensive, open communication systems to support these aims
- An open and largely penalty-free **approach to operational risk** promoting a problem-solving culture
- Depending on the materiality of the operational risk identified, **action** to prevent, reduce, or transfer the risk, or alternatively a conscious decision to accept the risk
- **Risk appetite** defined in the form of an upper loss limit and alert thresholds for contributions to operational risk that is continuously adjusted in line with prevailing circumstances
- Individual **methods** for managing operational risk coordinated with each other to provide an accurate, comprehensive picture of the risk situation coherently integrated into the overall management of all risk types
- Mandatory rule for all material **decisions** to take into account the impact on operational risk; this applies in particular to the new product process and to business continuity planning
- **Management** of operational risk on a decentralized basis, but within the strategically defined 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 operational risk. 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.

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 focuses particularly on loss data 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. Losses are recorded if they are above a threshold value of €1,000.

Risk self-assessment

Senior managers from all management units assess operational risk as part of 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 findings are fed into the internal portfolio model for operational risk that is used to calculate any capital buffer requirement. 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 alert thresholds 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, comprehensive **contingency plans** covering business-critical processes have 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.

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 key performance indicators (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 enable the management units to measure and 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 managed and monitored using the following four risk factors embedded in the Human Resources KPI cockpit:

– **Exit risk**: Exit risk is measured and assessed using the employee turnover rate and the employee resignation rate.

– **Availability risk**: Quantitative and qualitative staffing requirements are managed on an annual basis as part of the strategic and operational planning in the management units. Data on sickness and absenteeism, appointment ratios for key positions, and information on numbers in trainee development help to minimize this risk.

– **Skills and qualifications risk**: The suitability and qualifications of employees are recorded using specific key figures for continuing professional development.

– **Motivational risk**: The entities in the Bank sector use standardized employee surveys to regularly update the Organizational Commitment Index and the results are presented transparently in the cockpit.

Compliance functions and a comprehensive internal control system are used to counter fraud. Examples include internal rules on the minimum absence for employees with responsibility for trading positions.

As part of risk control at DZ BANK, relevant KPIs for HR management have been defined 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, 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.

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. Because the collective pay agreement was terminated by the employers' association in November 2012, there is currently no obligation not to engage in industrial action at DZ BANK.

Other HR measures, such as job cuts in response to a permanent fall in demand or to achieve efficiency enhancements, could lead to industrial disputes between the workforce (or the employee representatives/labor unions) and the entities in the Bank sector.

As part of 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.

Similar concerns would also apply in the event of business interruptions, strikes or similar action at partners on which the operating activities of the entities in the Bank sector are reliant.

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. A particular risk would be a partial or total breakdown in data processing systems. The Bank sector counters this risk by using 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.

The central risk assessment method used by the IT division at **DZ BANK** is the assessment of risk events in the IT risk profile report. Risk events are deemed to be specific scenarios for which the level of loss and the probability of occurrence are assessed. The assessment carried out by IT division managers takes into account the results of the self-assessment report on the internal control system, the report on control points, and the report on findings and incidents.

The results of the assessment of IT risk events conducted at **DZ BANK** are used to prepare the risk self-assessment scenarios for the IT division. 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.

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 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. In the year under review, the RSA Archer outsourcing management tool was introduced in conjunction with COM. This tool is used as the central application for recording outsourcing projects at DZ BANK and for managing outsourcing partners.

DZ BANK's main IT outsourcing partners responsible for running key IT applications are Fiducia & GAD and T-Systems International GmbH (T-Systems). In addition, the entire operation of DZ BANK's network has been outsourced to Ratiodata IT-Lösungen & Services GmbH, Münster, (Ratiodata). Investment services and custody business services are processed by Deutsche WertpapierService Bank AG, Frankfurt am Main. The service provider equensWorldline SE, Utrecht, is contracted to process payments. CardProcess GmbH, Karlsruhe, is responsible for credit card processing and acquiring processes on behalf of DZ BANK.

BSH has also outsourced application development, IT operations, and the processing of lending and building society operations to Schwäbisch Hall Kreditservice GmbH (SHK).

DG HYP has transferred its IT and network operations to T-Systems and Ratiodata. Until the end of 2016, retail real estate loans were processed by Hypotheken Management GmbH, Mannheim, an indirect subsidiary of BSH. DG HYP terminated the outsourcing arrangement at that point and from the 2017 financial year is once again processing the remaining credit portfolio in-house.

The main IT service provider used by **DVB Bank** to operate its core banking systems on the basis of SAP software is itelligence Outsourcing & Services GmbH, Bautzen.

EBRC, Luxembourg, is the outsourcing partner of **DZ PRIVATBANK** for its data center infrastructure. Further IT services are provided by Ratiodata. Fund accounting has been transferred to Union Investment Financial Services S.A., Luxembourg.

The main IT service providers for **UMH** are T-Systems, Fiducia & GAD, Ratiodata, and Computacenter AG & Co. oHG. Other activities, including activities within custody business and portfolio management, have also been outsourced.

In the entities of the Bank sector, outsourcing partners are managed 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.

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 3.4.7.

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

Legal risk could arise, in particular, from changes in the legal environment (legislation and decisions by the courts), changes in official interpretations, government interventions, court or arbitration proceedings, and changes in the business environment. Tax risk with legal risk implications is not included at this point; 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 circum-

stances 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 provisions or similar allowances for losses on loans and advances.

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.

Any concentrations of risk owing to similarities between individual cases are taken into consideration. Comparable cases are aggregated to form a group.

Risk factors

The entities in the Bank sector have recognized provisions for legal risk arising in connection with capital market and credit products.

14.5.6. Tax risk

Risk management

Tax risk can arise, in particular, from changes in tax circumstances (tax legislation, decisions by the courts), changes in interpretation by tax authorities, changes in non-tax regulations, and from changes in the business environment.

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 group-wide 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.

Risk factors

The entities in the Bank sector are subject to regular **audits by the tax authorities**.

Currently, audits for the tax-assessment periods in 2010 and 2011 are being carried out by the tax authorities at **DZ BANK** (including the tax group) in relation to corporation tax, trade tax, and value added tax. A follow-on audit by the tax authorities covering the period from 2012 up to and including 2014 was started at DZ BANK during the autumn of the year under review. A tax audit for the former WGZ BANK covering the assessment periods 2007 to 2010 is still pending at present.

Tax authority audits for the tax-assessment periods in 2010 to 2011 are currently also being carried out,

or have now been completed, at **other entities** in the Bank sector. In individual cases, these audits have been extended to cover subsequent years up to and including the 2014 financial year.

At **DZ BANK**, the audit for payroll tax purposes relating to the period 2007 to 2010 inclusive is still pending at the moment, although the audit for the subsequent years 2011 to 2014 inclusive has already begun.

In the context of these tax audits, an alternative assessment of the tax risk or, in some cases, other information could give rise to retrospective tax liabilities or retrospective liabilities in relation to social security contributions for periods that have already been assessed. If the retrospective liabilities exceed the provisions recognized for tax risk, this could have a negative effect on the financial performance of the DZ BANK Group and individual entities in the Bank sector.

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 allowances for losses on loans and advances. Further risks could arise as a result of **changes in tax law or in decisions by the courts**, which could also have retroactive implications.

In particular, in the years 2009 to 2011, **DZ BANK** claimed credits of dividend withholding tax paid in respect of dividends received on shares acquired in cash equities trades set up around the dividend date (known in Germany as **cum/cum transactions**). Based on a decision by the German Federal Court of Finance (BFH) of August 18, 2015 disallowing tax credit options under securities lending structures, discussions are currently taking place to assess the implications of this decision for other transactions, notably the aforementioned cash equities trades.

According to the information currently available, in particular a letter from the Bundesministerium der Finanzen (BMF) [German Federal Ministry of Finance] dated November 11, 2016, DZ BANK satisfies the criteria for tax credits on the claimed dividend withholding tax including the solidarity surcharge. However, there is some uncertainty as to whether the BMF's pronouncement will be retained in this form because some German federal states are pressing for a revision of the content.

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 3.4.4.

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.

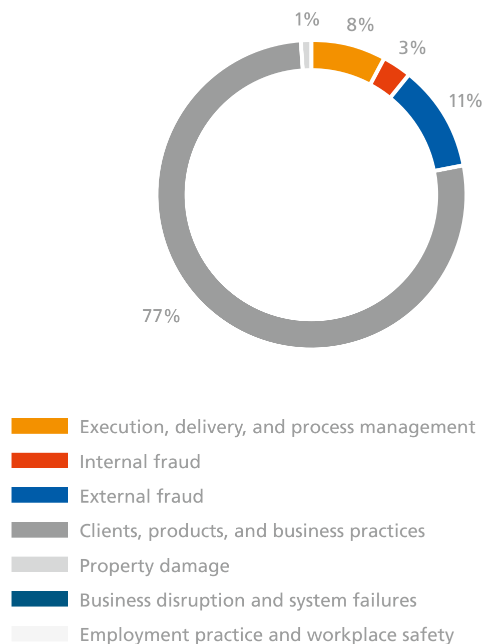
A violation of legal provisions may have legal implications for the entity concerned, for the members of its decision-making bodies, or for its employees. It may give rise, for example, to fines, penalties, retrospective tax payments, or claims for damages by third parties. The reputation of the DZ BANK 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.

Figure 46 shows the losses for the **Bank sector** reported in 2016 classified by loss event category. 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. The losses are selected on the date on which the expense results in a cash outflow, thus ensuring consistency with the internal reporting.

FIG. 46 – BANK SECTOR: NET LOSSES BY EVENT CATEGORY IN 2016[1]



Execution, delivery, and process management
Internal fraud
External fraud
Clients, products, and business practices
Property damage
Business disruption and system failures
Employment practice and workplace safety

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 (77 percent) of net losses. The net loss in the ‘Clients, products, and business practices’ category was attributable to two different loss events. One loss event resulted from changes arising from court decisions and legal interpretation; a second loss event related to a site that had already been closed.

Accounting for 90 percent of total net losses, the largest loss event category at **DZ BANK** was also ‘Clients, products, and business practices’. The net losses were attributable to the loss event referred to above arising from a site that has already been closed.

Losses did not reach a critical level relative to the expected loss from operational risk at any point during 2016 in either the Bank sector or DZ BANK.

14.7. Risk position

Using the internal portfolio model, the **Bank sector's** capital requirement for operational risk as at December 31, 2016 was calculated as €892 million (December 31, 2015: €871 million), with an upper loss limit of €1,152 million (December 31, 2015: €1,150 million).

As at December 31, 2016, **DZ BANK's** capital requirement for operational risk calculated using the internal portfolio model amounted to €439 million (December 31, 2015: €331 million). The alert threshold for contributions to operational risk amounted to €479 million as at December 31, 2016 (December 31, 2015: €548 million). The risk capital requirements both for the Bank sector and for DZ BANK were within the applicable upper loss limit and alert threshold at all times during the course of 2016.

14.8. Summary and outlook

Since 2015, the economic risk capital requirement for operational risk has been calculated using a portfolio model. This approach has also been used for the joint central institution and the post-merger DZ BANK Group since the fourth quarter of 2016. The results from this model, combined with the materiality limits for collation of loss data, scenario-based risk self-assessments, and risk indicators, enable the efficient management of operational risk.

In 2017, it is planned to extend the scope of the framework used for operational risk and carry out quality assurance reviews with a view to optimizing the application of the tools used for managing this risk.

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 R+V's approved risk strategy, which is updated every year. The risk strategy is derived from the business strategies, taking into account the strategic 4-year plan approved by the Board of Managing Directors at its spring meeting.

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. In order to diversify the life insurance and pension provision portfolios, pension, endowment and risk insurance, working life and semi-retirement products, and index-linked products are underwritten in a way that achieves a balance between the product pillars. 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 actuarial 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 as part of 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 within the framework of the overall risk management system and 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, the setting of 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, to avoid concentrations of issuers at portfolio level, and to 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.

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. In addition, the risk management system incorporates a business continuity management system. Risk-bearing capacity is reviewed and measured at least once a quarter and the process includes a qualitative 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 subsequently evaluated each quarter by the Risk Committee.

R+V extended its governance system on January 1, 2016 by appointing key function holders and preparing the internal guidelines required under Solvency II.

The central **reporting of risk** at R+V is intended to provide transparent reporting. A system of reports to the member of R+V's Board of Managing Directors responsible for the business area concerned and to the member of R+V's Board of Managing Directors responsible for risk management allows for the notification of material changes in risks. 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 causes

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. Causes

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 adverse 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 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 supervises the appropriateness of the actuarial assumptions used in the calculations.

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 at regular intervals 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, 2016, R+V used the new PKV mortality table valid for 2016 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 volume measure for the **reserve risk** constitutes the net claims provisions in the form of a best-estimate valuation.

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 material countries and natural hazards of the risk written for the risks in inward reinsurance. Modeling based on the group's own claims history is also used. This involves generating scenarios for the current portfolio on the basis of historical major claims.

In inward reinsurance, modeling based on the group's own claims history is 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 concentra-

tions 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.

Estimating obligations arising from loss events that have occurred is subject to uncertainty. In compliance with Solvency II requirements, mathematical/statistical methods are used to calculate future payment obligations for the purpose of measuring insurance liabilities. Within insurance liabilities, premium and claims provisions are measured separately. 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 insurance 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 earning-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 actuarial 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. R+V has sufficient own funds and reserves providing the necessary risk-bearing capacity so there is currently no need to purchase further reinsurance (retrocession).

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. 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 its **direct non-life insurance and inward non-life reinsurance business**, R+V focuses on the provision of cover for 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.

An unfavorable pattern of claims could result in an increase in the insurance benefit payments reported in the income statement, and this in turn could have a negative effect on the DZ BANK Group's operating profit.

16.6. Claims rate trend in non-life insurance

In the **direct non-life insurance business**, the claims rate trend in respect of natural disasters was dominated by the impact from the 3 low-pressure systems Elvira (€61 million), Friederike/Gisela (€33 million), and Neele/Oliane (€52 million), which together accounted for total losses of €146 million. There were also 2 individual loss events caused by fire, resulting in total claims of €66 million. As a result, the claims rate for major and cumulative claims was higher than in previous financial years. By contrast, the underlying cost of claims (excluding major and cumulative claims) was marginally below the 5-year average. Overall, this resulted in an annual claims rate that was slightly higher than average rate for previous years.

Major and cumulative claims in **inward reinsurance** were at an average level in 2016 and were within expectations.

Changes in claims rates and settlements (net of reinsurance) in direct non-life insurance and inward non-life reinsurance business are shown in figure 47.

16.7. Risk position

As at December 31, 2016, the **overall solvency requirement for life actuarial risk** amounted to €702 million (December 31, 2015: €403 million). The increase was predominantly attributable to the change in interest rates. The **upper loss limit** was set at €1,200 million as at the balance sheet date (December 31, 2015: €520 million). The upper loss limit was not exceeded at any time during 2016.

As at December 31, 2016, the **overall solvency requirement for health actuarial risk** was measured at €148 million (December 31, 2015: €162 million), with an **upper loss limit** of €330 million (December 31, 2015: €70 million). Again, the risk capital requirement was below the upper loss limit at all times during the course of 2016.

As at December 31, 2016, the **overall solvency requirement for non-life actuarial risk** amounted to €2,691 million (December 31, 2015: €2,651 million). The slight increase was attributable to the rise in premium and reserve risk resulting from the growth in business volume. The contraction in non-life catastrophe risk was caused by an increase in the level of reinsurance. The **upper loss limit** was set at €3,250 million as at the balance sheet date (December 31, 2015: €2,600 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 figure 48.

16.8. Summary and outlook

R+V possesses a number of tools for effectively controlling actuarial risks that have been identified and for identifying new risks at an early stage. The capital it holds, its well-diversified product portfolio, strong distribution channels, and cost-conscious business operations generally enable R+V to manage these risks and benefit from opportunities that arise.

The changes in actuarial risk in direct non-life insurance in 2017 will be shaped by the strategy of achieving long-term profitable growth in all segments of R+V.

FIG. 47 – INSURANCE SECTOR: CLAIMS RATE AND SETTLEMENTS (NET OF REINSURANCE)[1]

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Claims rate (net) as % of premiums earned											
Including major/natural disaster claims	76.1	76.2	75.5	78.2	75.6	77.7	77.3	73.0	72.6	73.7	71.0
Excluding major/natural disaster claims	72.3	74.0	73.8	69.1	72.7	71.4	75.0	73.0	70.6	70.1	69.8
Settlements (net) as % of provision for incoming claims											
Non-life	3.6	1.6	2.1	0.5	0.3	1.9	4.8	4.8	8.4	6.1	7.1

1 Direct non-life insurance business and inward reinsurance.

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.

FIG. 48 – INSURANCE SECTOR: OVERALL SOLVENCY REQUIREMENT FOR NON-LIFE ACTUARIAL RISK

€ million	Dec. 31, 2016	Dec. 31, 2015
Premium and reserve risk	1,667	1,504
Non-life catastrophe risk	1,736	1,839
Lapse risk	48	46
Total (after diversification)	**2,691**	**2,651**

17. Market risk

17.1. Definition and causes

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 duration.

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. The persistently low level of low interest rates has resulted in an increased risk, particularly for portfolios of life-insurance contracts with a high guaranteed return.

– **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 examined 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. For maturities for which the market is sufficiently liquid, the overall solvency requirement for interest-rate risk is calculated using the group's own stress factors derived from market data.

The capital requirements for **spread risk** are calculated using a factor approach based on the relevant lending volume. The level of the stress 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 stress factors are used. R+V uses its own stress 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 stress 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 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 stress 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 as part of 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 in the context of 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.

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 figure 54 in section 17.4.2.). A significant proportion of the portfolio is also backed by further collateral. The use of R+V's own credit risk evaluations, 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 credit 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.

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. Because real-estate risk makes up only a small proportion of aggregate risk and R+V adopts a prudent investment policy, this risk is not material 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 underwriting 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 part 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 2016, R+V added a total of €626 million to these supplementary reserves in its life insurance business, bringing the overall amount to €2,140 million. In its direct non-life business, it increased the reserves by €9 million to €23 million. R+V expects to make further additions in 2017 and these additions have been included in the budget accounts.

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 figure 49.

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 will be reduced in 2017 for observation units with a premium adjustment effective January 1, 2017. The reason for this step is the persistently low level of interest rates.

FIG. 49 – INSURANCE SECTOR: BENEFIT RESERVES BY DISCOUNT RATE FOR THE MAIN INSURANCE PORTFOLIOS[1]

Discount rate	Proportion of total benefit reserve in 2016[2]		Proportion of total benefit reserve in 2015[2]	
	(€ million)	(%)	(€ million)	(%)
0.00%	4,532	8.2	3,856	7.3
0.25%	607	1.1	550	1.0
0.75%	66	0.1	10	–
1.00%	18	–	23	–
1.25%	1,892	3.4	618	1.2
1.50%	55	0.1	72	0.1
1.75%	4,798	8.7	4,489	8.5
2.00%	258	0.5	142	0.3
2.25%	9,319	16.9	8,835	16.8
2.50%	91	0.2	102	0.2
2.75%	6,888	12.5	7,277	13.8
3.00%	3,690	6.7	4,079	7.7
3.25%	6,716	12.2	6,542	12.4
3.50%	4,325	7.8	4,444	8.4
3.75%	305	0.6	412	0.8
4.00%	7,373	13.4	7,405	14.1

1 The table covers the following insurance products that include an interest-rate guarantee:
- 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.

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. 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 reduced.

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 with collateral backed by statute.

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.

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.

Figure 50 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, 2016, the total lending volume of R+V had increased by 10 percent to €81.7 billion (December 31, 2015: €74.0 billion). Of this increase, €3.3 billion was attributable to the inclusion of the Italian subsidiaries of the Assimoco Group in the regulatory scope of consolidation with effect from January 1, 2016. The remainder of the increase was caused by the growth in insurance business.

The volume of lending in the home finance business stood at €9.5 billion as at December 31, 2016. This was the same as the figure at the end of 2015. Of this amount, 91 percent was accounted for by loans for less than 60 percent of the value of the property, a situation that was unchanged compared with December 31, 2015. The volume of home finance was broken down by finance type as at the reporting date as follows (figures as at December 31, 2015 shown in parentheses):

FIG. 50 – 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, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Dec. 31, 2016	Dec. 31, 2015	Investments held by insurance companies (note 56 to the consolidated financial statements)
								9.0	8.7	of which: mortgage loans
								8.2	8.8	of which: promissory notes and loans
								9.3	10.9	of which: registered bonds
								0.4	0.8	of which: other loans
								8.4	7.3	of which: variable-yield securities
								40.6	36.8	of which: fixed-income securities
								0.4	0.5	of which: derivatives (positive fair values)
								0.2	0.2	of which: deposits with ceding insurers
81.7	74.0	-0.7	3.7	–	–	-4.5	-3.9	76.6	73.6	Total
				Balance as at Dec. 31, 2016				-2.6	-3.2%	
				Balance as at Dec. 31, 2015				-0.4	-0.6%	

Grey shading: Not relevant

- Consumer home finance: €9.1 billion (€9.0 billion)
- Commercial home finance: €0.2 billion (€0.2 billion)
- Commercial finance: €0.3 billion (€0.4 billion).

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 72 percent of the total lending volume as at December 31, 2016, as was also the case at the end of 2015. This lending mainly comprised loans and advances in the form of German and European Pfandbriefe with collateral backed by statute. Loans and advances to the public sector and consumer home finance (retail) highlight the safety of this investment.

Figure 51 shows the sectoral breakdown of the lending volume in the Insurance sector.

An analysis of the **geographical breakdown** of lending in figure 52 reveals that Germany and other industrialized countries accounted for the lion's share – 92 percent – of the lending volume as at the reporting date, which was unchanged compared with December 31, 2015. 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 figure 53. As at December 31, 2016, 81 percent (December 31, 2015: 80 percent) of the total lending volume had a residual maturity of more than 5 years. By contrast, just 4 percent of the total lending volume was due to mature within 1 year as at the reporting date (December 31, 2015: 3 percent). The increase in long residual maturities was mainly the result of investments in bonds.

The **rating structure** of the lending volume in the Insurance sector is shown in figure 54. Of the total lending volume as at December 31, 2016, 80 percent continued to be attributable to investment-grade borrowers (December 31, 2015: 77 percent). This reflects the regulatory requirements and the safety-oriented risk strategy of R+V. The lending volume that is not rated, which made up 18 percent of the total lending volume (December 31, 2015: 19 percent), essentially comprised low-risk consumer home finance for which external ratings were not available.

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 figure 22 (section 8.4.1.).

As at the reporting date, the 10 counterparties associated with the largest lending volumes accounted for 23 percent of R+V's total lending volume (December 31, 2015: 21 percent).

FIG. 51 – INSURANCE SECTOR: LENDING VOLUME, BY SECTOR

€ billion	Dec. 31, 2016	Dec. 31, 2015
Financial sector	37.5	35.6
Public sector	21.5	17.4
Corporates	12.9	11.5
Retail	9.1	8.9
Industry conglomerates	0.7	0.6
Other	–	–
Total	**81.7**	**74.0**

FIG. 52 – INSURANCE SECTOR: LENDING VOLUME, BY COUNTRY GROUP

€ billion	Dec. 31, 2016	Dec. 31, 2015
Germany	32.5	32.6
Other industrialized countries	42.4	35.3
Advanced economies	1.1	1.0
Emerging markets	3.6	3.4
Supranational institutions	2.1	1.8
Total	**81.7**	**74.0**

FIG. 53 – INSURANCE SECTOR: LENDING VOLUME, BY RESIDUAL MATURITY

€ billion	Dec. 31, 2016	Dec. 31, 2015
≤ 1 year	2.9	2.3
> 1 year to ≤ 5 years	12.9	12.3
> 5 years	65.9	59.4
Total	**81.7**	**74.0**

FIG. 54 – INSURANCE SECTOR: LENDING VOLUME, BY RATING CLASS

€ billion		Dec. 31, 2016	Dec. 31, 2015
Investment grade	1A	23.2	20.2
	1B	5.8	6.3
	1C	–	–
	1D	8.9	7.1
	1E	–	–
	2A	6.1	6.1
	2B	5.2	7.0
	2C	6.3	5.6
	2D	8.5	3.5
	2E	–	–
	3A	1.3	1.4
Non-investment grade	3B	0.5	1.3
	3C	0.3	0.7
	3D	–	–
	3E	0.5	0.1
	4A	0.2	0.2
	4B	0.2	–
	4C	0.2	0.1
	4D	–	–
	4E	–	0.1
Default		0.1	0.1
Not rated		14.8	14.2
Total		**81.7**	**74.0**

17.5. Credit portfolios with increased risk content

The following disclosures form part of the above analyses of the entire credit portfolio. However, a separate analysis of R+V's exposure in credit portfolios with increased risk content has been included because of its significance for the risk position in the Insurance sector.

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.

Investments in **European periphery countries** totaled €7,687 million as at December 31, 2016 (December 31, 2015: €4,286 million), a rise of 79 percent. This increase was mainly caused by including the Italian subsidiaries of the Assimoco Group in R+V's regulatory scope of consolidation with effect from January 1, 2016. Figure 55 shows the country breakdown of the exposure.

As a result of a further improvement in its credit rating, Ireland has not been shown separately in internal risk reporting since the start of the year under review. Consequently, the total lending volume in respect of the eurozone periphery countries as at December 31, 2015 disclosed in this opportunity and risk report differs from the corresponding amount in the 2015 opportunity and risk report.

R+V's investments that are potentially affected by the current **Italian banking crisis** stood at €911 million as at December 31, 2016 (December 31, 2015: €549 million). Of this amount, €396 million was attributable to secured bonds (December 31, 2015: €87 million). This lending volume is included in the exposure shown for the Italian financial sector in figure 55.

The United Kingdom's expected exit from the EU and the political turmoil in Turkey have led to these countries' credit ratings being downgraded. As at December 30, 2016, R+V's investments in the **United Kingdom** and **Turkey** amounted to €4,096 million and €90 million respectively (December 31, 2015: €3,900 million and €106 million respectively).

17.6. Risk position

As at December 31, 2016, the **overall solvency requirement for market risk** amounted to €2,761 million (December 31, 2015: €2,578 million). The **upper loss limit** was €3,540 million (December 31, 2015: €2,950 million). The higher overall solvency requirement is explained by a rise in interest-rate risk, spread risk, and equity risk. Market risk reacted to the change in the level of interest rates; in addition, parameters in the stochastic model were adjusted. The upper loss limit was not exceeded at any time during 2016.

Figure 56 shows the overall solvency requirement for the various types of market risk.

FIG. 55 – INSURANCE SECTOR: EXPOSURE IN EUROZONE PERIPHERY COUNTRIES

€ million	Dec. 31, 2016	Dec. 31, 2015
Portugal	**7**	15
of which: public sector	–	–
of which: non-public sector	7	15
of which: financial sector	1	8
Italy	**5,763**	2,327
of which: public sector	4,257	1,350
of which: non-public sector	1,506	978
of which: financial sector	986	551
Spain	**1,917**	1,945
of which: public sector	1,239	1,347
of which: non-public sector	678	598
of which: financial sector	429	331
Total	**7,687**	4,286
of which: public sector	5,496	2,697
of which: non-public sector	2,190	1,590
of which: financial sector	1,415	889

FIG. 56 – INSURANCE SECTOR: OVERALL SOLVENCY REQUIREMENT FOR MARKET RISK

€ million	Dec. 31, 2016	Dec. 31, 2015
Interest-rate risk	917	715
Spread risk	1,339	1,259
Equity risk	1,320	1,266
Currency risk	196	272
Real-estate risk	139	123
Total (after diversification)	**2,761**	2,578

17.7. Summary and outlook

As in prior years, market risks were manageable in 2016 and did not have any detrimental impact on the risk position or financial performance of the DZ BANK Group.

However, the persistently low level of interest rates, combined with a possible resurgence of the crisis in Europe, does represent 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.

18. Counterparty default risk

18.1. Definition and causes

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 or for 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

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.

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 appropriate 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 was 0.1 percent, which was unchanged on the figure as at December 31, 2015.

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 2015, virtually all receivables arising from ceded reinsurance, which amounted to €30 million as at December 31, 2016 (December 31, 2015: €45 million), were due from entities with a rating of A or higher. In 2016, 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 2016 or in previous years.

Receivables more than 90 days past due as at the balance sheet date amounted to €34 million as at December 31, 2016 (December 31, 2015: €31 million).

18.3. Risk position

As at December 31, 2016, the **overall solvency requirement for counterparty default risk** amounted to €73 million (December 31, 2015: €67 million) with an **upper loss limit** of €110 million (December 31, 2015: €50 million). The upper loss limit was not exceeded at any point during 2016.

19. Operational risk

19.1. Definition and causes

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.

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 with a central coordination function. A committee of the crisis managers responsible for IT, premises, and human resources provides specialist support, ensures that emergency business continuity management activities are coordinated within the R+V subgroup, and reports to the Risk Committee on any major findings and any business continuity exercises that have been carried out.

Business continuity management ensures that R+V's operating activities can be maintained in the event of a crisis. Contingency planning also includes time-critical business processes and the resources needed to maintain them.

19.3. 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. It 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 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 and system response times) 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.

19.3.3. Legal risk

The matters mentioned in section 14.5.5. under 'Provisions recognized on the balance sheet' for the Bank sector essentially relate equally to the Insurance sector.

Legal disputes arising from the processing of insurance claims or benefit payments are included in the 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.

19.3.4. Tax risk

The matters mentioned in section 14.5.6. under 'Tax risk' for the Bank sector essentially relate equally to the Insurance sector.

19.4. Risk position

As at December 31, 2016, the **overall solvency requirement for operational risk** amounted to €512 million (December 31, 2015: €478 million). The **upper loss limit** applicable at the balance sheet date was set at €640 million (December 31, 2015: €470 million). This limit was not exceeded at any time during 2016.

20. Non-controlling interests in insurance companies and entities in other financial sectors

R+V includes in its measurement of risk a long-term equity investment in a Spanish insurance company, in which the investment is a non-controlling interest. The proportionate risk capital and proportionate own funds for the company concerned are added into R+V's calculations in accordance with Solvency II. At R+V, the non-controlling interests in insurance companies and 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. In particular, the relevant activities within risk management apply as described in the sections on life actuarial risk, market risk, counterparty default risk, and operational risk.

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. Here too, the relevant activities within risk management apply as described in the sections on life actuarial risk, market risk, counterparty default risk, and operational risk. 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, 2016, the overall solvency requirement for non-controlling interests in insurance companies and entities in other financial sectors stood at €101 million (December 31, 2015: €100 million). The **upper loss limit** was €120 million (December 31, 2015: €80 million). This limit was not exceeded at any time during 2016.

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Balance sheet as at December 31, 2016

ASSETS

€ million	(Notes)				Dec. 31, 2016	Jan. 1, 2016	pre-merger DZ BANK Dec. 31, 2015
1. Cash and cash equivalents							
a) Cash on hand				133		134	132
b) Balances with central banks				1,923		2,079	1,834
of which: with Deutsche Bundesbank		1,742				(2,016)	(1,771)
					2,056	2,213	1,966
2. Debt instruments from public-sector entities and bills of exchange eligible for refinancing by central banks							
a) Treasury bills, non-interest-bearing treasury notes and similar debt instruments from public-sector entities				236		278	278
					236	278	278
3. Loans and advances to banks	(02, 04, 05, 06, 07)						
a) Repayable on demand				22,954		8,271	7,515
b) Other loans and advances				95,141		92,751	73,804
					118,095	101,022	81,319
4. Loans and advances to customers	(02, 04, 05, 07)				**33,744**	31,710	22,647
of which: secured by mortgages		2,587				(2,503)	(99)
local authority loans		1,317				(1,288)	(680)
5. Bonds and other fixed-income securities	(02, 04, 05, 07, 12, 14)						
a) Money market instruments				139		146	146
aa) from public-sector issuers			–			–	–
ab) from other issuers			139			146	146
b) Bonds				45,452		48,021	39,147
ba) from public-sector issuers			16,224			17,745	14,086
of which: eligible as collateral at Deutsche Bundesbank		15,789				(17,336)	(13,688)
bb) from other issuers			29,228			30,276	25,061
of which: eligible as collateral at Deutsche Bundesbank		16,876				(16,255)	(12,698)
c) Own bonds				–		86	82
Nominal value		–				(84)	(81)
					45,591	48,253	39,375
6. Shares and other variable-yield securities	(02, 07, 12, 14)				**68**	56	55
6a. Trading assets	(02, 07, 13)				**38,187**	45,929	39,192
7. Long-term equity investments	(02, 12, 14)				**380**	1,630	363
of which: in banks		213				(345)	(204)
in financial services institutions		–				(28)	(–)
8. Shares in affiliated companies	(02, 12, 14)				**11,534**	10,299	9,510
of which: in banks		6,737				(5,948)	(5,322)
in financial services institutions		211				(213)	(213)
9. Trust assets	(08)				**1,025**	1,049	1,047
of which: trust loans		82				(101)	(99)
10. Intangible assets	(02, 14)						
b) Purchased concessions, industrial and similar rights and assets, including licenses for such rights and assets				45		50	35
d) Payments in advance				21		15	10
					66	65	45
11. Property, plant and equipment	(02, 14)				**439**	407	363
12. Other assets	(15)				**918**	807	689
13. Prepaid expenses and accrued income	(16)						
a) In connection with issuing and lending business				47		55	32
b) Other				38		34	11
					85	89	43
14. Deferred tax assets	(02, 17)				**891**	844	844
15. Excess of plan assets over pension liabilities					**0**	–	–
Total assets					**253,315**	244,651	197,736

EQUITY AND LIABILITIES

€ million	(Notes)				Dec. 31, 2016	Jan. 1, 2016	pre-merger DZ BANK Dec. 31, 2015
1. Deposits from banks	(02, 04, 05, 06)						
a) Repayable on demand				39,163		36,126	29,192
b) With agreed maturity or notice period				80,987		83,860	62,337
					120,150	**119,986**	**91,529**
2. Deposits from customers	(02, 04, 05)						
b) Other deposits				27,938		22,720	17,985
ba) Repayable on demand			14,113			9,462	6,366
bb) With agreed maturity or notice period			13,825			13,258	11,619
					27,938	**22,720**	**17,985**
3. Debt certificates issued including bonds	(02, 04, 05)						
a) Bonds issued				31,326		31,280	24,471
b) Other debt certificates issued				16,847		14,502	14,502
of which: commercial paper		16,847				(14,502)	(14,502)
					48,173	**45,782**	**38,973**
3a. Trading liabilities	(02, 13)				**31,966**	**31,889**	**29,167**
4. Trust liabilities	(08)				**1,025**	**1,049**	**1,047**
of which: trust loans		82				(101)	(99)
5. Other liabilities	(03, 19)				**1,428**	**670**	**496**
6. Deferred income and accrued expenses	(16)						
a) In connection with issuing and lending business				74		102	55
b) Other				3		3	1
					77	**105**	**56**
7. Provisions	(02)						
a) Provisions for pensions and other post-employment benefits				294		303	174
b) Provisions for taxes				141		199	166
c) Other provisions				940		694	594
					1,376	**1,196**	**934**
8. Subordinated liabilities	(02, 05, 20)				**6,119**	**6,304**	**5,564**
9. Profit-sharing rights	(21)				**292**	**292**	**292**
of which: maturing within two years		229				(18)	(18)
10. Fund for general banking risks					**4,515**	**4,515**	**3,685**
of which: special item in accordance with section 340e (4) HGB		268				(268)	(209)
11. Equity	(22, 23, 24)						
a) Subscribed capital				4,900		4,900	3,646
less the imputed par value of treasury shares				-243		-242	
				4,657		4,658	
b) Capital reserve				3,810		3,810	2,369
c) Revenue reserves				1,463		1,448	1,766
ca) Statutory reserve			105			105	105
cd) Other revenue reserves			1,358			1,343	1,661
d) Distributable profit				326		227	227
					10,256	**10,143**	**8,008**
Total equity and liabilities					**253,315**	**244,651**	**197,736**
1. Contingent liabilities	(40)						
b) Liabilities under guarantees and indemnity agreements*				8,700		8,868	6,264
c) Liability arising from assets pledged as security for third-party liabilities				105		105	–
					8,805	**8,973**	**6,264**
2. Other obligations	(36, 40)						
c) Irrevocable loan commitments				21,917		20,435	16,478
					21,917	**20,435**	**16,478**

* See also details under 'Other disclosures' in Notes 37 and 38.

Income statement for the period January 1 to December 31, 2016

€ million	(Notes)				2016	2015	pre-merger DZ BANK 2015
1. Interest income from	(02, 30)						
a) Lending and money market business			2,115			2,379	1,753
of which: negative interest rates on financial assets		74				(7)	(6)
b) Fixed-income securities and book-entry securities			880			984	828
of which: negative interest rates on financial assets		0				(–)	(–)
				2,995		3,363	2,581
2. Interest expense	(02)			2,385		2,772	2,155
					610	**591**	**426**
of which: positive interest rates on financial liabilities		70				(25)	(19)
expenses incurred by the unwinding of discounts on provisions		3				(3)	(3)
3. Current income from	(02, 30)						
a) Shares and other variable-yield securities				0		1	1
b) Long-term equity investments				77		258	145
c) Shares in affiliated companies				318		266	266
					395	**525**	**412**
4. Income from profit-pooling, profit-transfer and partial profit-transfer agreements					**346**	**374**	**350**
5. Fee and commission income	(30)			816		834	581
6. Fee and commission expenses				410		436	293
					406	**398**	**288**
7. Net trading income	(02, 30)				**563**	**324**	**233**
of which: expenses incurred by the unwinding of discounts on provisions		2				(3)	(3)
8. Other operating income	(02, 30, 32)				**147**	**122**	**102**
of which: income from the discounting of provisions		3				(0)	(0)
9. General and administrative expenses							
a) Staff expenses				677		621	500
aa) Wages and salaries			586			541	439
ab) Social security, post-employment and other employee benefit expenses			91			80	61
of which: post-employment benefit expenses		24				(15)	(10)
b) Other administrative expenses				781		646	538
					1,458	**1,267**	**1,038**
10. Amortization and write-downs on intangible assets, and depreciation and write-downs on property, plant and equipment					**56**	**50**	**40**

€ million	(Notes)				2016	2015	pre-merger DZ BANK 2015
11. Other operating expenses	(02, 32)				**126**	248	219
of which: expenses incurred by the unwinding of discounts on provisions		6				(150)	(139)
12. Write-downs on and allowances for losses on loans and advances and certain securities, and additions to provisions for losses on loans and advances	(02)				**313**	–	–
13. Income from the reversal of write-downs on loans and advances and certain securities, and from the reversal of provisions for losses on loans and advances	(02)				**–**	123	46
14. Write-downs on and allowances for long-term equity investments, shares in affiliated companies, and securities treated as fixed assets	(02)				**–**	553	491
15. Income from the reversal of write-downs on long-term equity investments, shares in affiliated companies, and securities treated as fixed assets	(02)				**117**	–	–
16. Income from reversal of the fund for general banking risks					**–**	565	565
17. Expenses from the transfer of losses					**20**	61	60
18. Result from ordinary activities					**611**	843	574
19. Extraordinary income	(33)				**1**	1	1
20. Extraordinary expenses	(33)				**343**	17	14
21. Extraordinary result					**-342**	-16	-13
22. Income taxes	(34)			-55		430	336
of which: from deferred taxes		-47				(328)	(328)
23. Other taxes not included under 'Other operating expenses'				1		-2	1
					-54	428	337
24. Net income for the year	(35)				**323**	399	224
25. Profit brought forward from 2015					**3**	3	3
26. Additions to revenue reserves							
c) To reserves provided for by the Articles of Association				–		35	–
d) To other revenue reserves				–		20	–
					–	55	–
27. Distributable profit before merger					**–**	347	227
of which: distributable profit of DZ BANK AG						(227)	(227)
of which: distributable profit of WGZ BANK AG						(120)	(–)
28. Dividend distributed to WGZ BANK shareholders from WGZ BANK's distributable profit					**–**	65	–
29. Increase in the capital reserve in connection with the merger					**–**	55	–
30. Distributable profit after merger					**326**	227	227

Notes

A. General disclosures

» 01 Basis of preparation

On January 1, 2016 (merger cut-off date), WGZ BANK AG Westdeutsche Genossenschafts-Zentralbank, Düsseldorf, (WGZ BANK) was merged into DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK), which is entered in the commercial register at the Frankfurt am Main local court under HRB 45651. The merger was entered in the commercial register on July 29, 2016. The assets of WGZ BANK were transferred in their entirety, together with all rights and obligations, to DZ BANK using the 'basis rollover' (Buchwertfortführung) method pursuant to section 24 of the German Transformation Act (UmwG).

The annual financial statements of DZ BANK for the year ended December 31, 2016 have been prepared in accordance with the requirements of the German Commercial Code (HGB) and the Statutory Order on the Accounts of Banks and Financial Services Institutions (RechKredV). At the same time, the annual financial statements comply with the provisions of the German Stock Corporation Act (AktG), the DG BANK Transformation Act, and the Articles of Association of DZ BANK.

DZ BANK has made use of available options to include disclosures in the notes to the financial statements rather than on the balance sheet and income statement. 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 accounting policies applied in 2016 were essentially the same as those used in 2015. Any changes compared with 2015 are set forth in Note 02 'Accounting policies'.

To enable a comparison between the disclosures in these annual financial statements and the prior-year disclosures as at December 31, 2015, the comparative figures as at the merger cut-off date of January 1, 2016 are presented in a separate column on the balance sheet. These were calculated by adding together the figures for DZ BANK and WGZ BANK as at December 31, 2015, adjusted for the effect of acquisition accounting and consolidation of intergroup balances. In the income statement, the 2015 figures for DZ BANK and WGZ BANK have been added together to provide the comparative values as at the merger cut-off date and are presented in a separate column labeled '2015'. Income and expenses were not consolidated. The prior-year figures for the pre-merger DZ BANK are presented in the column labeled 'pre-merger DZ BANK Dec. 31, 2015' on the balance sheet and in the column labeled 'pre-merger DZ BANK 2015' in the income statement.

In the notes to the financial statements, the prior-year figures for the pre-merger DZ BANK as the acquiring institution have not been included because of the merger and for reasons of clarity. The comparative figures are presented as at the merger cut-off date of January 1, 2016.

The prior-year figures do not reflect the measures implemented with effect from December 31, 2016 aimed at standardizing recognition and reporting.

» 02
Accounting policies

Assets and liabilities are measured in accordance with the general provisions in sections 252 et seq. HGB, taking account of the special provisions in sections 340 et seq. HGB applicable to banks.

Loans and advances to banks and customers

Loans and advances to banks and customers are carried at their principal amounts or at cost. The difference between the principal amount and the amount disbursed is recognized under deferred income and apportioned pro rata over the term of the loan. Promissory notes, registered bonds, and lease receivables acquired from third parties are recognized at cost.

Loans and advances, which are classified as current assets, are measured strictly at the lower of cost and market. The carrying amount for loans and advances to banks and customers includes promissory notes, registered bonds, and lease receivables assigned to the banking book and for which the bank has entered into interest-rate hedges as part of its overall risk management.

Provisions for lending risks comprise valuation allowances and provisions for credit risk and latent credit risk for all portfolios of loans and advances on the balance sheet and off-balance-sheet transactions at individual transaction level and/or on a portfolio basis. Based on specific measurement of each risk, provisions are recognized for all identifiable credit risks in the amount of the expected loss as dictated by prudent business practice. Latent credit risk is recognized in the form of portfolio loan loss allowances. The calculation of the portfolio loan loss allowance is based on the method for calculation of expected losses used for regulatory purposes. Other measurement factors are determined on the basis of internal parameters. DZ BANK also recognizes allowances for general banking risks as permitted by section 340f HGB.

Bonds and other fixed-income securities, and shares and other variable-yield securities

These line items on the balance sheet comprise long-term securities and securities in the liquidity reserve. Securities in the liquidity reserve are measured strictly in accordance with the principle of lower of cost and market. Long-term securities that are permanently impaired are written down to the lower of cost and market. In 2016, as in the previous year, temporarily impaired long-term securities were optionally measured at the lower of cost and market or their carrying amount was retained in accordance with section 340e (1) HGB. Under the item 'Bonds and other fixed-income securities', the carrying amount of marketable securities not measured at the lower of cost and market was €2,354 million.

For further information on the impact on net assets, financial position, and results of operations, please refer to Note 14 'Statement of changes in fixed assets'.

The fair value of securities is largely determined by reference to current market prices or by using generally accepted valuation methods on the basis of parameters that are broadly observable in the market, such as yield curves, spreads, volatility, or exchange rates. If specific parameters relevant to the measurement cannot be observed or cannot be determined directly from market data, the bank's own internal estimated parameters are used.

DZ BANK individually measures securities that are held either as long-term investments or in the liquidity reserve.

Premiums and discounts on the fixed-income securities in the banking book are recognized in accordance with the effective interest method. This resulted in interest expense of €107 million in 2016.

Dividend income from shares and other variable-yield securities that are held either as long-term investments or in the liquidity reserve is reported as current income from shares and other variable-yield securities.

Trading assets and trading liabilities

Trading assets and trading liabilities comprise bonds and other fixed-income securities, shares and other variable-yield securities, promissory notes, registered bonds, sale and repurchase agreements, and derivatives (interest-rate, currency, credit, and equity derivatives). DZ BANK reports its own structured issues of credit-linked notes and share certificates – because they are held for trading purposes – as trading liabilities in accordance with the criteria specified in accounting guidance statement 2 issued by the banking committee of the Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW) [Institute of Public Auditors in Germany].

Over-the-counter (OTC) derivatives held for trading purposes, for which variation margins have been agreed on the basis of bilateral master agreements in the Collateralization Annex and for which the variation margins have been paid daily, are netted and shown on the balance sheet on a net basis. For each master agreement, the netting covers the fair values of the OTC derivatives and the variation margin. As at December 31, 2016, this netting reduced loans and advances to banks by €5,690 million, loans and advances to customers by €428 million, the carrying amount of trading assets by €15,341 million, deposits from banks by €2,527 million, deposits from customers by €373 million, and the carrying amount of trading liabilities by €18,559 million. The amounts are presented on a gross basis in Note 26 'List of derivatives recognized at fair value by product area' and in Note 27 'List of derivatives recognized at fair value by counterparty structure'.

The fair values of OTC interest-rate derivatives that are traded through a central counterparty have also been netted with the carrying amounts of the underlying derivatives positions contained in the trading assets and trading liabilities line items on the balance sheet. As at December 31, 2016, this netting reduced the carrying amount of loans and advances to banks by €105 million, the carrying amount of loans and advances to customers by €335 million, the carrying amount of trading assets by €6,948 million, the carrying amount of other assets by €1,729 million, and the carrying amount of trading liabilities by €9,117 million. As part of the clearing service for customers of DZ BANK, the fair values of OTC interest-rate derivatives that are traded through a central counterparty are recognized and netted with the carrying amounts of the underlying derivatives positions contained in the trading assets and trading liabilities line items on the balance sheet.

Financial instruments held for trading purposes are measured at their fair value in accordance with section 340e (3) HGB in conjunction with section 255 (4) HGB, minus any risk

adjustments and/or plus any risk premiums. To ensure that the income statement only includes unrealized gains from positions that are substantially closed, a risk adjustment is applied to the net gains and losses. This adjustment comprises a value-at-risk adjustment, a mathematical calculation that describes the maximum potential loss that is considered to be highly probable. An internal model is used to calculate the value-at-risk adjustment based on regulatory requirements. It applies the 10-day value-at-risk adjustment required by the regulator. The calculation of the value-at-risk adjustment was based on an observation period of 250 trading days and a confidence level of 99 percent. The value-at-risk adjustment amounted to €17 million.

Where markets are inactive, generally accepted valuation methods are used to determine fair value. When measuring its structured products, DZ BANK uses models that are based on certain distribution assumptions and/or smile modeling. Fair value is determined on the basis of parameters that are broadly observable in the market; only in justified exceptional cases is it determined using parameters that are not observable in the market. In order to determine fair value reliably, measurement adjustments are also made for uncertain measurements.

Fair value gains and losses, current interest payments and dividend income from securities held for trading purposes, current payments arising from derivatives and from sale and repurchase agreements and securities lending transactions entered into for trading purposes, promissory notes and other receivables, foreign exchange, and precious metals – including any deferrals carried out – are all recognized as part of the net trading result. In addition, the funding costs attributable to trading assets and trading liabilities in the form of internal fixed-term deposits and imputed overnight rates are also reported as part of the net trading result.

Securities lending

For securities involved in securities lending transactions, the accounting treatment of securities lending is the same as the accounting treatment for genuine sale and repurchase agreements (i.e. agreements in which the buyer is under an obligation to sell back the securities) in accordance with section 340b HGB. The securities remain on the balance sheet. Borrowed securities are not recognized on the balance sheet.

Long-term equity investments and shares in affiliated companies

Long-term equity investments and shares in affiliated companies are measured at amortized cost or, if expected to be permanently impaired, at the lower of cost and fair value. If the reasons for a previous write-down no longer exist, the write-down is reversed so that the asset is measured at fair value. However, the reversal must not result in a carrying amount higher than the original cost.

The merger of WGZ BANK into DZ BANK resulted in changes to the line items on the balance sheet and to the disclosures on long-term equity investments and affiliated companies in respect of the classification of the affected entities. Their reclassification is not reflected in the disclosures as at January 1, 2016.

Property, plant and equipment, and intangible assets

Property, plant and equipment is measured at cost and reduced by depreciation over its estimated useful life. Useful life is based on the depreciation tables published by the German tax authorities.

Low-value assets with an individual net value of up to €150 are written off in full in the year of acquisition and expensed. In the case of assets with an individual net value between €150 and €1,000, the aggregate item that needs to be recognized on an annual basis for tax purposes has been included in the HGB financial statements to simplify matters. In accordance with tax rules, annual aggregate items with overall carrying amounts that are not material are depreciated at a flat rate of 20 percent in the year of recognition and then in each of the 4 subsequent years.

Office furniture and equipment including operating equipment is depreciated on a straight-line basis.

Assets are written down if they are considered to be impaired on a permanent basis. If the reasons for a previous write-down no longer exist, the write-down is reversed.

Intangible fixed assets are measured at cost and amortized on a straight-line basis. A useful life of 3 to 10 years is used as the basis for the amortization.

Deferred taxes

Using the option to recognize deferred tax assets provided for in section 274 (1) sentence 2 HGB, the bank recognized the excess of deferred tax assets after they had been offset against deferred tax liabilities, applying a standard tax rate of 31.155 percent for the purposes of trade tax and corporation tax (including the solidarity surcharge). The carrying amounts also included the deferred taxes from measurement differences at subsidiaries that form a tax group with the bank. Overall, this resulted in an excess of deferred tax assets recognized on DZ BANK's balance sheet, the bulk of which is attributable to subsidiaries. For its measurement of the excess of deferred tax assets, the bank assumes that the profit-and-loss transfer agreements with its subsidiaries will continue and bases its income planning on a 5-year planning horizon. In accordance with IAS 12.29(a), when calculating the expected future tax benefits from the measurement differences in existence at the balance sheet date, only those measurement differences are recognized that are likely to disappear again in this period and will not be replaced with new measurement differences. The calculation of deferred tax assets takes account of tax loss carryforwards in the amount of the losses expected to be offset within the next 5 years.

Liabilities

Liabilities are carried at the settlement amount. The difference between the notional amount and the amount disbursed is recognized under prepaid expenses and apportioned pro rata over the term of the loan. Capital-related bonds, in which interest payments or repayments of principal are not solely subject to interest-rate risk, are recognized at their nominal amounts, with any related options being recognized and measured separately.

Provisions

Defined benefit obligations are calculated in accordance with actuarial principles. Their computation is based on the projected unit credit method. The discount rate used was forecast on the basis of the interest rate published by Deutsche Bundesbank as at November 30, 2016. It corresponds to the average market interest rate over the past 10 years (previously 7 years) as at December 31, 2016 (4.01 percent) for a residual maturity of 15 years. In Germany, the biometric tables used in these calculations are the 2005 G mortality tables published by Professor Dr. Klaus Heubeck, Cologne. Measurement is based on anticipated annual rates of increase of 1.8 percent for salaries and 1.75 percent for pensions. In order to provide cover for its defined benefit obligations, DZ BANK has transferred assets to DZ BANK Pension Trust e.V., Frankfurt am Main, which acts as a trustee on behalf of the pension beneficiaries. The valuation of defined benefit obligations outside Germany is based on the applicable country-specific biometric factors and parameters. In the year under review, DZ BANK additionally took over the total indirect defined benefit obligations of the former WGZ BANK as direct defined benefit obligations. In the course of this switch, the pension assets of WGZ BANK Unterstützungskasse e.V., Düsseldorf, were transferred to DZ BANK Pension Trust e.V. This resulted in a non-recurring expense of €17 million in the income statement. Pension plans and the bank's early-retirement obligations gave rise to provisions for pensions and other post-employment benefits of €294 million.

DZ BANK recognizes provisions for current taxes in accordance with German tax law.

It recognizes its other provisions at the amounts needed to settle contingent liabilities and/or anticipated losses as dictated by prudent business practice.

Provisions that are recognized for more than 1 year are discounted at the average market interest rate for the past 7 years that corresponds to their residual maturity. It is calculated and published by Deutsche Bundesbank.

Income from the discounting of provisions for banking business and expenses incurred by the unwinding of discounts on such provisions are reported as interest income and interest

expenses respectively. If the provisions are related to trading activities, the income resulting from discounting and expenses incurred by the unwinding of discounts are shown in the net trading result. Income from the discounting of residual provisions and expenses incurred by the unwinding of discounts on such provisions are reported as other operating income and other operating expenses respectively.

Additional regulatory Tier 1 capital instruments

Owing to their structure, the additional Tier 1 instruments (AT1 bonds) that have been issued are classified as debt. They are recognized at their settlement value under the subordinated liabilities line item on the balance sheet. The interest cost is accrued on the basis of the expected interest payments to the bond holders. The accrued interest is also recognized under the subordinated liabilities line item on the balance sheet.

Interest-linked contracts of the banking book

In accordance with the principles of write-downs to anticipate identifiable expected losses, evidence was provided for all on-balance-sheet and off-balance-sheet interest-linked financial instruments of the banking book to show that no losses will be incurred on contracted interest-linked items in the future. This was done using the present value/carrying amount method. In this method, the carrying amounts of the interest-bearing transactions of the banking book are offset against the interest-rate-related present values, taking account of the associated costs of managing the risk and the portfolio. Any remaining shortfall after offsetting would require a corresponding provision to be recognized. As at December 31, 2016, there was no need to recognize a provision for anticipated losses pursuant to section 340a HGB in conjunction with section 249 (1) sentence 1 HGB.

Miscellaneous

Expenses in connection with investments are offset against investment income in accordance with section 33 RechKredV in conjunction with section 340c (2) HGB. Fair value gains and losses on the measurement of loans and advances and the securities in the liquidity reserve are reported as a net figure in accordance with section 32 RechKredV in conjunction with section 340f (3) HGB.

The fund for general banking risks amounted to €4,515 million as at December 31, 2016 (January 1, 2016: €4,515 million). This fund for general banking risks includes a special item in accordance with section 340e (4) HGB.

The methods used to recognize and measure internal transactions are the same as those applied to external transactions. These transactions are shown as netted amounts in the respective line items on the balance sheet.

Non-trading credit derivatives in which DZ BANK is the protection buyer and for which hedge accounting is not applied, along with non-trading protection-seller transactions, are measured individually and in accordance with the HGB imparity principle as required by accounting guidance statement 1 issued by the banking committee of IDW. Like guarantees, non-trading protection-seller transactions for individual exposures are subject to an evaluation of the necessity for loss allowances. The transactions are shown under contingent liabilities or, in the case of loss allowances being recognized, under other provisions.

» 03 Currency translation

Assets and liabilities denominated in foreign currencies as well as claims and delivery obligations under currency transactions are translated in compliance with section 256a HGB in conjunction with section 340h HGB. This legislation requires that foreign currencies be translated at the middle spot exchange rate on the balance sheet date.

All currency exposures arising in connection with trading assets and trading liabilities are recognized and measured in accordance with the rules governing trading assets and trading liabilities. The corresponding exchange gains and losses on foreign-currency transactions designated as trading assets and trading liabilities are reported as net trading income on the income statement.

Under the strategy for managing currency risk, DZ BANK's foreign currency exposures and foreign-currency transactions are deemed to be specifically covered in the same currency. Assets are deemed to be specifically covered in the same currency if they are matched by liability items, forward transactions, or options. The excess fair value measurement of these derivatives is reported as an offsetting item for currency translation under 'Other liabilities'. The fair value gains and losses on non-trading transactions that are specifically covered in the same currency are shown on a net basis under other operating income. Where DZ BANK has entered into currency swaps in connection with the hedging of interest-bearing balance sheet items, the swap income and expenses were treated as interest income and expense in 2016, reflecting the nature of the income and expense involved.

Measurement in respect of transactions and exposures that are not specifically covered in the same currency is based on the HGB imparity principle, i.e. unrealized losses are recognized, but any unrealized gains are not recognized. The resulting fair value gains and losses are reported as other operating expenses.

B. Balance sheet disclosures

» 04 Maturity structure

ASSET ITEMS

€ million	Dec. 31, 2016	Jan. 1, 2016
Other loans and advances to banks	**95,141**	**92,751**
up to 3 months	10,403	10,405
between 3 months and 1 year	11,146	9,892
between 1 year and 5 years	36,067	36,966
more than 5 years	37,525	35,488
Loans and advances to customers	**33,744**	**31,710**
up to 3 months	6,524	6,017
between 3 months and 1 year	3,157	3,038
between 1 year and 5 years	13,222	12,263
more than 5 years	8,331	8,245
no fixed maturity	2,510	2,147
Bonds and other fixed-income securities	**45,591**	**48,253**
of which: maturing in subsequent year	8,301	7,155

LIABILITY ITEMS

€ million	Dec. 31, 2016	Jan. 1, 2016
Deposits from banks with agreed maturity or notice period	**80,987**	**83,860**
up to 3 months	11,526	16,337
between 3 months and 1 year	7,484	7,133
between 1 year and 5 years	25,694	26,035
more than 5 years	36,283	34,355
Deposits from customers		
Other deposits from customers with agreed maturity or notice period	**13,825**	**13,258**
up to 3 months	3,658	5,324
between 3 months and 1 year	3,029	732
between 1 year and 5 years	1,764	1,342
more than 5 years	5,374	5,860
Debt certificates issued including bonds		
Bonds issued	**31,326**	**31,280**
of which: maturing in subsequent year	11,260	9,170
Other debt certificates issued	**16,847**	**14,502**
up to 3 months	10,574	11,628
between 3 months and 1 year	6,273	2,874

» 05 Affiliated companies and other long-term investees and investors

Loans and advances to and deposits from affiliated companies:

€ million	Dec. 31, 2016	Jan. 1, 2016
Loans and advances to banks	28,659	24,190
Loans and advances to customers	5,061	4,663
Bonds and other fixed-income securities	9,906	10,657
Deposits from banks	8,686	7,826
Deposits from customers	1,957	1,460
Debt certificates issued including bonds	1,334	1,233
Subordinated liabilities	1,433	1,418

Loans and advances to and deposits from other long-term investees and investors:

€ million	Dec. 31, 2016	Jan. 1, 2016
Loans and advances to banks	38,679	37,681
Loans and advances to customers	577	519
Bonds and other fixed-income securities	3,300	2,578
Deposits from banks	32,563	35,065
Deposits from customers	562	411
Debt certificates issued including bonds	20,186	14,963
Subordinated liabilities	1,050	869

A disproportionate amount of time, effort, and expense would have been required to determine the prior-year figure for the former WGZ BANK relating to debt certificates including bonds in respect of other long-term investees and investors. For this reason, no such disclosures have been made. The prior-year figure thus relates only to the pre-merger DZ BANK.

The list of shareholdings compiled in accordance with section 285 no. 11 HGB is shown in Note 51.

» 06 Loans and advances to and deposits from affiliated banks

Loans and advances to and deposits from banks include the following amounts:

€ million	Dec. 31, 2016	Jan. 1, 2016
Loans and advances to affiliated banks	68,057	67,543
Deposits from affiliated banks	49,186	49,072

» 07
Subordinated assets

The following balance sheet items include subordinated assets in the amounts stated:

€ million	Dec. 31, 2016	Jan. 1, 2016
Loans and advances to banks	**1,433**	1,404
of which: to affiliated companies	1,175	1,363
to investees	1	–
Loans and advances to customers	**119**	57
Bonds and other fixed-income securities	**573**	361
of which: to affiliated companies	431	179
Shares and other variable-yield securities	**2**	2
Trading assets	**158**	364
of which: to affiliated companies	4	21
to investees	14	6
Total	**2,285**	2,188

» 08
Trust activities

Total trust assets and trust liabilities are broken down as follows:

€ million	Dec. 31, 2016	Jan. 1, 2016
Trust assets		
Loans and advances to banks	82	100
Loans and advances to customers	0	1
Long-term equity investments	943	948
Total	**1,025**	1,049

€ million	Dec. 31, 2016	Jan. 1, 2016
Trust liabilities		
Deposits from banks	82	101
Deposits from customers	943	948
Total	**1,025**	1,049

» 09 Foreign currency

Assets and liabilities denominated in foreign currency are as follows:

€ million	Dec. 31, 2016	Jan. 1, 2016
Assets	25,888	23,249
Liabilities	39,696	31,046

» 10 Sale and repurchase agreements

The carrying amount of assets subject to sale and repurchase agreements as at December 31, 2016 was €5,246 million (January 1, 2016: €5,747 million).

» 11 Assets assigned as collateral

The following table lists liabilities for which assets in the amount shown have been pledged as collateral:

€ million	Dec. 31, 2016	Jan. 1, 2016
Deposits from banks	50,957	52,385
Deposits from customers	115	–
Debt certificates issued including bonds	520	508
Trading liabilities	5,261	5,140
Total	**56,853**	**58,033**

The amount pledged as collateral for exchange-traded forward transactions, in connection with collateral agreements as part of OTC trading business, and for securities lending transactions was €13,633 million (January 1, 2016: €13,766 million).

» 12 Marketable securities

The following asset items include marketable securities in the amounts shown:

€ million	Dec. 31, 2016	Jan. 1, 2016
Bonds and other fixed-income securities	**45,591**	**48,253**
of which: listed on a stock exchange	39,768	42,124
Shares and other variable-yield securities	**10**	**11**
of which: listed on a stock exchange	10	11
Long-term equity investments	**32**	**2**
of which: listed on a stock exchange	–	0
Shares in affiliated companies	**3,624**	**3,304**
of which: listed on a stock exchange	537	537

» 13 Trading assets and trading liabilities

The table below shows a breakdown of trading assets and trading liabilities:

€ million	Dec. 31, 2016	Jan. 1, 2016
Trading assets		
Derivatives	11,414	11,691
Receivables	15,390	18,270
Bonds and other fixed-income securities	10,687	15,283
Shares and other variable-yield securities	1,046	1,020
Other (risk adjustments)	-350	-335
Total	**38,187**	**45,929**

€ million	Dec. 31, 2016	Jan. 1, 2016
Trading liabilities		
Derivatives	5,649	7,470
Liabilities	26,317	24,419
Total	**31,966**	**31,889**

» 14 Statement of changes in fixed assets

The changes in fixed assets were as follows:

INTANGIBLE ASSETS AND PROPERTY, PLANT AND EQUIPMENT

€ million	Intangible assets	Land and buildings	Office furniture and equipment
Cost as at Jan. 1, 2016	418	424	212
Additions	41	35	22
Disposals	21	–	29
Reclassifications	–	–	–
Cost as at Dec. 31, 2016	438	459	205
Reversals of write-downs	–	–	0
Depreciation, amortization and write-downs as at Jan. 1, 2016	353	78	151
Additions	31	8	17
Disposals/reclassifications	12	–	29
Depreciation, amortization and write-downs as at Dec. 31, 2016	372	86	139
Net carrying amount as at Dec. 31, 2016	66	373	66
Net carrying amount as at Jan. 1, 2016	65	346	61

The carrying amount of the land and buildings used by DZ BANK for its own operations as at December 31, 2016 was €211 million (January 1, 2016: €174 million).

INVESTMENTS

€ million	Long-term securities	Long-term equity investments	Shares in affiliated companies
Change	-3,164	-1,250	1,235
Carrying amount as at Dec. 31, 2016	36,834	380	11,534
Carrying amount as at Jan. 1, 2016	39,998	1,630	10,299

The changes relating to long-term equity investments and shares in affiliated companies largely resulted from the reclassification of the affected entities in connection with the merger of WGZ BANK into DZ BANK.

The fair value of financial instruments reported under investments and reported at a carrying amount exceeding their fair value because write-downs have not been recognized in accordance with section 253 (3) sentence 4 HGB was €2,220 million (carrying amount: €2,354 million) for bonds and other fixed-income securities. For fixed-income securities, the present value of the estimated future cash flows was compared with the carrying amount to ascertain whether they are actually impaired. In the case of asset-backed securities (ABSs), DZ BANK carried out detailed cash flow analyses related to the receivables in the securitization pool taking into account the waterfall structure of each ABS tranche. The assessment of impairment was also based on previous experience with the issuers in question and on the relevant economic forecasts. Since the impairment of these securities was only temporary, the securities were not written down to fair value.

» 15 Other assets

Other assets largely include tax credits of €451 million (January 1, 2016: €422 million) and variation margin payments arising from derivatives and repos of €361 million (January 1, 2016: €260 million).

» 16 Prepaid expenses/accrued income and deferred income/accrued expenses

€ million	Dec. 31, 2016	Jan. 1, 2016
Prepaid expenses/accrued income		
Discount on deposits	13	35
Premium on loans and advances	34	20
Other prepaid expenses/accrued income	38	34
Total	**85**	**89**

€ million	Dec. 31, 2016	Jan. 1, 2016
Deferred income/accrued expenses		
Discount on loans and advances	11	28
Premium on issues business	63	74
Other deferred income/accrued expenses	3	3
Total	**77**	**105**

» 17 Deferred tax assets

This line item included deferred tax assets in accordance with section 274 HGB amounting to €891 million as at December 31, 2016 (January 1, 2016: €844 million). Deferred tax assets were recognized primarily in respect of the fund for home savings risk at Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, in respect of technical provisions of the companies R+V Versicherung AG, Wiesbaden, and R+V Allgemeine Versicherung AG, Wiesbaden, and in respect of other temporary balance sheet differences at DZ BANK and the subsidiaries that form a tax group with it. Deferred taxes are measured using the national and entity-specific tax rates expected to apply at the time of realization. The income tax group was subject to a standard tax rate of 31.155 percent (trade tax of 15.33 percent and corporation tax/solidarity surcharge of 15.825 percent). Deferred taxes at branches outside Germany were measured at the statutory rates applicable in the countries concerned, which range from 20.00 percent to 36.01 percent.

» 18
Netting of assets and liabilities

The table below shows the cost and the fair value of netted assets that are protected from the claims of all other creditors and are used solely to settle liabilities arising from pension obligations; it also shows the amount needed to settle these netted liabilities. It also shows the pertinent netted income and expenses resulting from discounting and from the netted assets.

€ million	Dec. 31, 2016	Jan. 1, 2016
Cost of netted assets	714	707
Fair value of netted assets	801	751
Amount needed to settle the netted liabilities	1,054	897
Netted expenses	25	151
Netted income	47	19

The offsetting of defined benefit obligations against individual plan assets plus the defined benefit obligations for unfunded pension plans of €39 million resulted in total provisions for pensions of €292 million.

» 19
Other liabilities

The other liabilities of €1,428 million (January 1, 2016: €670 million) include, in particular, currency translation liabilities of €1,064 million (January 1, 2016: €264 million) and variation margins received arising from derivatives and repos of €223 million (January 1, 2016: €145 million).

The prior-year figure includes the accrued interest not yet due for payment amounting to €12 million on subordinated liabilities of the former WGZ BANK. In addition, a liability of €65 million was recognized for the dividend distribution to the shareholders of WGZ BANK.

» 20
Subordinated liabilities

There are no early redemption obligations in respect of the subordinated capital. In the event of insolvency or liquidation, all rights in connection with these liabilities, including rights to interest, are subordinated to the claims of all non-subordinated creditors.

The subordinated liabilities carried an average interest rate of 3.50 percent (2015: 2.70 percent for the pre-merger DZ BANK) and had initial maturities of between 5 and 30 years.

Subordinated liabilities are issued in the form of fixed-income and variable-yield securities, promissory notes, registered bonds, and a convertible bond.

The interest expense for the liabilities reported under this item amounted to €211 million in 2016 (2015: €213 million).

Accrued interest not yet due for payment amounting to €81 million (January 1, 2016: €69 million for the pre-merger DZ BANK) is included within the subordinated liabilities balance sheet item. The accrued interest not yet due for payment of the former WGZ BANK was recognized under other payables on its balance sheet as at December 31, 2015.

To strengthen its regulatory Tier 1 capital, DZ BANK issued AT1 bonds with a total nominal value of €750 million on November 11, 2015. The AT1 bonds are split into four types depending on their interest-rate arrangements (types A to D, with type A having two tranches and the other types each having one tranche) and establish unsecured subordinated liabilities that meet the requirements in the Capital Requirements Regulation (CRR).

The bearer bonds are bound by the terms and conditions in the information memorandum, which include an indefinite term to maturity and a unilateral right of cancellation for the issuer. As a result, DZ BANK may terminate each tranche of the bond in its entirety, but not parts thereof, as it chooses, either at the first possible maturity date (August 1, 2021 / August 1, 2026) or thereafter at any interest payment date. Furthermore, the issuer may exercise its right of cancellation prematurely if certain regulatory or tax reasons arise. In any case, cancellation requires the consent of the regulator.

In the event of cancellation, AT1 bonds are repaid at their nominal value. In some circumstances, the repayment amount may be lower than the original nominal value if the value had been written down due to a trigger event and the write-down had not subsequently been reversed in full. Such a trigger event occurs if the common equity Tier 1 capital ratio of DZ BANK and the DZ BANK Group falls below 7.00 percent. Under certain conditions, the write-downs on the instruments may be reversed to the full original nominal value in subsequent financial years.

Depending on their type, the AT1 bonds have an annual floating or fixed interest rate from the day of issue until August 1, 2021 / August 1, 2026. In subsequent periods, the interest rate will be reset on the basis of 12-month Euribor / the 5-year euro mid-swap rate plus a margin.

Interest payments are generally at the discretion of the issuer. They may be canceled, either wholly or in part, depending on the items eligible for distribution or by order of the responsible regulator. Interest payments are not cumulative; canceled or reduced payments will not be made up in subsequent periods. Interest of €25 million was paid on August 1, 2016.

The accrued (not yet due) interest for the AT1 bonds amounted to €14 million as at December 31, 2016 (January 1, 2016: €5 million).

In respect of the registered bond with a conversion right that was issued in 2014 with a nominal value of €128 million, there will be an option of voluntary conversion by the creditors or mandatory conversion by the issuer after the end of December 3, 2019. One unit can be converted into 110 shares. The bond has a coupon of 5.0 percent. Early redemption by the issuer is possible at any time if necessary for regulatory reasons. There are no other plans or agreements to convert these liabilities into equity; there are no other early redemption obligations.

» 21 Profit-sharing rights

Profit-sharing rights also incur a share of losses of up to their full amount. Interest payments are subject to the availability of distributable profit. Claims by holders of profit-sharing rights to the repayment of the capital are subordinated to the claims of other creditors. DZ BANK has issued the following bearer profit-sharing rights:

Year of issue	Nominal amount	Coupon	Maturity
	€ million	%	
2008	139	7.40	2018
2008	72	3.56[1]	2018

1 Dependent on market interest rate.

DZ BANK has issued registered profit-participation certificates with a volume of €63 million. Total registered profit-participation certificates comprise 6 separate issues with an original maturity of 16 years and a coupon of 7.06 percent each.

The total interest expense in respect of profit-sharing rights in 2016 was €17 million (January 1, 2016: €18 million).

Accrued interest not yet due for payment amounting to €18 million (January 1, 2016: €18 million) is included within the profit-sharing rights balance sheet item.

» 22
Changes in equity

The subscribed capital of DZ BANK consists of 1,884,591,900 registered non-par-value shares each with an imputed value of €2.60. DZ BANK held 93,247,143 of these non-par-value shares as treasury shares, which equates to a total imputed amount of €242,442,571.80 of the share capital, or 4.947869 percent. Specifically, DZ BANK indirectly received 93,105,410 non-par-value shares (total imputed amount of €242,074,066 of the subscribed capital) upon entry of the merger in the commercial register on July 29, 2016. Before the merger, these shares had been held indirectly by WGZ BANK in DZ BANK. These shares equate to 4.940348 percent of the subscribed capital. Furthermore, DZ BANK purchased 141,682 non-par-value shares (total imputed amount of €368,373.20 of the subscribed capital, or 0.007518 percent) from the former shareholders of WGZ BANK in August 2016 as part of the cash settlement offer under the merger agreement. The purchase price for the treasury shares was €9.81 per purchased non-par-value share. Taking account of the subscription right ratio, the capital increase resulted in a surplus of 51 non-par-value shares (total imputed amount of €132.60 of the subscribed capital, or 0.000003 percent) that were posted at their imputed value. The treasury shares held are deducted directly from equity. This reduces the subscribed capital by a notional amount of €243 million. All other shares in issue are fully paid-up.

The changes in equity were as follows:

€ million	Dec. 31, 2015	Additions/ (-) Withdrawals	Jan. 1, 2016	Additions/ (-) Withdrawals	Dec. 31, 2016
Subscribed capital	3,646	1,012	4,658	-1	**4,657**
Capital reserve	2,369	1,441	3,810	–	**3,810**
Revenue reserves	1,766	-318	1,448	15	**1,463**
Statutory reserve	105	–	105	–	105
Other revenue reserves	1,661	-318	1,343	15	1,358
Distributable profit	227	–	227	99	**326**
Dividend	224	–	224	-224	–
Profit carried forward	3	–	3	–	3
Net income for 2016	–	–	–	323	323
Total equity	8,008	2,135	10,143	113	**10,256**

The Annual General Meeting passed a resolution to increase the subscribed capital of DZ BANK by €1,253,672,030.00 from €3,646,266,910.00 to €4,899,938,940.00 to facilitate the merger with WGZ BANK. This capital increase was carried out by issuing shares in DZ BANK. The exchange ratio was based on the exchange ratio of 1:67.5984 set forth in the merger agreement and confirmed by the auditors of the merger. The capital increase by way of an issue of 482,181,550 registered non-par-value shares at a value of €9.81 per share was entered in the commercial register of the Frankfurt am Main local court on July 29, 2016. Dividends are payable on the new shares from January 1, 2016.

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

a) issuing new shares to employees of the corporation (employee shares),

b) 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 €2.60 per DZ BANK share),

c) 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').

The Board of Managing Directors did not make use of any of this authorized action in 2016.

Contingent capital

The share capital is to be contingently raised by up to €49,976,173.00 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 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.

» 23
Disclosures on shareholders

At the end of 2016, 99.2 percent of DZ BANK's share capital was held by cooperative enterprises. These cooperative enterprises include the cooperative banks and other legal entities and trading companies economically associated with the cooperative movement or cooperative housing sector.

» 24
Disclosure pursuant to section 20 AktG

According to a notification pursuant to section 20 (1) AktG, which it submitted in August 2009, DZ Beteiligungs-AG & Co. KG Baden-Württemberg, Stuttgart, now operating under the name DZ Beteiligungs-GmbH & Co. KG Baden-Württemberg, Karlsruhe, holds more than a quarter of the shares in DZ BANK.

» 25
Amounts not allowed to be distributed as dividends

The table below gives a breakdown of the total amount that is not allowed to be distributed as a dividend pursuant to section 268 (8) HGB:

€ million	Dec. 31, 2016	Jan. 1, 2016
Recognition of deferred taxes	891	844
Recognition of assets at fair value	87	44

The difference between the carrying amount of provisions for defined benefit obligations calculated using the relevant average market interest rate for the past 10 years and the carrying amount of these provisions based on the relevant average market interest rate for the past 7 years, which is not allowed to be distributed as dividends pursuant to section 253 (6) HGB, was €120 million as at December 31, 2016.

The total amounts of €1,098 million that were not allowed to be distributed as dividends were more than offset by readily available revenue reserves of €1,358 million. Consequently, the distributable profit of €326 million was not prohibited from being paid out as a dividend.

The table below shows a list of the derivatives recognized at fair value by product area:

» 26
List of derivatives recognized at fair value by product area

	Nominal amount					Fair value			
	Time to maturity			Total amount		Positive		Negative	
€ million	≤ 1 year	> 1–5 years	> 5 years	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016
INTEREST-LINKED CONTRACTS	**118,640**	**331,440**	**376,305**	**826,385**	**822,286**	**21,080**	**22,541**	**19,819**	**22,341**
OTC products									
Forward rate agreements	8,501	–	–	8,501	9,398	0	0	0	0
Interest-rate swaps (same currency)	93,481	287,287	351,956	732,724	723,642	18,845	20,316	16,090	18,539
Interest-rate options – call	7,279	17,905	9,841	35,025	34,992	2,099	2,092	47	29
Interest-rate options – put	6,993	26,047	14,508	47,548	48,168	136	133	3,682	3,773
Exchange-traded products									
Interest-rate futures	2,386	201	–	2,587	6,086	–	0	–	0
CURRENCY-LINKED CONTRACTS	**27,522**	**4,355**	**161**	**32,038**	**80,746**	**567**	**897**	**599**	**820**
OTC products									
Forward forex transactions	18,946	2,836	119	21,901	68,257	446	784	455	686
Forex options – call	3,615	609	–	4,224	5,722	28	28	25	14
Forex options – put	4,550	899	16	5,465	6,164	31	19	52	44
Exchange-traded products									
Forex futures	182	–	–	182	209	–	–	–	–
Forex options	229	11	26	266	394	62	66	67	76
SHARE-/INDEX-LINKED CONTRACTS	**12,594**	**6,440**	**1,615**	**20,649**	**18,217**	**820**	**777**	**1,327**	**1,257**
OTC products									
Share/index options – call	653	146	35	834	783	59	61	0	–
Share/index options – put	171	179	3	353	525	0	0	22	48
Other share/index contracts	925	2,333	1,077	4,335	4,582	52	47	120	124
Exchange-traded products									
Share/index futures	406	13	0	419	438	–	0	–	0
Share/index options	10,439	3,769	500	14,708	11,889	709	669	1,185	1,085

€ million	Nominal amount					Fair value			
	Time to maturity			Total amount		Positive		Negative	
	≤ 1 year	> 1–5 years	> 5 years	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016
OTHER CONTRACTS	**7,873**	**24,165**	**13,676**	**45,714**	**41,630**	**1,378**	**1,313**	**2,393**	**2,425**
OTC products									
Cross-currency swaps	7,068	23,990	13,615	44,673	39,721	1,265	1,192	2,269	2,286
Precious metal contracts	2	5	–	7	7	–	–	0	1
Commodities contracts	294	78	–	372	674	0	5	1	6
Exchange-traded products									
Futures	211	24	0	235	247	0	1	1	1
Options	298	68	61	427	981	113	115	122	131
CREDIT DERIVATIVES	**9,330**	**13,288**	**4,031**	**26,649**	**31,748**	**213**	**248**	**98**	**162**
Protection buyer									
Credit default swaps	4,249	4,829	435	9,513	13,073	18	33	72	119
Total return swaps	93	45	–	138	151	5	2	–	1
Protection seller									
Credit default swaps	4,988	8,414	3,596	16,998	18,524	190	213	26	42
Total	175,959	379,688	395,788	951,435	994,627	24,058	25,776	24,236	27,005

A substantial proportion of the transactions listed were entered into for the purposes of hedging interest-rate, exchange-rate, market, or credit risk.

The table below shows a list of the derivatives recognized at fair value by counterparty structure:

» 27 List of derivatives recognized at fair value by counterparty structure

€ million	Fair value			
	Positive		Negative	
	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016
OECD central governments	310	358	385	426
OECD banks	20,087	22,092	21,078	24,176
OECD financial services institutions	141	107	338	219
Other companies, private individuals	3,496	3,196	2,249	1,971
Non-OECD central governments	0	0	–	–
Non-OECD banks	24	23	186	213
Total	24,058	25,776	24,236	27,005

The table below shows a list of the derivatives not recognized at fair value by product area:

» 28
List of derivatives not recognized at fair value by product area

	Nominal amount					Fair value			
	Time to maturity			Total amount		Positive		Negative	
€ million	≤ 1 year	> 1–5 years	> 5 years	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016
INTEREST-LINKED CONTRACTS	3,604	1,433	3,273	8,310	4,300	804	825	541	531
OTC products									
Interest-rate swaps (same currency)	233	1,157	2,803	4,193	4,117	804	825	520	530
Interest-rate options – put	–	125	470	595	120	–	0	21	1
Exchange-traded products									
Interest-rate futures	3,371	151	–	3,522	63	–	0	–	0
CURRENCY-LINKED CONTRACTS	49,118	1,304	174	50,596	46,997	1,107	548	475	560
OTC products									
Forward forex transactions	49,118	1,304	174	50,596	46,997	1,107	548	475	560
SHARE-/INDEX-LINKED CONTRACTS	–	–	–	–	27	–	–	–	0
Exchange-traded products									
Share/index futures	–	–	–	–	27	–	–	–	0
OTHER CONTRACTS	335	711	372	1,418	1,804	87	86	238	311
OTC products									
Cross-currency swaps	335	711	372	1,418	1,804	87	86	238	311
CREDIT DERIVATIVES	185	455	16	656	846	5	9	10	11
Protection buyer									
Credit default swaps	185	140	16	341	455	1	5	10	9
Protection buyer									
Credit default swaps	–	315	–	315	391	4	4	–	2
Total	53,242	3,903	3,835	60,980	53,974	2,003	1,468	1,264	1,413

The transactions listed were entered into for the purposes of hedging interest-rate, exchange-rate, market, or credit risk.

The carrying amounts of non-trading derivatives not recognized at fair value included premiums of €10 million (January 1, 2016: €8 million) under other assets and premiums of €31 million (January 1, 2016: €2 million) under other liabilities.

Prepaid expenses and accrued income include upfront payments of €0 million (January 1, 2016: €1 million). Deferred income and accrued expenses include upfront payments of €0 million (January 1, 2016: €8 million). Accrued income from non-trading derivatives not recognized at fair value is reported in the amount of €41 million (January 1, 2016: €41 million) under loans and advances to banks and in the amount of €9 million (January 1, 2016: €7 million) under loans and advances to customers, while accrued expenses on non-trading derivatives not recognized at fair value is reported in the amount of €39 million (January 1, 2016: €38 million) under deposits from banks and in the amount of €8 million (January 1, 2016: €8 million) under deposits from customers.

The carrying amounts of non-trading derivatives not recognized at fair value also included an asset of €505 million (January 1, 2016: liability of €264 million) relating to the offsetting item for currency translation. This offsetting item recognized as an asset under equity and liabilities is caused by the countervailing reclassification of the cumulative offsetting item for currency translation.

The table below shows a list of the derivatives not recognized at fair value by counterparty structure:

» 29
List of derivatives not recognized at fair value by counterparty structure

	Fair value			
	Positive		Negative	
€ million	Dec. 31, 2016	Jan. 1, 2016	Dec. 31, 2016	Jan. 1, 2016
OECD central governments	–	0	–	0
OECD banks	1,607	1,154	1,183	1,336
OECD financial services institutions	2	0	14	7
Other companies, private individuals	363	303	67	67
Non-OECD banks	31	11	0	3
Total	**2,003**	**1,468**	**1,264**	**1,413**

C. Income statement disclosures

» 30 Breakdown of income by geographical market

The table below shows the geographical breakdown of total interest income, current income from shares and other variable-yield securities, long-term equity investments and shares in affiliated companies, fee and commission income, net trading income, and other operating income:

€ million	2016	2015
Germany	4,663	4,975
International	253	193
Total	**4,916**	**5,168**

» 31 Administration and agency services provided for third parties

Administration and agency services provided for third parties relate primarily to custody services and the management of trust assets.

» 32 Other operating income and expenses

Other operating income amounted to €147 million. This amount largely comprised income of €38 million from the reversal of provisions, net income of €23 million from the measurement of pension plans, income of €17 million resulting from out-of-court settlement negotiations and completed court cases involving the New York branch, and rental income of €15 million.

The other operating expenses of €126 million were mainly attributable to operating costs and rental expenses of €28 million in connection with premises not used for banking operations and expenses of €17 million arising from assumption of the defined benefit obligations of WGZ BANK Unterstützungskasse.

» 33 Extraordinary income and expenses

The extraordinary income and expenses resulted from restructuring expenses of €135 million and transaction and migration costs of €57 million in connection with the merger. There were also extraordinary expenses of €150 million arising from an income subsidy paid by DZ BANK to DVB Bank SE, Frankfurt am Main.

» 34 Income taxes

Income taxes consist of corporation tax and trade tax gains allocated to the tax groups amounting to €201 million, a tax expense of €236 million for the current year, tax income of €39 million relating to prior years, and income of €4 million from the unwinding of the discount on the corporation tax credit claim. This item also included deferred tax income of €47 million in accordance with section 274 HGB in 2016. Income taxes are recognized exclusively in respect of the result from ordinary activities.

» 35 Proposed appropriation of profits

It will be proposed to the Annual General Meeting that the distributable profit be appropriated for a dividend payment of €0.18 per non-par-value share. This would equate to a total distribution of €322 million.

D. Other disclosures

» 36
Type, purpose, risks, and benefits of off-balance-sheet transactions

The following unused liquidity lines were available as at December 31, 2016 in connection with asset-backed commercial paper (ABCP) transactions:

Transaction	Type of transaction	Purpose of transaction	Unused liquidity lines (€ million)	Risks
CORAL	ABCP conduit	Customer-focused corporate funding to generate commission income	605	Utilization of available liquidity lines
AUTOBAHN	ABCP conduit	Customer-focused corporate funding to generate commission income	2,289	Utilization of available liquidity lines
Non-DZ BANK Group conduits	ABCP conduit	Customer-focused corporate funding to generate commission income	144	Utilization of available liquidity lines
Total			**3,038**	

These unused liquidity lines are the undrawn portions of lines granted externally to ABCP conduits. The purpose of the liquidity lines is to ensure that the individual conduits can be funded if commercial paper cannot be placed in the market. The above-mentioned risks are included in DZ BANK's liquidity risk models in full.

» 37
Other financial obligations

As at December 31, 2016, the total amount of other financial obligations for the following year was €305 million (January 1, 2016: €276 million). Most of these obligations related to follow-up obligations under memoranda and articles of association and to obligations under lease agreements, capital expenditure projects, and pending transactions. This amount includes obligations to affiliated companies of €25 million (January 1, 2016: €24 million).

Other financial obligations will amount to €449 million for years from 2018 onward. This amount includes obligations to affiliated companies of €134 million.

There are also irrevocable payment obligations in connection with the bank levy of €17 million. Collateral of the same amount has been pledged. The pledged collateral is included in other assets.

DZ BANK is a participant in the protection scheme operated by the Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e.V. (BVR) [National Association of German Cooperative Banks], Berlin. This facility comprises a guarantee fund and a guarantee network. Under the terms of its statutes, DZ BANK has lodged a guarantee bond of up to €158 million with the BVR in support of the guarantee network in order to cover any eventualities.

» 38 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 S.A., Strassen, Luxembourg, and in total for Deutsche Genossenschafts-Hypothekenbank AG, Hamburg, DZ BANK IRELAND PUBLIC LIMITED COMPANY, Dublin, Ireland, VR Equitypartner GmbH, Frankfurt am Main, and WL BANK AG Westfälische Landschaft Bodenkreditbank, Münster, that these companies are able to meet their contractual obligations. These entities are identified in the list of DZ BANK's shareholdings (Note 51) 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, USA. 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.

» 39 Disclosures pursuant to section 285 no. 11a HGB

As at the balance sheet date, DZ BANK was a shareholder with unlimited liability in the following entities:

- Bankenkonsortium der Zenit GmbH, GbR, Mülheim an der Ruhr
- DG Immobilien-Anlagegesellschaft Nr. 37 'Berlin-Wegedornstrasse' GbR mit quotaler Haftung i.L., Frankfurt am Main
- Grundstücksgesellschaft Räpplenstrasse – Gesellschaft des bürgerlichen Rechts, Stuttgart
- Konsortium der Absatzfinanzierungsinstitute plettac-assco GbR, Wuppertal
- VR GbR, Frankfurt am Main.

» 40 Contingent liabilities and other obligations

DZ BANK only assumes liabilities in the form of guarantees and indemnity agreements after it has carefully assessed the risks involved. Having constantly evaluated the risks attaching to the guarantees and indemnity agreements that it has entered into, the bank is currently of the view that the principal debtors concerned will be able to meet the obligations underlying these guarantees and indemnity agreements. DZ BANK believes that these guarantees and indemnity agreements are unlikely to be utilized.

In order to cover acute risks arising from guarantees, indemnity agreements, and irrevocable loan commitments, the bank has recognized provisions of an appropriate amount and has reduced the relevant figures reported by a corresponding amount.

» 41 Hedge accounting

DZ BANK has recognized a micro-hedge and included it in hedge accounting in accordance with section 254 HGB in order to hedge the currency risk arising from the long-term equity investment in DG Funding LLC, New York, in its banking book. The bank funded the carrying amount of its investment by raising US dollar-denominated fixed-term deposits. These fixed-term deposits are rolled over every 3 months. This perfect hedge ensures that

the exchange-rate fluctuations in the hedge over the term of the deposits totally cancel each other out. DZ BANK proves the effectiveness of its hedge both prospectively and retrospectively by reconciling the measurement-related parameters.

» 42 Employees

Average number of employees by employee group:

	2016	2015	pre-merger DZ BANK 2015
Female employees	**2,349**	**2,318**	**1,808**
Full-time employees	1,455	1,457	1,129
Part-time employees	894	861	679
Male employees	**3,324**	**3,272**	**2,504**
Full-time employees	3,152	3,090	2,369
Part-time employees	172	182	135
Total employees	**5,673**	**5,590**	**4,312**

To calculate the average number of employees in 2016, the employees of the former WGZ BANK were also included in the calculation for the first half of 2016 in order to provide a clearer picture of the change in staff expenses.

» 43 Auditor fees

For information on the total fees billed for 2016 by the auditors Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart, please refer to Note 93 'Auditor fees' in DZ BANK's 2016 consolidated financial statements.

» 44 Investment fund assets

DZ BANK owned the following holdings of more than 10 percent of the units in investment fund assets within the meaning of section 285 no. 26 HGB as at December 31, 2016:

INVESTMENT FUND ASSETS BY INVESTMENT OBJECTIVE

€ million	Carrying amount	Fair value	Difference between fair value and carrying amount	Distributions paid for 2016
Mixed fund (pension fund)	772	772	0	19

The investment fund units held by the pension fund are used to cover and fund DZ BANK's direct defined benefit obligations in Germany over the long term. They were able to be redeemed on any day without restriction.

The following cover is in place for outstanding covered bonds and derivatives:

» 45
Cover statement

€ million	Dec. 31, 2016	Jan. 1, 2016
Total cover assets	**21,008**	21,004
Ordinary cover	**21,007**	21,002
Loans and advances to banks	11,643	11,972
Loans and advances to customers	1,050	831
Bonds and other fixed-income securities	8,314	8,199
Derivatives held as cover	**1**	2
Cover requirement	**11,626**	12,827
Outstanding covered		
– bearer bonds	2,991	4,108
– registered bonds	8,635	8,719
Excess cover	**9,382**	8,177

The trustees are appointed by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) [Federal Financial Supervisory Authority] and have a duty under law to ensure that the issuance, administration, and collateralization of DZ BANK's covered bonds comply with statutory requirements, the provisions of the Articles of Association, and the terms and conditions of the bonds.

» 46
Trustees of cover assets

Trustee

Klaus Schmitz
Presiding Judge at the
Frankfurt am Main regional court (retired)

Deputy trustee

Klaus Wiens
Presiding Judge at the
Frankfurt am Main regional court (retired)

The exercise of DZ BANK's normal business activities involves parties related to DZ BANK. Transactions with related parties within the meaning of section 285 no. 21 HGB are conducted on an arm's-length basis.

» 47
Related party disclosures

The total remuneration for the members of the Boards of Managing Directors of DZ BANK and the former WGZ BANK in 2016 was €13,360 thousand (2015: €12,344 thousand). The total remuneration for the members of the Supervisory Boards of DZ BANK and the former WGZ BANK was €795 thousand (2015: €860 thousand). The total remuneration for the Boards of Managing Directors in 2016 and 2015 includes the total bonus awarded to the Boards of Managing Directors for the year in question. A sum of 20 percent of the total bonus determined on the basis of targets achieved is paid out in the subsequent year immediately after the annual financial statements have been formally adopted. Payment of the remaining 80 percent of the bonus of €2,248 thousand granted for 2016 (2015, pre-merger DZ BANK: €1,113 thousand) depends on the long-term performance of DZ BANK shares and is spread out over a period of up to 4 years in total.

» 48
Decision-making bodies

A total amount of €11,197 thousand (2015: €11,258 thousand) was paid to former members of the Board of Managing Directors or their surviving dependants, for whom defined benefit obligations of €122,806 thousand (2015: €129,526 thousand) were also recognized.

Board of Managing Directors of DZ BANK

Wolfgang Kirsch
(Chief Executive Officer)
Responsibilities: Legal; Communication, Marketing, CR; Group Audit

Hans-Bernd Wolberg
(Deputy Chief Executive Officer since July 29, 2016)
Responsibilities: Cooperative Banks/Verbund

Uwe Berghaus
(Member of the Board of Managing Directors since July 29, 2016)
Responsibilities: Investment Promotion; Corporate Banking Northern and Eastern Germany; Corporate Banking Western Germany

Dr. Christian Brauckmann
(Member of the Board of Managing Directors since July 29, 2016)
Responsibilities: IT; Organisation

Lars Hille
Responsibilities: Capital Markets Trading Frankfurt; Capital Markets Trading Düsseldorf; Capital Markets Retail Clients

Wolfgang Köhler
Responsibilities: Capital Markets Institutional Clients

Karl-Heinz Moll
(Member of the Board of Managing Directors since July 29, 2016)
Responsibilities: Research and Economics; Group Treasury

Dr. Cornelius Riese
Responsibilities: Group Finance; Group Strategy and Controlling

Michael Speth
(Member of the Board of Managing Directors since July 29, 2016)
Responsibilities: Group Risk Controlling

Thomas Ullrich
Responsibilities: Transaction Management; Operations; Payments & Accounts; Group Human Resources

Frank Westhoff
Responsibilities: Compliance; Credit; Credit Special

Stefan Zeidler
Responsibilities: Corporate Banking Central Germany; Corporate Banking Bavaria; Corporate Banking Baden-Württemberg; Structured Finance

Supervisory Board of DZ BANK

Helmut Gottschalk
(Chairman of the Supervisory Board)
Spokesman of the Board
of Managing Directors
Volksbank Herrenberg-Nagold-
Rottenburg eG

Ulrich Birkenstock
(Deputy Chairman of the
Supervisory Board)
Employee
R+V Allgemeine Versicherung AG

Werner Böhnke
(Deputy Chairman of the
Supervisory Board since June 22, 2016)
Bank director (ret.)

Henning Deneke-Jöhrens
(Deputy Chairman of the
Supervisory Board until June 22, 2016)
Chief Executive Officer
Volksbank eG Hildesheim-Lehrte-
Pattensen

Heiner Beckmann
Senior manager
R+V Allgemeine Versicherung AG

Hermann Buerstedde
Employee
Union Asset Management Holding AG

Martin Eul
(Member of the Supervisory Board
since June 22, 2016)
Chief Executive Officer
Dortmunder Volksbank eG

Uwe Fröhlich
President
Bundesverband der Deutschen Volksbanken
und Raiffeisenbanken e.V. (BVR)

Uwe Goldstein
(Member of the Supervisory Board
since June 22, 2016)
Spokesman of the
Board of Managing Directors
Raiffeisenbank Frechen-Hürth eG

Dr. Peter Hanker
(Member of the Supervisory Board
since June 22, 2016)
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

Klaus Holderbach
(Member of the Supervisory Board
until June 22, 2016)
Chief Executive Officer
Volksbank Franken eG

Bernd Hühn
(Member of the Supervisory Board
until June 22, 2016)
Chief Executive Officer
Volksbank Alzey-Worms eG

Renate Mack
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

Rainer Mangels
Employee
R+V Rechtsschutz-
Schadenregulierungs-GmbH

Dieter Rembde
(Member of the Supervisory Board
until June 22, 2016)
Bank director (ret.)

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

Dr. Wolfgang Thomasberger
Chief Executive Officer
VR Bank Rhein-Neckar eG

Hans-Bernd Wolberg
(Member of the Supervisory Board
until June 22, 2016)
Chief Executive Officer
WGZ BANK AG
Westdeutsche Genossenschafts-Zentralbank
(until July 29, 2016)

As at December 31, 2016, 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 (*).

» 49
Supervisory mandates held by members of the Board of Managing Directors and employees

Members of the Board of Managing Directors

Wolfgang Kirsch (Chief Executive Officer)	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, Chairman of the Supervisory Board (*)
	R+V Versicherung AG, Wiesbaden, Chairman of the Supervisory Board (*)
	Südzucker AG, Mannheim, Member of the Supervisory Board
	Union Asset Management Holding AG, Frankfurt am Main, Chairman of the Supervisory Board (*)
Hans-Bernd Wolberg (Deputy Chief Executive Officer)	WL BANK AG Westfälische Landschaft Bodenkreditbank, Münster, Chairman of the Supervisory Board (*)
Uwe Berghaus	Deutsche Genossenschafts-Hypothekenbank AG, Hamburg, Member of the Supervisory Board (*) (since January 1, 2017)
	VR-LEASING AG, Eschborn, Deputy Chairman of the Supervisory Board (*)
Dr. Christian Brauckmann	Fiducia & GAD IT AG, Frankfurt am Main, Member of the Supervisory Board

Lars Hille	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, Member of the Supervisory Board (*)
	Cassa Centrale Banca – Credito Cooperativo del Nord Est S.p.A., Trento, Member of the Board of Directors
	Deutsche WertpapierService Bank AG, Frankfurt am Main, Member of the Supervisory Board
	DZ PRIVATBANK S.A., Strassen, Chairman of the Supervisory Board (*)
	TeamBank AG Nürnberg, Nuremberg, Chairman of the Supervisory Board (*)
	Union Asset Management Holding AG, Frankfurt am Main, Member of the Supervisory Board (*)
Wolfgang Köhler	DVB Bank SE, Frankfurt am Main, Member of the Supervisory Board (*)
	DZ PRIVATBANK S.A., Strassen, Member of the Supervisory Board (*)
	R+V Lebensversicherung AG, Wiesbaden, Member of the Supervisory Board (*)
Karl-Heinz Moll	DZ PRIVATBANK (Schweiz) AG, Zurich, Deputy Chairman of the Board of Directors (*)
	DZ PRIVATBANK S.A., Strassen, Deputy Chairman of the Supervisory Board (*)
	R+V Versicherung AG, Wiesbaden, Member of the Supervisory Board (*)
	Union Asset Management Holding AG, Frankfurt am Main, Deputy Chairman of the Supervisory Board (*)

Dr. Cornelius Riese	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, Member of the Supervisory Board (*)
	R+V Allgemeine Versicherung AG, Wiesbaden, Member of the Supervisory Board (*)
	R+V Lebensversicherung AG, Wiesbaden, Member of the Supervisory Board (*)
	VR-LEASING AG, Eschborn, Member of the Supervisory Board (*)
Michael Speth	BAG Bankaktiengesellschaft, Hamm, Member of the Supervisory Board
	WL BANK AG Westfälische Landschaft Bodenkreditbank, Münster, Member of the Supervisory Board (*)
Thomas Ullrich	Deutsche WertpapierService Bank AG, Frankfurt am Main, Chairman of the Supervisory Board
Frank Westhoff	Deutsche Genossenschafts-Hypothekenbank AG, Hamburg, Chairman of the Supervisory Board (*)
	Deutsche WertpapierService Bank AG, Frankfurt am Main, Member of the Supervisory Board
	DVB Bank SE, Frankfurt am Main, Chairman of the Supervisory Board (*)
	TeamBank AG Nürnberg, Nuremberg, Deputy Chairman of the Supervisory Board (*)
Stefan Zeidler	Deutsche Genossenschafts-Hypothekenbank AG, Hamburg, Member of the Supervisory Board (*) (until December 31, 2016)
	EDEKABANK AG, Hamburg, Member of the Supervisory Board
	VR-LEASING AG, Eschborn, Chairman of the Supervisory Board (*)

Employees

Rolf Büscher	ReiseBank AG, Frankfurt am Main, Member of the Supervisory Board (*)
Dr. Luis-Esteban Chalmovsky	Banco Cooperativo Español S.A., Madrid, Member of the Board of Directors
Dr. Thomas Kettern	Raiffeisen-Warenzentrale Kurhessen-Thüringen GmbH, Kassel, Member of the Supervisory Board
Winfried Münch	AKA Ausfuhrkredit-Gesellschaft mbH, Frankfurt am Main, Member of the Supervisory Board
Claudio Ramsperger	Cassa Centrale Banca – Credito Cooperativo del Nord Est S.p.A., Trento, Member of the Board of Directors
Gregor Roth	ConCardis GmbH, Frankfurt am Main, Member of the Supervisory Board
	Deutsche WertpapierService Bank AG, Frankfurt am Main, Member of the Supervisory Board
	equensWorldline SE, Utrecht, Deputy Chairman of the Supervisory Board
	ReiseBank AG, Frankfurt am Main, Chairman of the Supervisory Board (*)
Dr. Kirsten Siersleben	DVB Bank SE, Frankfurt am Main, Member of the Supervisory Board (*)
Peter Tenbohlen	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

There were no events of particular importance after the end of the financial year.

» 50
Events after the balance sheet date

» 51
List of shareholdings

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
ABO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		26	-10
Adger Ocean KS (I)[1]	Oslo, Norway	0.00		n/a	n/a
Adger Ocean KS II[1]	Oslo, Norway	0.00		n/a	n/a
Adger Ocean KS III[1]	Oslo, Norway	0.00		n/a	n/a
AER Holding N.V.[1]	Willemstad, Curaçao	100.00		-22	0
AGIMA Aktiengesellschaft für Immobilien-Anlage[5]	Frankfurt am Main	100.00		84,025	0
Aquila Aircraft Leasing Ltd.[1]	Dublin, Ireland	0.00		35,071	-11,496
ARATOS GmbH[1]	Eschborn	100.00		85	60
ARATOS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	147	62
ARMIDA GmbH[1]	Eschborn	100.00		46	20
ARMIDA GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	26	25
ASPASIA GmbH[1]	Eschborn	100.00		54	29
ASPASIA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	740	35
Assimoco S.p.A.[1]	Segrate (Mi), Italy	89.39		115,780	18,765
Assimoco Vita S.p.A.[1]	Segrate (Mi), Italy	82.14		121,626	4,982
Assimocopartner S.r.l. Unipersonale[1]	Segrate (Mi), Italy	100.00		132	-48
attrax S.A.[1]	Luxembourg, Luxembourg	100.00		41,817	20,174
Aufbau und Handelsgesellschaft mbH[1]	Stuttgart	94.90		525	0
AURIGA GmbH[1]	Eschborn	100.00		-931	-368
Autobahn 2003 Holdings LLC[1]	Wilmington, USA	0.00		2,410	0
AXICA Kongress- und Tagungszentrum Pariser Platz 3 GmbH[5]	Berlin	100.00		26	0
Bathgate Trading Opco LLC[1]	Majuro, Marshall Islands	0.00		1,734	333
Bausparkasse Schwäbisch Hall Aktiengesellschaft - Bausparkasse der Volksbanken und Raiffeisenbanken[5]	Schwäbisch Hall	96.91		1,812,302	0
Berwick Shipping LLC[1]	Majuro, Marshall Islands	0.00		4,415	-4,415
Beteiligungsgesellschaft Westend 1 mbH & Co. KG[1]	Frankfurt am Main	94.90		17,860	375
BFL Gesellschaft des Bürofachhandels mbH & Co. KG[1]	Eschborn	71.79	72.03	16,741	4,109
BFL Leasing GmbH[1]	Eschborn	100.00		15,924	5,992
BIG-Immobilien Gesellschaft mit beschränkter Haftung[1]	Frankfurt am Main	100.00		713	978
BIG-Immobilien GmbH & Co. Betriebs KG[1]	Frankfurt am Main	100.00		200	23,691
Bischoff GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	21	19
Bluebell Aircraft Leasing Ltd.[1]	Floriana, Malta	100.00	0.00	985	-18
Bonham Aircraft Leasing Ltd.[1]	George Town, Cayman Islands	0.00		159	-1,962
Braveheart Shipping Holdco LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Braveheart Shipping Opco LLC[1]	Majuro, Marshall Islands	0.00		4,341	-2,568
Bukit Merah Shipping Pte. Ltd.[1]	Singapore, Singapore	0.00		6	-21
Bulls Aircraft Leasing (Malta) Ltd.[1]	Floriana, Malta	100.00	0.00	n/a	n/a
Buzzard Aircraft Leasing Limited i.L.[1]	Dublin, Ireland	100.00	0.00	447	0
BWG Baugesellschaft Württembergischer Genossenschaften mbH[1]	Stuttgart	94.78		9,965	0
Calidris Shipping LLC[1]	Majuro, Marshall Islands	100.00	0.00	9,199	-1,376
CALYPSO GmbH[1]	Eschborn	100.00		-560	-90
Canadian Iron Ore Railcar Leasing LP[1]	Hamilton, Canada	100.00		n/a	n/a
CANOPOS GmbH[1]	Eschborn	100.00		27	2
CANOPOS GmbH & Co. Immobilien KG[1, 6]	Eschborn	100.00		3	27
Capital Lease Limited[1]	Hong Kong, Hong Kong	0.00		74	-438
carexpert Kfz-Sachverständigen GmbH[1]	Walluf	60.00		4,333	1,261
CATHENA GmbH[1]	Eschborn	100.00		51	26
Centra Leasing Anlagen GmbH[1, 5]	Eschborn	100.00		5,899	0
CHEMIE Pensionsfonds AG[1]	Munich	100.00		22,318	2,000
Chiefs Aircraft Holding (Malta) Limited[1]	Floriana, Malta	100.00	0.00	n/a	n/a
CHROMARIA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	38	37
CI CONDOR Immobilien GmbH[1, 5]	Hamburg	100.00		25,500	0
CIORL Partner Ltd.[1]	Toronto, Canada	100.00		n/a	n/a
compertis Beratungsgesellschaft für betriebliches Vorsorgemanagement mbH[1]	Wiesbaden	100.00		3,880	750
Condor Allgemeine Versicherungs-Aktiengesellschaft[1, 5]	Hamburg	100.00		41,762	0
Condor Dienstleistungs GmbH[1]	Hamburg	100.00		208	6
Condor Lebensversicherungs-Aktiengesellschaft[1, 5]	Hamburg	94.99		48,589	0

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Container Investment Fund I LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Container Investment Fund II LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Cruise Ship InvestCo LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
DAC Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		64	38
DAC Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Lüneburg KG[1, 6]	Eschborn	99.00	83.67	47	56
Dalian Deepwater Developer Ltd.[1]	St. Helier, Jersey	0.00		n/a	n/a
DCAL Aircraft Malta Ltd.[1]	Floriana, Malta	0.00		n/a	n/a
DEGEAKZENT Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		41	16
DEGEAKZENT Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	0.00	51.00	19	19
DEGEALPHA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	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	62
DEGEASPEKT Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		30	2
DEGEASPEKT Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	100.00		3	35
DEGEASTURA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		61	35
DEGEASTURA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	100.00		-913	74
DEGEAVUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGEAVUS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	100.00		-386	-127
DEGEBALTA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		78	52
DEGEBALTA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	94.90	75.00	71	65
DEGECAMPUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		20	0
DEGECANDOR Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		25	0
DEGECASTELL GmbH[1]	Eschborn	100.00		39	-35
DEGECEBER Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		28	2
DEGECEBER Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1, 6]	Eschborn	100.00		3	20
DEGECEDO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		886	74
DEGECENSUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		57	32
DEGECENSUS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1, 6]	Eschborn	100.00		39	38
DEGECENUM Grundstücksverwaltungsgesellschaft mbH[1, 5]	Eschborn	100.00		26	0
DEGECIVO Grundstücksverwaltungsgesellschaft mbH Berlin[1]	Berlin	100.00		28	3
DEGECOMO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		25	0
DEGECULA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		86	60
DEGECULA Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Sindelfingen KG[1]	Eschborn	6.00	75.50	96	75
DEGEDELTA Vermietungsgesellschaft für Betriebsvorrichtungen mbH[1]	Eschborn	100.00		29	0
DEGEDENAR Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		26	0
DEGEDESTRA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	0
DEGEDOMUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		30	1
DEGEDOMUS Grundstücksverwaltungsgesellschaft mbH & Co. Gewerbeobjekte Süd KG[1, 6]	Eschborn	100.00		3	14
DEGEFULVA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		36	11
DEGEIMPULS Grundstücksverwaltungsgesellschaft Objekt Hattingen mbH[1]	Eschborn	100.00		958	121
DEGEKONZEPT Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		34	8
DEGEMALVA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGEMALVA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1, 6]	Eschborn	100.00		3	39
DEGEMEDIUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	1
DEGEMEDIUS Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Voerde KG[1, 6]	Eschborn	90.00	66.67	3	1
DEGEMENAR Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGEMENAR Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Lauingen KG[1]	Eschborn	2.00	66.67	-370	79
DEGEMINAX Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		47	21

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
DEGEMOBIL Vermietungsgesellschaft für Betriebsvorrichtungen mbH[1]	Eschborn	100.00		23	33
DEGEMOLTO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		58	33
DEGEMOLTO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	0.00	51.00	40	267
DEGEMONTES Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		214	188
DEGEMONTES Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	95.00	75.00	227	452
DEGEMOX Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		28	1
DEGEMOX Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	100.00		3	34
DEGENASUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		28	0
DEGENITOR Grundstücksverwaltungsgesellschaft mbH[1,5]	Eschborn	100.00		26	0
DEGEPALMA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGEPALMA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1,6]	Eschborn	100.00		3	268
DEGEPEXUM Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	1
DEGEPEXUM Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	2.00	66.67	26	3
DEGEPRIMUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		55	30
DEGEPRIMUS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	5.00	75.50	37	35
DEGEPROJEKT Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		376	100
DEGEPROLOG Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		26	0
DEGEPROMO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		32	1
DEGEPROMO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1,6]	Eschborn	100.00		-26	-2
DEGEREAL Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		25	-1
DEGEREMEX Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	1
DEGEREMEX Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	2.00	66.67	26	111
DEGEREX Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		107	81
DEGERIA Beteiligungsgesellschaft mbH[1]	Eschborn	100.00		26	0
DEGERIMA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		25	0
DEGERIPA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		42	16
DEGERIPA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	6.00	76.00	-602	7
DEGERIXOR Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		25	-1
DEGEROTA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		33	6
DEGERUMEX Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		70	44
DEGERUMEX Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1,6]	Eschborn	100.00		-73	92
DEGESAMOS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGESAMOS Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Neuss KG[1]	Eschborn	90.00	66.67	3	0
DEGESAPOR Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	1
DEGESAPOR Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	100.00		3	39
DEGESERA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGESERA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	0.00	51.00	925	78
DEGESERVO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGESERVO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	100.00		-333	151
DEGESIDUX Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		65	40
DEGESIDUX Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1,6]	Eschborn	94.91	75.00	1,145	272
DEGESIGNUM Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		55	30
DEGESIGNUM Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	6.00	75.50	37	36
DEGESILEX Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		75	49
DEGESILEX Grundstücksverwaltungsgesellschaft mbH & Co. Objekt Karlsfeld KG[1]	Eschborn	5.00	75.50	-1,202	374
DEGESILVA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	2
DEGESISTO Grundstücksverwaltungsgesellschaft mbH[1,5]	Eschborn	100.00		114	0
DEGESOLVO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
DEGESOLVO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	1.18	6.67	-596	687
DEGESPRIO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		25	-1
DEGESTRENA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		68	42
DEGESUR Grundstücksverwaltungsgesellschaft mbH[1,5]	Eschborn	100.00		4,361	0
DEGETAMESIS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		52	26
DEGETAMESIS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	10.00	75.50	2,170	93
DEGETANTUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		44	18
DEGETANTUS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[2,6]	Eschborn	100.00		-264	61
DEGETEMPUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		26	0
DEGETERRA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		41	16
DEGETERRA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	6.00	75.50	-621	85
DEGETIBUR Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		51	25
DEGETIBUR Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	6.00	67.34	33	31
DEGETRACTUS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		69	44
DEGETRINUM Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		50	24
DEGETRINUM Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	6.00	75.50	24	29
DEGETUTOR Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	1
DEGEVIA Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	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		48	22
DEGEVITRO Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	100.00		28	454
DESPINA GmbH[1]	Eschborn	100.00		78	20
Deucalion Capital I (UK) Ltd.[1]	London, UK	0.00		n/a	n/a
Deucalion Capital II (MALTA) Limited[1]	Valletta, Malta	0.00		n/a	n/a
Deucalion Capital II (UK) Ltd.[1]	London, UK	0.00		n/a	n/a
Deucalion Capital II Limited[1]	George Town, Cayman Islands	0.00		n/a	n/a
Deucalion Capital VI Limited[1]	George Town, Cayman Islands	0.00		n/a	n/a
Deucalion Capital VII Limited[1]	George Town, Cayman Islands	0.00		n/a	n/a
Deucalion Capital VIII Limited[1]	George Town, Cayman Islands	0.00		n/a	n/a
Deucalion Capital XI Limited[1]	George Town, Cayman Islands	0.00		n/a	n/a
Deucalion Engine Leasing (Ireland) Ltd.[1]	Dublin, Ireland	0.00		n/a	n/a
Deucalion Ltd.[1]	George Town, Cayman Islands	0.00		n/a	n/a
Deutsche Genossenschafts-Hypothekenbank Aktiengesellschaft[3,5]	Hamburg	100.00		1,407,258	0
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 Funding LLC	New York, USA	100.00		118,350	418
DG Holding Trust	New York, USA	100.00		71,281	548
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		0	0
Dilax Beteiligungsgesellschaft mbH & Co. KG[1]	Berlin	92.39		3,146	-137
Dilax France SAS[1]	Valence, France	100.00		182	4
Dilax Intelcom AG[1]	Ermatingen, Switzerland	100.00		1,733	857
Dilax Intelcom GmbH[1]	Berlin	72.01		3,744	3
Dilax Intelcom Iberica S.L.U.[1]	Madrid, Spain	100.00		70	28
Dilax Management Investment Reserve GmbH[1]	Berlin	100.00		27	-3
Dilax Management Investment Verwaltungsgesellschaft mbH[1]	Berlin	100.00		23	-1
Dilax Management Investmentgesellschaft mbH & Co. KG[1]	Berlin	99.50		n/a	n/a
Dilax Systems Inc.[1]	Saint Lambert, Canada	100.00		428	144
Dilax Systems UK Ltd.[1]	London, UK	100.00		-353	-126
DOBAS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		29	4

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Drem Shipping LLC[1]	Majuro, Marshall Islands	0.00		1,346	1,346
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	1,884	287
DURO Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		27	2
DV01 Szarazfoldi Jarmukolcsonzo rt[1]	Áporka, Hungary	0.00		1,823	-410
DVB Aviation Finance Asia Pte Ltd.[1]	Singapore, Singapore	100.00		2,845	1,614
DVB Bank America N.V.[1]	Willemstad, Curaçao	70.21		259,876	15,041
DVB Bank SE	Frankfurt am Main	95.47		371,397	-88,117
DVB Capital Markets LLC[1]	New York, USA	100.00		3,172	-334
DVB Container Finance America LLC[1]	Majuro, Marshall Islands	100.00		-1,233	25
DVB Group Merchant Bank (Asia) Ltd.[1]	Singapore, Singapore	100.00		391,372	5,173
DVB Holding (US) Inc.[1]	Greenwich, USA	100.00		1,778	0
DVB Holding GmbH[1,5]	Frankfurt am Main	100.00		13,000	0
DVB Investment Management N.V.[1]	Willemstad, Curaçao	100.00		237	0
DVB Service (US) LLC[1]	Wilmington, USA	100.00		704	1
DVB Transport Finance Limited[1]	London, UK	100.00		70,672	-2,771
DVG Deutsche Vermögensverwaltungs-Gesellschaft mit beschränkter Haftung[5]	Frankfurt am Main	100.00		82	0
DVL Deutsche Verkehrs-Leasing GmbH[1]	Eschborn	74.90		2,518	0
DZ BANK Capital Funding LLC I[2,4]	Wilmington, USA	100.00		300,933	6,912
DZ BANK Capital Funding LLC II[2,4]	Wilmington, USA	100.00		500,718	6,933
DZ BANK Capital Funding LLC III[2,4]	Wilmington, USA	100.00		350,303	4,488
DZ BANK Capital Funding Trust I	Wilmington, USA	0.00	100.00	300,001	7,014
DZ BANK Capital Funding Trust II	Wilmington, USA	0.00	100.00	500,001	7,035
DZ BANK Capital Funding Trust III	Wilmington, USA	0.00	100.00	350,001	4,522
DZ BANK IRELAND PUBLIC LIMITED COMPANY[3]	Dublin, Ireland	100.00		390,098	25,148
DZ BANK Perpetual Funding (Jersey) Limited[4]	St. Helier, Jersey	0.00	100.00	260,579	2,146
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		321	98
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		23	-2
DZ Beteiligungsgesellschaft mbH Nr. 23[5]	Frankfurt am Main	100.00		25	0
DZ Beteiligungsgesellschaft mbH Nr. 24	Frankfurt am Main	100.00		22	-3
DZ FINANCE Ireland Limited	Dublin, Ireland	100.00		8,357	-39,195
DZ FINANCIAL MARKETS LLC	New York, USA	100.00		3,684	-62
DZ Gesellschaft für Grundstücke und Beteiligungen mbH[5]	Frankfurt am Main	100.00		1,461	0
DZ Immobilien + Treuhand GmbH[5]	Münster	94.50		1,348	0
DZ Polska Spólka Akcyjna w likwidacji	Warsaw, Poland	100.00		66,834	167
DZ PRIVATBANK (Schweiz) AG[1]	Zurich, Switzerland	100.00		162,729	-27,171
DZ PRIVATBANK S.A.[3]	Strassen, Luxembourg	90.65		628,269	11,382
DZ PRIVATBANK Singapore Ltd.[1]	Singapore, Singapore	100.00		8,996	-175
DZ Versicherungsvermittlung Gesellschaft mbH[5]	Frankfurt am Main	100.00		51	0
DZ Vierte Beteiligungsgesellschaft mbH[5]	Frankfurt am Main	100.00		276,687	0
e@syCredit Marketing und Vertriebs GmbH[1]	Nuremberg	100.00		26	0
Eagle Aircraft Leasing Limited[1]	George Town, Cayman Islands	0.00		n/a	n/a
ENDES Grundstücksverwaltungsgesellschaft mbH[1,5]	Eschborn	100.00		26	0
Englische Strasse 5 GmbH[1]	Wiesbaden	90.00		19,114	605
EPI Grundstücksverwaltungsgesellschaft mbH[1,5]	Eschborn	100.00		560	0
EXERT Grundstücksverwaltungsgesellschaft mbH[1,5]	Eschborn	100.00		26	0
Falcon Aircraft Leasing Limited i. L.[1]	Dublin, Ireland	0.00		n/a	n/a
Finassimoco S.p.A.[1]	Segrate (Mi), Italy	57.03		0	0
Finch Aircraft Leasing Limited[1]	Dublin, Ireland	0.00		14	-21
FKS-NAVIGIUM GmbH[1]	Eschborn	100.00		-381	-143
FLORIN GmbH[1]	Eschborn	100.00		53	28
FLORIN GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	-29	35
Fundamenta-Lakáskassza Lakás-takarékpénztár Zrt.[1]	Budapest, Hungary	51.25		180,263	19,883
Fundamenta-Lakáskassza Pénzügyi Közvetítő Kft.[1]	Budapest, Hungary	100.00		4,978	3,936
GAF Active Life 1 Renditebeteiligungs-GmbH & Co. KG[1]	Nidderau	96.55		56,448	-1,696
GAF Active Life 2 Renditebeteiligungs-GmbH & Co. KG[1]	Nidderau	94.98		153,810	5,478
Gandari Shipping Pte. Ltd.[1]	Singapore, Singapore	0.00		61	-6
GbR Dortmund Westenhellweg 39–41[1]	Wiesbaden	94.00	100.00	40,330	3,045

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
GBS Beteiligungsgesellschaft mbH[1]	Munich	100.00		n/a	n/a
GENO Broker GmbH[5]	Frankfurt am Main	100.00		12,000	0
GENO-Beteiligungsgesellschaft mbH	Düsseldorf	100.00		1,150	2
Genossenschaftlicher Informations Service GIS GmbH	Frankfurt am Main	100.00		4,124	85
Glen Campbell Opco LLC[1]	Majuro, Marshall Islands	0.00		0	0
Glencoe Shipping Holdco LLC[1]	Majuro, Marshall Islands	0.00		19	1
GMS Management und Service GmbH[1]	Nidderau	100.00		90	40
Goldberg Zweite Grundstücksverwaltungsgesellschaft Sütex mbH & Co. KG[1,6]	Eschborn	94.50	88.00	76	283
Green Eagle Investments N.V.[1]	Willemstad, Curaçao	0.00		n/a	n/a
Grundstücksverwaltungsgesellschaft Sütex mbH[1]	Eschborn	100.00		24	0
GWG 1. Wohn GmbH & Co. KG[1]	Stuttgart	100.00		2,000	371
GWG 2. Wohn GmbH & Co. KG[1]	Stuttgart	100.00		3,000	622
GWG 3. Wohn GmbH & Co. KG[1]	Stuttgart	100.00		7,000	1,385
GWG 4. Wohn GmbH & Co. KG[1]	Stuttgart	100.00		9,000	823
GWG Beteiligungsgesellschaft mbH[1]	Stuttgart	100.00		25	2
GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG[1]	Stuttgart	91.41		273,282	10,582
GWG ImmoInvest GmbH[1]	Stuttgart	94.90		6,410	756
GWG Wohnpark Sendling GmbH[1]	Stuttgart	94.00		2,783	405
GZ-Immobilien-Management GmbH & Co. Objekt KG	Frankfurt am Main	100.00		-712	-2
GZ-Trust Consult GmbH i. L.	Stuttgart	100.00		492	-5
HANSEATICA Sechzehnte Grundbesitz Investitionsgesellschaft mbH & Co. KG[1]	Berlin	100.00		22,868	851
Havel Nordost Zweite Grossmobilien GmbH[1]	Eschborn	100.00		41	16
Havel Nordost Zweite Grossmobilien GmbH & Co. Vermietungs KG[1]	Zehdenick	0.00	52.00	21	904
Hawk Aircraft Leasing Limited[1]	Dublin, Ireland	0.00		n/a	n/a
Hibiscus Aircraft Leasing Limited[1]	Floriana, Malta	0.00		n/a	n/a
Highlanders Aircraft Leasing (IRL) Ltd.[1]	Dublin, Ireland	100.00	0.00	n/a	n/a
Hollandse Scheepshypotheekbank N.V.[1]	Rotterdam, Netherlands	100.00		707	0
Hudson Services LLC[1]	Majuro, Marshall Islands	0.00		301	-1,978
HumanProtect Consulting GmbH[1]	Cologne	100.00		213	71
Ibon Leasing Limited[1]	George Town, Cayman Islands	100.00		1	1
Immobilien-Gesellschaft 'DG Bank-Turm, Frankfurt am Main, Westend' mbH & Co. KG des genossenschaftlichen Verbundes[1]	Frankfurt am Main	95.97		170,710	8,132
Immobilien-Verwaltungsgesellschaft 'DG BANK-Turm, Frankfurt am Main, Westend' mbH	Frankfurt am Main	100.00		51	16
IMPETUS Bietergesellschaft mbH[5]	Düsseldorf	100.00		54,063	0
Intermodal Investment Fund IX LLC[1]	Majuro, Marshall Islands	100.00		n/a	n/a
IPConcept (Luxemburg) S.A.[1]	Strassen, Luxembourg	100.00		6,761	3,181
IPConcept (Schweiz) AG[1]	Zurich, Switzerland	100.00		4,977	503
Iron Maple Rail Ltd.[1]	Vancouver, Canada	100.00		n/a	n/a
ITF International Transport Finance Suisse AG[1]	Zurich, Switzerland	100.00		19,789	-26,348
Ivanhoe Shipping Opco LLC[1]	Majuro, Marshall Islands	0.00		-3,529	-1,607
IZD-Beteiligung S.à.r.l.[1]	Luxembourg, Luxembourg	99.50		21,852	-13
JASPIS GmbH[1]	Eschborn	100.00		40	15
JASPIS GmbH & Co. Immobilien KG[1,6]	Eschborn	100.00		7	19
KALAMOS GmbH[1]	Eschborn	100.00		56	31
KALAMOS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	-1,361	-10
Kalsubai Shipping and Offshore Private Ltd.[1]	Mumbai, India	0.00		n/a	n/a
KBIH Beteiligungsgesellschaft für Industrie und Handel mbH	Frankfurt am Main	100.00		20,464	6,937
KISSELBERG Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		10	-1
KISSELBERG Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	6.00	66.67	8,691	1,650
KRAVAG Umweltschutz und Sicherheitstechnik GmbH[1]	Hamburg	100.00		223	19
KRAVAG-ALLGEMEINE Versicherungs-Aktiengesellschaft[1]	Hamburg	100.00		95,966	7,229
KRAVAG-LOGISTIC Versicherungs-Aktiengesellschaft[1]	Hamburg	51.00		185,920	19,310
KTP Beteiligungs GmbH & Co. KG[1]	Frankfurt am Main	100.00		n/a	n/a
KTP Verwaltungs GmbH[1]	Frankfurt am Main	100.00		n/a	n/a
KV MSN 27602 AIRCRAFT LIMITED[1]	Dublin, Ireland	0.00		n/a	n/a
Landes Bangladesh Ltd.[1]	Dhaka, Bangladesh	100.00		n/a	n/a
Landes Canada Inc.[1]	Granby, Quebec, Canada	100.00		3,309	600
Landes de Mexico, S. de R.L. de C.V.[1]	Aguascalientes, AGS., Mexico	100.00		72	0
Landes Holding GmbH[1]	Isny im Allgäu	84.47		6,665	-712
Landes Hong Kong Limited[1]	Kwun Tong, Kowloon, Hong Kong	100.00		540	-351
Landes Lederwarenfabrik GmbH[1]	Isny im Allgäu	100.00		6,691	-512

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Lantana Aircraft Leasing Limited[1]	Floriana, Malta	0.00		n/a	n/a
Leith Shipping LLC[1]	Majuro, Marshall Islands	0.00		-1,149	-1,149
LEKANIS GmbH[1]	Eschborn	100.00		40	15
LEKANIS GmbH & Co. Immobilien KG[1 6]	Eschborn	100.00		20	58
Linton Shipping LLC[1]	Majuro, Marshall Islands	0.00		5	5
LISENE GmbH[1]	Eschborn	100.00		41	16
LISENE GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	20	19
LITOS GmbH[1]	Eschborn	100.00		40	15
LITOS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	-26	25
LogPay Financial Services GmbH[1 5 6]	Eschborn	100.00		3,750	0
LogPay Fuel Italia S.R.L.[1]	Bolzano, Italy	100.00		18	8
LogPay Fuel Spain S.L.U.[1]	Barcelona, Spain	100.00		n/a	n/a
LogPay Mobility Services GmbH[1]	Eschborn	100.00		n/a	n/a
LogPay Transport Services GmbH[1 5 6]	Eschborn	100.00		550	0
Maple Leaf Shipping Holdco LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Martens & Prahl Hannover-Contor Versicherungsmakler GmbH[1]	Hannover	55.41		n/a	n/a
MD Aviation Capital Pte. Ltd.[1]	Singapore, Singapore	0.00		221,169	8,610
MDAC 1 Pte Ltd.[1]	Singapore, Singapore	0.00		19,897	67
MDAC 11 Pte Ltd.[1]	Singapore, Singapore	0.00		21,023	667
MDAC 2 Pte Ltd.[1]	Singapore, Singapore	0.00		19,611	80
MDAC 3 Pte Ltd.[1]	Singapore, Singapore	0.00		25,061	6,171
MDAC 4 Pte Ltd.[1]	Singapore, Singapore	0.00		11,587	-809
MDAC 5 Pte. Ltd.[1]	Singapore, Singapore	0.00		15,005	767
MDAC 6 Pte Ltd.[1]	Singapore, Singapore	0.00		60,260	2,116
MDAC 7 (Ireland) Ltd.[1]	Dublin, Ireland	0.00		171	43
MDAC 8 Pte Ltd.[1]	Singapore, Singapore	0.00		5,727	-748
MDAC 9 Pte Ltd.[1]	Singapore, Singapore	0.00		4,559	242
MDAC Malta Ltd.[1]	Floriana, Malta	0.00		n/a	n/a
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 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		-97	-11
MODULUS GmbH[1]	Eschborn	100.00		49	24
MODULUS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	30	28
Morgenstern Miet + Leasing GmbH[1]	Eschborn	95.00		26	0
Mount Pleasant Shipping Pte. Ltd.[1]	Singapore, Singapore	0.00		n/a	n/a
Mount Rinjani Shipping Pte. Ltd.[1]	Singapore, Singapore	0.00		n/a	n/a
Mount Santubong Ltd.[1]	Labuan, Malaysia	0.00		n/a	n/a
MS 'GEORG SCHULTE' Schifffahrtsgesellschaft mbH & Co. KG i.L.[1]	Hamburg	78.77		-7,719	-20,218
MS 'Mumbai Trader' GmbH & Co. KG[1]	Bremen	0.00		n/a	n/a
MSN1164 Freighter Ltd.[1]	Dublin, Ireland	0.00		10,976	2,642
MSU Management-, Service- und Unternehmensberatung GmbH[1]	Landau in der Pfalz	74.00		731	230
NALINUS GmbH i. L.[1]	Frankfurt am Main	100.00		128	-1
Nedship Shipping B.V.[1]	Schiphol, Netherlands	100.00		1,799	-108
NELO Dritte GmbH[1]	Eschborn	100.00		46	21
NELO Dritte GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	27	96
NELO Fünfte GmbH[1]	Eschborn	100.00		44	18
NELO Fünfte GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	24	22
NELO Zweite GmbH[1]	Eschborn	100.00		139	114
NELO Zweite GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	137	136
Netherlands Shipmortgage Corporation Ltd.[1]	Hamilton, Bermuda	100.00		0	0
NF Nordstrand GmbH & Co. Heidenkampsweg 100 Nord KG[1]	Norderfriedrichskoog	94.00	49.00	-3,689	136
NF Nordstrand GmbH & Co. Heidenkampsweg 100 Süd KG[1]	Norderfriedrichskoog	94.00	49.00	-2,791	59
NFC Labuan Shipleasing I Ltd.[1]	Labuan, Malaysia	0.00		n/a	n/a
NFC Shipping Fund C LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
NFC Shipping Fund II LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
NOMAC AIRCRAFT LEASING (IRL) Ltd. i. L.[1]	Dublin, Ireland	0.00		n/a	n/a

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
NOVA Achte GmbH[1]	Eschborn	100.00		46	21
NOVA Neunte GmbH[1]	Eschborn	100.00		40	15
NOVA Siebte GmbH[1]	Eschborn	100.00		41	16
NOVA Siebte GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	21	19
NTK Immobilien GmbH[1]	Hamburg	100.00		41	0
NTK Immobilien GmbH & Co. Management KG[2]	Hamburg	100.00		813	331
Ocean Container II[1]	Oslo, Norway	0.00		n/a	n/a
Ocean Giant LLC[1]	Majuro, Marshall Islands	0.00		476	476
Old Winterport Corp.[1]	Portland, USA	100.00		n/a	n/a
Pascon GmbH[1]	Wiesbaden	100.00		25	0
Paul Ernst Versicherungsvermittlungs mbH[1]	Hamburg	51.00		61	6
PAVONIS GmbH[1]	Eschborn	100.00		57	32
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		1,283	95
Philip Trading Opco LLC[1]	Majuro, Marshall Islands	0.00		328	10,469
Phoenix Beteiligungsgesellschaft mbH[5]	Düsseldorf	100.00		108,349	0
POHACONO GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	7	47
Puffin Aircraft Leasing Ltd.[1]	Dublin, Ireland	0.00		n/a	n/a
Quoniam Asset Management GmbH[1]	Frankfurt am Main	88.00	100.00	25,403	15,562
Quoniam Funds Selection SICAV - Global Credit Libor EUR I[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		631	4
R+V Direktversicherung AG[1 5]	Wiesbaden	100.00		13,320	0
R+V Erste Anlage GmbH[1]	Wiesbaden	100.00		1,073	1
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		1,801,622	0
R+V Krankenversicherung AG[1]	Wiesbaden	100.00		68,485	5,500
R+V Kureck Immobilien GmbH[1]	Wiesbaden	100.00		37	2
R+V Leben Wohn GmbH & Co. KG[1]	Wiesbaden	100.00		67,781	374
R+V Lebensversicherung Aktiengesellschaft[1 5]	Wiesbaden	100.00		434,981	0
R+V Luxembourg Lebensversicherung S.A.[1]	Strassen, Luxembourg	100.00		311,449	33,947
R+V Mannheim P2 GmbH[1]	Wiesbaden	94.00		59,929	1,942
R+V Pensionsfonds AG[1]	Wiesbaden	100.00		26,003	1,850
R+V Pensionskasse AG[1]	Wiesbaden	100.00		105,772	400
R+V Personen Holding GmbH[1 5]	Wiesbaden	100.00		732,589	0
R+V Rechtsschutz-Schadenregulierungs-GmbH[1]	Wiesbaden	100.00		115	32
R+V Service Center GmbH[1 5]	Wiesbaden	100.00		2,869	0
R+V Service Holding GmbH[1 5]	Wiesbaden	100.00		171,910	0
R+V Treuhand GmbH[1]	Wiesbaden	100.00		36	-5
R+V Versicherung AG[5]	Wiesbaden	92.08		2,149,774	0
RAS Grundstücksverwaltungsgesellschaft mbH[1]	Eschborn	100.00		21	-34
RC II S.a.r.l.[1]	Luxembourg, Luxembourg	90.00		9,497	361
ReiseBank Aktiengesellschaft[1 5]	Frankfurt am Main	100.00		19,267	0
RISALIS GmbH[1]	Eschborn	100.00		39	14
RISALIS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	19	17
RUBINOS GmbH[1]	Eschborn	100.00		87	62
RUV Agenturberatungs GmbH[1]	Wiesbaden	100.00		383	116
RV-CVIII Holdings, LLC[1]	Camden, USA	100.00		42,888	1,162
S2 Shipping and Offshore Ptd Ltd.[1]	Singapore, Singapore	0.00		n/a	n/a
SAREMA GmbH[1]	Eschborn	100.00		50	25
SAREMA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	52.00	32	367
Scheepvaartschappij Ewout B.V.[1]	Rotterdam, Netherlands	0.00		n/a	n/a
Schuster Versicherungsmakler GmbH[1]	Bielefeld	51.00		326	163
Schuster Versicherungsservice GmbH[1]	Bielefeld	100.00		28	0
Schwäbisch Hall Facility Management GmbH[1]	Schwäbisch Hall	51.00		4,007	120
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		636	2
SECURON Versicherungsmakler GmbH[1]	Munich	51.00		788	409
Shamrock Trading Opco LLC[1]	Majuro, Marshall Islands	0.00		-4,055	-978
Shark Aircraft Leasing (Ireland) Limited i. L.[1]	Dublin, Ireland	0.00		n/a	n/a

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
SHT Schwäbisch Hall Training GmbH[1]	Schwäbisch Hall	100.00		5,428	448
SIIM Fund I (Shipping and Intermodal Investment Management Fund)[1]	Majuro, Marshall Islands	0.00		n/a	n/a
SIIM Fund II (Shipping and Intermodal Investment Management Fund II) LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
SIIM Marlin Holdings LLC[1]	Majuro, Marshall Islands	63.81		n/a	n/a
SIKINOS GmbH[1]	Eschborn	100.00		232	207
SINALOA Aircraft Leasing Limited[1]	Floriana, Malta	0.00		n/a	n/a
Sprint Sanierung GmbH[1]	Cologne	100.00		31,611	608
SRF I Limited[1]	Floriana, Malta	0.00		n/a	n/a
SRF II Limited[1]	Floriana, Malta	0.00		n/a	n/a
SRF III Limited[1]	Floriana, Malta	0.00		n/a	n/a
Stani Trading Opco LLC[1]	Majuro, Marshall Islands	0.00		486	9,400
Stephenson Capital Limited[1]	George Town, Cayman Islands	0.00		n/a	n/a
Stormers Aircraft Leasing (Malta) Ltd.[1]	Floriana, Malta	100.00	0.00	n/a	n/a
Taigetos Funding LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Taigetos II LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Taigetos III LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
TeamBank AG Nürnberg[2,5]	Nuremberg	92.34		639,699	0
TEGANON GmbH[1]	Eschborn	100.00		27	2
TEGANON GmbH & Co. Immobilien KG[1,6]	Eschborn	100.00		3	20
Terra Maris I LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Tiger Aircraft Leasing (UK) Limited[1]	London, UK	0.00		n/a	n/a
TILIAS GmbH[1]	Eschborn	100.00		44	19
TILIAS GmbH & Co. Immobilien KG[1]	Eschborn	50.00	76.00	24	23
TOPAS GmbH[1]	Eschborn	100.00		49	24
TOPAS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	30	29
TUKANA GmbH[1]	Eschborn	100.00		43	18
TUKANA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	22	21
Twenty Holding Private Limited[1]	Singapore, Singapore	0.00		n/a	n/a
UI Vario: 2 issued by Union Investment Luxembourg S.A.[1]	Luxembourg, Luxembourg	0.00		n/a	n/a
UII Issy 3 Moulins SARL[1]	Paris, France	100.00		8	-2
UII Verwaltungsgesellschaft mbH[1]	Hamburg	100.00		25	0
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
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		n/a	n/a
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
UIR FRANCE 1 S.a.r.l.[1]	Paris, France	100.00		33	2
UIR FRANCE 2 S.a.r.l.[1]	Paris, France	100.00		35	2
UIR Verwaltungsgesellschaft mbH[1]	Hamburg	100.00		90	4
UMB Unternehmens-Managementberatungs GmbH[1]	Wiesbaden	100.00		1,452	528
UMBI GmbH[1]	Wiesbaden	100.00		77	5
UniInstitutional European Mixed Trend[1]	Luxembourg, Luxembourg	0.00		n/a	n/a
UniInstitutional Global Bonds Select[1]	Luxembourg, Luxembourg	0.00		n/a	n/a
UniObligacje High Yield FIZ[1]	Warsaw, Poland	0.00		n/a	n/a
Union Asset Management Holding AG[2]	Frankfurt am Main	96.50		705,432	327,431
Union Investment Austria GmbH[1]	Vienna, Austria	100.00		13,328	-1,582
Union Investment Financial Services S.A.[1]	Luxembourg, Luxembourg	100.00		17,584	1,630
Union Investment Institutional GmbH[1,5,6]	Frankfurt am Main	100.00		68,970	0
Union Investment Institutional Property GmbH[1,6]	Hamburg	90.00		19,667	5,707
Union Investment Luxembourg S.A.[1]	Luxembourg, Luxembourg	100.00		222,737	76,590
Union Investment Privatfonds GmbH[1,5,6]	Frankfurt am Main	100.00		285,942	0
Union Investment Real Estate Asia Pacific Pte. Ltd.[1]	Singapore, Singapore	100.00		1,928	736
Union Investment Real Estate Austria AG[1]	Vienna, Austria	94.50		7,215	0
Union Investment Real Estate France S.A.S.[1]	Paris, France	100.00		2,934	1,315
Union Investment Real Estate GmbH[2,6]	Hamburg	94.50		162,227	52,900
Union Investment Service Bank AG[1,5,6]	Frankfurt am Main	100.00		42,115	0

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Union Investment Towarzystwo Funduszy Inwestycyjnych S.A.[1]	Warsaw, Poland	100.00		29,047	6,620
Union IT-Services GmbH[1 5 6]	Frankfurt am Main	100.00		3,485	0
Union Service-Gesellschaft mbH[1 5 6]	Frankfurt am Main	100.00		7,079	0
UniStrategia Opcja na Zysk[1]	Warsaw, Poland	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		n/a	n/a
US Owner Trust N564RP[1]	Wilmington, USA	0.00		10,976	2,642
VAUTID (SHANGHAI) Wear Resistant Material Trading Co. Ltd.[1]	Shanghai, China	100.00		1,088	317
VAUTID Austria GmbH[1]	Marchtrenk, Austria	100.00		682	54
VAUTID GmbH[1]	Ostfildern	82.51		5,567	641
VAUTID INDIA PRIVATE LIMITED[1]	Mumbai, India	100.00		n/a	n/a
Vautid North America, Inc.[1]	Carnegie, USA	0.00	100.00	-334	5
VisualVest GmbH[1 6]	Frankfurt am Main	100.00		7,525	-5,157
VMB Vorsorgemanagement für Banken GmbH[1]	Overath	90.00		58	-8
vohtec Qualitätssicherung GmbH[1]	Aalen	74.57	74.58	10,488	2,115
VR BKE Beratungsgesellschaft für Klima & Energie GmbH i.L.[1]	Wiesbaden	66.67		243	0
VR Consultingpartner GmbH[2]	Frankfurt am Main	100.00		2,468	-521
VR Corporate Finance GmbH	Düsseldorf	100.00		832	-3,764
VR DISKONTBANK GmbH[1 5]	Eschborn	100.00		101,147	0
VR Equity Gesellschaft für regionale Entwicklung in Bayern mbH[1]	Frankfurt am Main	100.00		2,393	-107
VR Equitypartner Beteiligungskapital GmbH & Co. KG UBG[2]	Frankfurt am Main	100.00		35,986	0
VR Equitypartner GmbH[3]	Frankfurt am Main	100.00		90,630	21,560
VR Equitypartner Management GmbH[1]	Frankfurt am Main	100.00		377	-64
VR FACTOREM GmbH[1 5]	Eschborn	100.00		39,385	0
VR GbR[2]	Frankfurt am Main	100.00		193,105	0
VR Hausbau AG[1]	Stuttgart	94.48		2,750	0
VR HYP GmbH[1]	Hamburg	100.00		25	0
VR ImmoConsult GmbH[1]	Düsseldorf	51.00		373	73
VR Kreditservice GmbH[1 5]	Hamburg	100.00		25	0
VR Real Estate GmbH[1]	Hamburg	100.00		25	0
VR WERT Gesellschaft für Immobilienbewertung mbH[1 5]	Hamburg	100.00		50	0
VR-IMMOBILIEN-LEASING GmbH[1 5]	Eschborn	100.00		14,123	0
VR-LEASING ABYDOS GmbH[1]	Eschborn	100.00		56	31
VR-LEASING ABYDOS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	-66	57
VR-LEASING AKANTHUS GmbH[1]	Eschborn	100.00		27	2
VR-LEASING AKANTHUS GmbH & Co. Immobilien KG[1]	Eschborn	100.00		3	21
VR-LEASING Aktiengesellschaft[5]	Eschborn	100.00		211,070	0
VR-LEASING ALDEBARA GmbH[1]	Eschborn	100.00		42	17
VR-LEASING ALDEBARA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	-434	-17
VR-LEASING AMETRIN GmbH[1]	Eschborn	100.00		27	2
VR-LEASING AMETRIN GmbH & Co. Immobilien KG[1]	Eschborn	100.00		3	29
VR-LEASING ARINA GmbH[1]	Eschborn	100.00		48	23
VR-LEASING ARINA GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	29	28
VR-LEASING ARKI GmbH[1]	Eschborn	100.00		51	26
VR-LEASING ARKI GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	32	31
VR-LEASING ASINE GmbH[1]	Eschborn	100.00		47	22
VR-LEASING ASINE GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	-250	17
VR-LEASING ASOPOS GmbH[1]	Eschborn	100.00		27	2
VR-LEASING ASOPOS GmbH & Co. Immobilien KG[1]	Eschborn	100.00		3	16
VR-LEASING ATRIA GmbH[1]	Eschborn	100.00		40	15
VR-LEASING ATRIA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	55.00	20	19
VR-LEASING AVENTURIN GmbH[1]	Eschborn	100.00		40	15
VR-LEASING AVENTURIN GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	22	18
VR-LEASING BETA GmbH[1]	Eschborn	100.00		27	2
VR-LEASING BETA GmbH & Co. Immobilien KG[1]	Eschborn	100.00		3	23
VR-Leasing Beteiligungs GmbH[1]	Eschborn	100.00		77,242	3,671
VR-LEASING DELOS GmbH[1]	Eschborn	100.00		27	2
VR-LEASING DELOS GmbH & Co. Immobilien KG[1]	Eschborn	100.00		3	25
VR-LEASING DIVO GmbH[1]	Eschborn	100.00		55	30
VR-LEASING DIVO GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	40	37
VR-LEASING DOBAS GmbH & Co. Immobilien KG[1]	Eschborn	100.00		5	47
VR-LEASING ERIDA GmbH[1]	Eschborn	100.00		40	3
VR-LEASING ERIDA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	-231	-163

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR-LEASING FABIO GmbH[1]	Eschborn	100.00		36	11
VR-LEASING FABIO GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	15	14
VR-LEASING FACTA GmbH[1]	Eschborn	100.00		25	0
VR-LEASING FAGURA GmbH & Co. Erste Immobilien KG[1,6]	Eschborn	100.00		3	17
VR-LEASING FAGURA GmbH & Co. Sechste Immobilien KG[1]	Eschborn	6.00	76.00	27	19
VR-LEASING FAGURA GmbH & Co. Siebte Immobilien KG[1]	Eschborn	6.00	68.00	27	25
VR-LEASING FARINA GmbH[1]	Eschborn	100.00		38	12
VR-LEASING FARINA GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	16	15
VR-LEASING FERRIT GmbH & Co. Erste Immobilien KG[1]	Eschborn	6.00	76.00	862	92
VR-LEASING FERRIT GmbH & Co. Fünfte Immobilien KG[1]	Eschborn	6.00	76.00	20	18
VR-LEASING FERRIT GmbH & Co. Zweite Immobilien KG[1]	Eschborn	0.00	52.00	-367	66
VR-LEASING FLAVUS GmbH[1]	Eschborn	100.00		40	15
VR-LEASING FLAVUS GmbH & Co. Immobilien KG[1]	Eschborn	100.00		-1,518	-37
VR-LEASING FORTUNA GmbH[1]	Eschborn	100.00		25	0
VR-LEASING FRONTANIA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	1,022	99
VR-LEASING FULVIUS GmbH[1]	Eschborn	100.00		48	23
VR-LEASING Hauptverwaltung GmbH & Co. KG[1]	Eschborn	94.80	76.00	6,860	0
VR-LEASING IKANA GmbH[1]	Eschborn	100.00		54	29
VR-LEASING IKANA GmbH & Co. Immobilien KG[1,6]	Eschborn	6.00	76.00	4	31
VR-LEASING Immobilien-Holding GmbH & Co. KG[1,6]	Eschborn	0.00	51.00	231	94
VR-LEASING IRIS GmbH[1]	Eschborn	100.00		38	13
VR-LEASING IRIS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	17	16
VR-LEASING ISORA GmbH[1]	Eschborn	100.00		40	15
VR-LEASING ISORA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	19	18
VR-LEASING KOSMOS GmbH[1,5]	Eschborn	100.00		89	0
VR-LEASING LEROS GmbH[1]	Eschborn	100.00		42	17
VR-LEASING LEROS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	20	18
VR-LEASING LIMNOS GmbH[1]	Eschborn	100.00		42	17
VR-LEASING LIMNOS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	22	21
VR-LEASING LOTIS GmbH[1]	Eschborn	100.00		58	33
VR-LEASING LOTIS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	41	39
VR-LEASING LYRA GmbH[1]	Eschborn	100.00		54	29
VR-LEASING LYRA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	39	41
VR-LEASING MADIUM GmbH[1]	Eschborn	100.00		113	88
VR-LEASING MADIUM GmbH & Co. Immobilien KG[1,6]	Eschborn	100.00		103	106
VR-LEASING MADRAS GmbH[1]	Eschborn	100.00		25	-1
VR-LEASING MADURA GmbH[1]	Eschborn	100.00		15	-10
VR-LEASING MAGADIS GmbH[1]	Eschborn	100.00		71	46
VR-LEASING MAGADIS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	51.00	42	58
VR-LEASING MALAKON GmbH[1]	Eschborn	100.00		36	10
VR-LEASING MALAKON GmbH & Co. Immobilien KG[1]	Eschborn	15.00	75.50	3,181	213
VR-LEASING MANEGA GmbH[1]	Eschborn	100.00		38	13
VR-LEASING MANEGA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	75.50	-11	23
VR-LEASING MANIOLA GmbH[1]	Eschborn	100.00		39	13
VR-LEASING MANIOLA GmbH & Co. Immobilien KG[1]	Eschborn	11.20	51.00	2,460	145
VR-LEASING MARKASIT GmbH[1]	Eschborn	100.00		26	1
VR-LEASING MARKASIT GmbH & Co. Immobilien KG[1]	Eschborn	100.00		-38	46
VR-LEASING MAROS GmbH[1]	Eschborn	100.00		42	17
VR-LEASING MAROS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	21	20
VR-LEASING MARTES GmbH[1]	Eschborn	100.00		39	13
VR-LEASING MARTES GmbH & Co. Immobilien KG[1]	Eschborn	14.50	51.00	1,830	112
VR-LEASING MAXIMA GmbH[1]	Eschborn	100.00		26	1
VR-LEASING MENTHA GmbH[1]	Eschborn	100.00		35	9
VR-LEASING MENTHA GmbH & Co. Immobilien KG[1]	Eschborn	22.00	51.00	787	52
VR-LEASING MENTUM GmbH[1]	Eschborn	100.00		47	22
VR-LEASING MENTUM GmbH & Co. Immobilien KG[1]	Eschborn	7.80	51.00	4,535	435
VR-LEASING MERGUS GmbH[1]	Eschborn	100.00		44	19
VR-LEASING MERGUS GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	23	23
VR-LEASING METIS GmbH[1]	Eschborn	100.00		25	-7
VR-LEASING METRO GmbH & Co. Objekte Rhein-Neckar KG[1]	Eschborn	100.00		-590	202
VR-LEASING MILETOS GmbH[1]	Eschborn	100.00		45	20
VR-LEASING MILETOS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	25	24
VR-LEASING MILIUM GmbH[1]	Eschborn	100.00		40	15

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR-LEASING MILIUM GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	19	18
VR-LEASING MILVUS GmbH[1]	Eschborn	100.00		26	0
VR-LEASING MORIO GmbH[1]	Eschborn	100.00		25	0
VR-LEASING MUNDA GmbH[1]	Eschborn	100.00		27	2
VR-LEASING MUNDA GmbH & Co. Immobilien KG[1]	Eschborn	100.00		3	55
VR-LEASING MUSCAN GmbH[1]	Eschborn	100.00		35	9
VR-LEASING MUSCAN GmbH & Co. Immobilien KG[1]	Eschborn	19.10	51.00	941	60
VR-LEASING MUSTELA GmbH[1]	Eschborn	100.00		53	28
VR-LEASING NALANDA GmbH[1]	Eschborn	100.00		44	18
VR-LEASING NALANDA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	75.50	20	22
VR-LEASING NAPOCA GmbH[1]	Eschborn	100.00		39	14
VR-LEASING NAPOCA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	51.00	57	143
VR-LEASING NATANTIA GmbH[1]	Eschborn	100.00		53	26
VR-LEASING NAVARINO GmbH[1]	Eschborn	100.00		66	41
VR-LEASING NAVARINO GmbH & Co. Immobilien KG[1]	Eschborn	100.00		-472	153
VR-LEASING NEKTON GmbH[1]	Eschborn	100.00		26	0
VR-LEASING NESTOR GmbH[1]	Eschborn	100.00		48	23
VR-LEASING NESTOR GmbH & Co. Immobilien KG[1]	Eschborn	6.00	75.50	22	29
VR-LEASING NETTA GmbH[1]	Eschborn	100.00		56	25
VR-LEASING NETTA GmbH & Co. Immobilien KG[1, 6]	Eschborn	94.00	51.00	14	32
VR-LEASING NOVA Fünfte GmbH[1]	Eschborn	100.00		55	30
VR-LEASING NOVA Vierte GmbH[1]	Eschborn	100.00		56	31
VR-LEASING ONDATRA GmbH[1]	Eschborn	100.00		55	30
VR-LEASING ONDATRA GmbH & Co. Immobilien KG[1]	Eschborn	0.00	51.00	37	35
VR-LEASING ONYX GmbH[1]	Eschborn	100.00		40	14
VR-LEASING ONYX GmbH & Co. Immobilien KG[1]	Eschborn	100.00		-132	1,195
VR-LEASING OPAVA GmbH[1]	Eschborn	100.00		26	1
VR-LEASING OPAVA GmbH & Co. Immobilien KG[1]	Eschborn	100.00		-2,382	591
VR-LEASING OPHIR GmbH[1]	Eschborn	100.00		31	5
VR-LEASING OPHIR GmbH & Co. Immobilien KG[1]	Eschborn	100.00	83.66	-7,433	638
VR-LEASING OPTIMA GmbH[1]	Eschborn	100.00		74	48
VR-LEASING OPTIMA GmbH & Co. Immobilien KG[1]	Eschborn	0.00	51.00	-87	82
VR-LEASING ORDO GmbH[1]	Eschborn	100.00		41	15
VR-LEASING OSMERUS GmbH[1]	Eschborn	100.00		72	46
VR-LEASING PAROS GmbH[1]	Eschborn	100.00		122	97
VR-LEASING PAROS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	73	242
VR-LEASING POCO GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	-6	34
VR-LEASING REGELSCHULE GmbH & Co. Immobilien KG[1]	Eschborn	0.00	51.00	19	18
VR-LEASING RUSSLAND Holding GmbH[1]	Eschborn	100.00		538	0
VR-LEASING SALIX GmbH[1]	Eschborn	100.00		75	50
VR-LEASING SALIX GmbH & Co. Immobilien KG[1]	Eschborn	0.00	51.00	61	60
VR-LEASING SALONA GmbH[1]	Eschborn	100.00		33	8
VR-LEASING SALONA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	75.50	9	37
VR-LEASING SALVIA GmbH[1]	Eschborn	100.00		215	189
VR-LEASING SAMARA GmbH[1]	Eschborn	100.00		86	60
VR-LEASING SAMARA GmbH & Co. Immobilien KG[1]	Eschborn	100.00		73	81
VR-LEASING SANAGA GmbH[1]	Eschborn	100.00		47	22
VR-LEASING SANAGA GmbH & Co. Immobilien KG[1, 6]	Eschborn	100.00		27	26
VR-LEASING SANIDOS GmbH[1]	Eschborn	100.00		43	18
VR-LEASING SANIDOS GmbH & Co. Immobilien KG[1]	Eschborn	4.00	52.00	26	25
VR-LEASING SARITA GmbH[1]	Eschborn	100.00		42	17
VR-LEASING SARITA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	21	20
VR-LEASING SASKIA GmbH[1]	Eschborn	100.00		42	17
VR-LEASING SASKIA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	21	20
VR-LEASING SEPIA GmbH[1]	Eschborn	100.00		35	10
VR-LEASING SEPIA GmbH & Co. Immobilien KG[1]	Eschborn	4.00	52.00	815	14
VR-LEASING SIGUNE GmbH[1]	Eschborn	100.00		42	17
VR-LEASING SIGUNE GmbH & Co. Immobilien KG[1]	Eschborn	6.00	68.00	22	21
VR-LEASING SIMA GmbH[1]	Eschborn	100.00		49	24
VR-LEASING SIMA GmbH & Co. Immobilien KG[1]	Eschborn	0.00	51.00	30	28
VR-LEASING SINABIS GmbH[1]	Eschborn	100.00		34	9
VR-LEASING SINABIS GmbH & Co. Immobilien KG[1]	Eschborn	6.00	75.50	14	11
VR-LEASING SIRIUS GmbH[1]	Eschborn	100.00		27	2

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR-LEASING SIRIUS GmbH & Co. Immobilien KG[1 6]	Eschborn	100.00		3	29
VR-LEASING SOLIDUS Dreizehnte GmbH[1]	Eschborn	100.00		46	20
VR-LEASING SOLIDUS Dreizehnte GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	26	25
VR-LEASING SOLIDUS Elfte GmbH[1]	Eschborn	100.00		46	20
VR-LEASING SOLIDUS Elfte GmbH & Co. Immobilien KG[1]	Eschborn	94.00	76.00	26	25
VR-LEASING SOLIDUS Erste GmbH[1]	Eschborn	100.00		24	-1
VR-LEASING SOLIDUS Fünfte GmbH[1]	Eschborn	100.00		29	4
VR-LEASING SOLIDUS Neunte GmbH[1]	Eschborn	100.00		35	10
VR-LEASING SOLIDUS Neunte GmbH & Co. Immobilien KG[1]	Eschborn	0.00	52.00	2,614	589
VR-LEASING SOLIDUS Neunzehnte GmbH[1]	Eschborn	100.00		44	19
VR-LEASING SOLIDUS Neunzehnte GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	24	23
VR-LEASING SOLIDUS Sechzehnte GmbH[1]	Eschborn	100.00		41	16
VR-LEASING SOLIDUS Sechzehnte GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	21	19
VR-LEASING SOLIDUS Siebte GmbH[1]	Eschborn	100.00		24	-1
VR-LEASING SOLIDUS Vierzehnte GmbH[1]	Eschborn	100.00		41	16
VR-LEASING SOLIDUS Zweite GmbH[1]	Eschborn	100.00		52	27
VR-LEASING SOLIDUS Zweite GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	33	11
VR-LEASING SOLIDUS Zwölfte GmbH[1]	Eschborn	100.00		47	22
VR-LEASING TELLUR GmbH[1]	Eschborn	100.00		46	21
VR-LEASING TELLUR GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	26	25
VR-LEASING ZAWISLA GmbH & Co. Immobilien KG[1]	Eschborn	6.00	76.00	25	15
Wadi Funding LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Wadi Woraya I LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Wadi Woraya III LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Wasps Aircraft Leasing (Ireland) Limited i. L.[1]	Dublin, Ireland	0.00		n/a	n/a
Waverley Shipping Opco LLC[1]	Majuro, Marshall Islands	0.00		-5,014	-3,036
WBS Wohnwirtschaftliche Baubetreuungs- und Servicegesellschaft mbH[1]	Stuttgart	94.90		16,068	2,344
Weinmann GmbH & Co. Objekt Eichwald KG[1 6]	Eschborn	100.00		3	49
WGZ Immobilien + Management GmbH[5]	Münster	100.00		35	0
WGZ ImmobilienKontor GmbH[1]	Münster	100.00		61	0
WGZ ImmobilienKontor GmbH & Co. KG[1]	Münster	55.00		72	149
WL BANK AG Westfälische Landschaft Bodenkreditbank[3 5]	Münster	90.92		355,084	0
ZPF Asia Pacific Pte. Ltd.[1]	Singapore, Singapore	100.00		n/a	n/a
ZPF Holding GmbH i. L.[1]	Siegelsbach	95.58		21	-680
ZPF Industrial Furnaces (Taicang) Co. Ltd.[1]	Taicang, China	100.00		n/a	n/a
ZPF Services GmbH i. L.[1]	Heilbronn	100.00		61	36
ZPF Therm Maschinenbau GmbH i. L.[1]	Siegelsbach	100.00		5,371	-338

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	10,976	2,642
AerCap Partners I Ltd.[1]	Shannon, Ireland	50.00	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		11,209	869
BEA Union Investment Management Limited[1]	Hong Kong, Hong Kong	49.00		59,233	7,715
Ceskomoravska stavebni sporitelna a. s.[1]	Prague, Czech Republic	45.00		360,695	40,848
D8 Product Tankers I LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
D8 Product Tankers Investments LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Deucalion MC Engine Leasing (Ireland) Ltd.[1]	Dublin, Ireland	0.00		8,786	719
Deutsche WertpapierService Bank AG	Frankfurt am Main	50.00		182,463	11,128
DGVR Alpha Mobilien-Verwaltungsgesellschaft mbH[1]	Eschborn	50.00		25	0
DUO PLAST Holding GmbH[1]	Lauterbach	47.43		14,474	1,614
DZ BANK Galerie im Städel Kunstverwaltungsgesellschaft mbH	Frankfurt am Main	50.00		18	-1
GMS Holding GmbH[1]	Paderborn	58.89	45.00	9,711	711
Herakleitos 3050 LLC[1]	Majuro, Marshall Islands	50.00		n/a	n/a
Intermodal Investment Fund IV LLC[1]	Majuro, Marshall Islands	0.00		24,133	3,387
Intermodal Investment Fund VIII LLC[1]	Majuro, Marshall Islands	50.00	0.00	6,984	948
IZD-Holding S.à.r.l.[1]	Luxembourg, Luxembourg	50.30	50.00	42,861	-390
Leuna Tenside Holding GmbH[1]	Leuna	50.00		9,430	-1,659
MS Oceana Schifffahrtsgesellschaft mbH & Co. KG[1]	Hamburg	50.00	0.00	7,041	-595
MS Octavia Schifffahrtsgesellschaft mbH & Co. KG[1]	Hamburg	50.00	0.00	5,695	-1,063
Norafin Verwaltungs GmbH[1]	Mildenau	44.72		n/a	n/a
Prvá stavebná sporitel'na, a. s.[1]	Bratislava, Slovakia	32.50		240,150	22,747
R+V Kureck Immobilien GmbH Grundstücksverwaltung Braunschweig[1]	Wiesbaden	50.00		8,119	363
Raiffeisen Banca Pentru Locuinte S.A.[1]	Bucharest, Romania	33.32		15,538	222
TAG ASSET Management LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
TrustBills GmbH	Hamburg	25.00		66	-9
VB-Leasing International Holding GmbH[1]	Vienna, Austria	50.00		79,469	1,298
Versicherungs-Vermittlungsgesellschaft des Sächsischen Landesbauernverbandes mbH[1]	Dresden	50.00		200	22
Versicherungs-Vermittlungsgesellschaft mbH des Bauernverbandes Mecklenburg-Vorpommern e. V. (VVB)[1]	Neubrandenburg	50.00		156	11
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Brandenburg (VVB)[1]	Teltow	50.00		33	4
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Sachsen-Anhalt e. V. (VVB)[1]	Magdeburg	50.00		50	7
Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse) Ltd.[1]	Tianjin, China	24.90		362,713	25,993

ASSOCIATES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
8F Leasing S.A.[1]	Contern, Luxembourg	0.00		n/a	n/a
A330 Parts Ltd.[1]	Newark, USA	0.00		10,976	2,642
Aer Lucht Limited[1]	Dublin, Ireland	0.00		n/a	n/a
Artemis Gas 1 Shipping Inc.[1]	Piraeus, Greece	0.00		n/a	n/a
Aviateur Capital Limited[1]	Dublin, Ireland	20.00		2,052	214
Bankenkonsortium der Zenit GmbH, GbR	Mülheim an der Ruhr	33.30		0	0
bbv-service Versicherungsmakler GmbH[1]	Munich	25.20		1,822	454
Box TopCo AS[1]	Oslo, Norway	0.00		n/a	n/a
Cassa Centrale Banca - Credito Cooperativo del Nord Est Società per Azioni	Trento, Italy	25.00	26.47	225,508	14,807
Celestyal Cruises Ltd.[1]	Strovolos, Cyprus	49.00	33.33	n/a	n/a
Danae Gas Shipping Inc[1]	Majuro, Marshall Islands	0.00		n/a	n/a
Dr. Förster Holding GmbH[1]	Neu-Isenburg	20.06		n/a	n/a
Epic Pantheon International Gas Shipping Ltd.[1]	Tortola, Virgin Islands	0.00		n/a	n/a
ERR Rail Rent Vermietungs GmbH[1]	Vienna, Austria	9.00		n/a	n/a
European Convenience Food GmbH[1]	Borken	45.19		-2,232	-2,273
European Property Beteiligungs-GmbH[1]	Frankfurt am Main	38.90	33.20	1,028	-22
GGB-Beratungsgruppe GmbH	Stuttgart	23.13		-1,123	-1,858
GHM Holding GmbH[1]	Regenstauf	40.00		17,236	-25
GHM MPP Reserve GmbH[1]	Regenstauf	50.00		361	-3
GHM MPP Verwaltungs GmbH[1]	Regenstauf	50.00		28	0
Global Asic GmbH[1]	Dresden	30.80		13,987	85,510
Global Offshore Services B.V.[1]	Amsterdam, Netherlands	32.00	0.00	n/a	n/a
Goldeck Zetti Beteiligungsgesellschaft mbH[1]	Leipzig	39.23		25,744	-1,938
Gram Car Carriers Holdings Pte. Ltd.[1]	Singapore, Singapore	0.00		n/a	n/a
Hör Technologie GmbH[1]	Weiden i.d.OPf.	61.54	49.99	7,907	1,109
Kapitalbeteiligungsgesellschaft für die mittelständische Wirtschaft in Nordrhein-Westfalen mbH - KBG -	Neuss	23.60		2,284	560
KCM Bulkers Ltd.[1]	Tortola, Virgin Islands	0.00		n/a	n/a
KOTANI JV CO. BV[1]	Amsterdam, Netherlands	0.00		81,406	11,627
KTP Holding GmbH[1]	Bous	37.36		24,098	4,643
Mandarin Containers Limited[1]	Tortola, Virgin Islands	0.00		n/a	n/a
Modex Holding Limited (BVI)[1]	Tortola, Virgin Islands	0.00		n/a	n/a
MON A300 Leasing Ltd.[1]	George Town, Cayman Islands	0.00		79	1,692
MON Engine Parts Inc.[1]	Wilmington, USA	20.00		3,658	322
Mount Faber KS[1]	Oslo, Norway	0.00		n/a	n/a
MSEA Aframax Holdings LLC[1]	Majuro, Marshall Islands	0.00		n/a	n/a
MSEA Marlin Holdings LLC[1]	Majuro, Marshall Islands	48.95		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	n/a	n/a
Neida Holding AG[1]	Appenzell, Switzerland	35.00		-1,426	-2,707
Ostertag Holding GmbH[1]	Walddorfhäslach	54.68	49.90	n/a	n/a
Piller Entgrattechnik GmbH[1]	Ditzingen	40.00		8,751	1,478
PI-SM GmbH[1]	Ehringshausen	32.30		n/a	n/a
SCL GmbH[1]	Butzbach	49.00		6,544	760
Sementis GmbH Stephan Behr Vermögensverwaltung[1]	Eisenach	24.90	0.00	12,174	13
Service-Direkt Telemarketing Verwaltungsgesellschaft mbH	Weinheim	32.83		5,467	1
SRF Railcar Leasing Limited[1]	Cashel, Ireland	100.00	0.00	n/a	n/a
TAP Ltd.[1]	Hamilton, Bermuda	38.05		n/a	n/a
TES Holding Ltd.[1]	Bridgend, UK	40.00		30,702	-5,263
Touax Rail Finance 3 Ltd.[1]	Bracetown, Ireland	0.00		n/a	n/a
Treuhand- und Finanzierungsgesellschaft für Wohnungs- und Bauwirtschaft mit beschränkter Haftung. Treufinanz	Düsseldorf	33.14		2,453	-240
TREVA Entertainment GmbH i. L.[1]	Hamburg	32.70		1,269	-529
United MedTec Holding GmbH[1]	Bückeburg	41.01		9,521	330
VR Mittelstandskapital Unternehmensbeteiligungs AG[2]	Düsseldorf	39.26		11,293	-2,015
Weisshaar Holding GmbH[1]	Frankfurt am Main	84.94	49.92	25	0
Wessel-Werk Beteiligungsverwaltung GmbH i. L.[1]	Karlsruhe	45.00		-2,088	-1,527
WÜRTT. GENO-HAUS GmbH & Co. KG	Stuttgart	29.70		38,823	1,543
Zarges Tubesca Finance GmbH[1]	Weilheim	26.67		18	11

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	0	99
Assiconf S.r.l.[1]	Turin, Italy	20.00		80	6
ASSICRA Servizi Assisurativi Banche di Credito Cooperativo Abruzzo e Molise S.r.l.[1]	Pescara, Italy	25.00		376	28
ATRION Immobilien GmbH & Co. KG[1]	Grünwald	31.63		45,241	4,808
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		300	-40
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		26,328	1,340
Bürgschaftsbank Mecklenburg-Vorpommern GmbH	Schwerin	30.38		16,150	194
Bürgschaftsbank Sachsen-Anhalt GmbH	Magdeburg	29.73		14,949	93
Bürgschaftsbank Thüringen GmbH	Erfurt	22.13		23,397	910
CardProcess GmbH	Karlsruhe	39.80		30,693	272
CMMT Partners L.P[1]	Camden, USA	26.64	0.00	n/a	n/a
Corpus Sireo Health Care III[1]	Luxembourg, Luxembourg	33.90	0.00	n/a	n/a
Corpus Sireo Health Care IV[1]	Luxembourg, Luxembourg	99.60	0.00	n/a	n/a
Credit Suisse Global Infrastructure SCA SICAR[1]	Luxembourg, Luxembourg	30.09		348,090	117,121
Dacos Software GmbH[1]	Saarbrücken	29.96		n/a	n/a
DZ BANK Mikrofinanzfonds eG[2]	Frankfurt am Main	30.82	0.45	249	2
Finatem II GmbH & Co. KG[1]	Frankfurt am Main	20.20		23,213	-2,691
FREUNDE DER EINTRACHT FRANKFURT Aktiengesellschaft[1]	Frankfurt am Main	32.05		2,893	3
GbR Ottmann GmbH & Co. Südhausbau KG, München VR Hausbau AG, Stuttgart (GbR 'Ackermannbogen.de-Wohnen am Olympiapark')[1]	Munich	50.00		62	-4
GENO-Haus Stuttgart Beteiligungs GmbH	Stuttgart	33.33		29	0
GENO-Haus Stuttgart GmbH & Co. KG Verwaltungsgesellschaft	Stuttgart	45.45		13	0
GENOPACE GmbH[1]	Berlin	22.49		0	0
German Equity Partners III GmbH & Co. KG[1]	Frankfurt am Main	24.19		13,431	11,106
Gesellschaft für ernährungswirtschaftliche Beteiligungen mbH	Ochsenfurt	49.90		5,628	199
Global Infrastructure Partners III-C2, L.P.[1]	New York, USA	28.14	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	21,902	-10,196
Hermann-Löns-Grundstücks- und Entwicklungs GbR[1]	Bergisch-Gladbach	50.00		176	176
HGI Immobilien GmbH[1]	Frankfurt am Main	50.00		112	10
HGI Immobilien GmbH & Co. GB I KG[1]	Frankfurt am Main	73.91	73.21	15,081	814
Kredit-Garantiegemeinschaft des bayerischen Handwerks Gesellschaft mit beschränkter Haftung	Munich	20.00		4,846	0
Kreditgarantiegemeinschaft in Baden-Württemberg Verwaltungs-GmbH	Stuttgart	20.00		1,023	0
Laetitia Grundstücksverwaltungsgesellschaft mbH & Co. Vermietungs-KG	Pullach	39.00		-3,190	8
Locanis AG[1]	Unterföhring	41.28		0	-2,966
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	39.20	0.00	7,796	-1,772
Medico 12 GmbH & Co. KG[1]	Frankfurt am Main	99.98		2,058	-692
Mercateo Beteiligungsholding AG[1]	Taufkirchen	32.83		3,986	-262
P 21 GmbH - Power of the 21st Century i. L.[1]	Brunnthal	27.00	22.23	n/a	n/a
paydirekt GmbH	Frankfurt am Main	33.33		16,490	6,526
Q, Inc.[1]	San Francisco, USA	63.17		n/a	n/a
Schroder Italien Fonds GmbH & Co. KG[1]	Frankfurt am Main	23.08	19.74	728	-2,286
Schroder Property Services B.V.[1]	Amsterdam, Netherlands	30.00		141	40
Seguros Generales Rural S.A. de Seguros y Reaseguros[1]	Madrid, Spain	30.00		250,393	18,313
Technology DZ Venture Capital Fund I GmbH & Co. KG i. L.[1]	Munich	68.29		9,785	1,735
TF H III Technologiefonds Hessen Gesellschaft mit beschränkter Haftung	Wiesbaden	25.00		1,787	-18
TF H Technologie-Finanzierungsfonds Hessen Gesellschaft mit beschränkter Haftung (TF H GmbH) i. L.	Frankfurt am Main	33.33		574	0
Tishman Speyer Brazil Feeder (Scots/D), L.P.[1]	Edinburgh, UK	100.00		28,326	3,284
Tishman Speyer European Strategic Office Fund Feeder, L.P.[1]	London, UK	97.18		19,895	7,249
TXS GmbH[1]	Ellerau	24.50		200	665
VAUTID & HUIFENG (WUHU) Wear Resistant Material Co. Ltd.[1]	Wuhu, China	50.00		1,040	358
VAUTID Arabia Coating & Treatment of Metals LLC[1]	Ras Al Khaimah, United Arab Emirates	24.50	0.00	213	-41
VAUTID-SHAH HARDFACE Pvt. Ltd.[1]	Navi Mumbai, India	37.49		1,798	2,160
VBI Beteiligungs GmbH[1]	Vienna, Austria	24.50		70,472	-377,713
VR FinanzDienstLeistung GmbH	Berlin	24.50		2,181	313
VR-LEASING FIXUM GmbH[1]	Eschborn	100.00		37	12
VR-NetWorld GmbH[2]	Bonn	43.48		4,162	207
VV Immobilien GmbH & Co. United States KG[1]	Munich	25.00		7	80
ZhangJiaGang Vautid Yao Yu Wear Resistance Material Co., Ltd.[1]	Yangshe Town, China	50.00		n/a	n/a

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		421,484	37,357
Concardis GmbH	Eschborn	19.60		74,914	24,202
DEPFA BeteiligungsHolding II Gesellschaft mit beschränkter Haftung[1]	Düsseldorf	10.00		266	79,458
EDEKABANK Aktiengesellschaft	Hamburg	8.35		89,935	3,649
equensWorldline SE	Utrecht, Netherlands	11.89		319,931	-839
EURO Kartensysteme GmbH	Frankfurt am Main	19.60		329,788	66
PANELLINIA BANK SOCIETE ANONYME (under special liquidation)	Athens, Greece	8.42	5.28	50,143	-12,637
Protektor Lebensversicherungs-AG[1]	Berlin	5.27		92,900	1,824
Raiffeisendruckerei GmbH[1]	Neuwied	7.88		34,933	959
SCHUFA Holding AG[1]	Wiesbaden	17.94		58,073	20,747

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
ABE Clearing S.A.S a Capital Variable	Paris, France	1.85		15,604	4,791
AERS Consortio AG[1]	Stuttgart	16.50		125	-19
AKA Ausfuhrkredit-Gesellschaft mit beschränkter Haftung	Frankfurt am Main	0.31		212,967	16,035
Akademie Badischer Volksbanken und Raiffeisenbanken GmbH[1]	Karlsruhe	0.03		0	0
Almack Mezzanine I LP[1]	London, UK	9.82		6	64,126
Assicoop-Assicurazioni Cooperative S.r.l.[1]	Catania, Italy	0.41		n/a	n/a
assistance partner GmbH & Co. KG[1]	Munich	5.01	0.00	1,100	94
Bank Polskiej Spółdzielczosci Spółka Akcyjna	Warsaw, Poland	1.32		146,269	862
BayBG Bayerische Beteiligungsgesellschaft mbH	Munich	9.38		214,026	13,695
Bayerische Raiffeisen-Beteiligungs-Aktiengesellschaft[2]	Beilngries	1.85		829,633	29,718
BayWa Aktiengesellschaft[1]	Munich	0.10		647,563	36,307
Berliner Volksbank eG[1]	Berlin	0.00	0.10	847,845	17,335
Bernhauser Bank eG[1]	Filderstadt	0.01		n/a	n/a
Beteiligungs-Aktiengesellschaft der bayrischen Volksbanken[1]	Pöcking	1.49		231,090	6,489
BGG Bayerische Garantiegesellschaft mit beschränkter Haftung für mittelständische Beteiligungen	Munich	13.15		46,377	2,325
Blackrock Renewable Income Europe[1]	London, UK	7.69		n/a	n/a
Blackstone Real Estate Partners Europe III L.P.[1]	New York, USA	2.06	0.00	70	644,548
Blackstone Real Estate Partners International I.E. L.P.[1]	New York, USA	9.77		17	3,051
Börse Düsseldorf AG[2]	Düsseldorf	9.99		52,747	473
BTG Beteiligungsgesellschaft Hamburg mbH	Hamburg	10.00		3,574	236
Bürgschaftsbank Bremen GmbH	Bremen	4.86		6,290	370
Bürgschaftsbank Hessen GmbH	Wiesbaden	15.87		18,167	930
Bürgschaftsbank Nordrhein-Westfalen GmbH Kreditgarantiegemeinschaft	Neuss	15.75		33,043	1,419
Bürgschaftsbank Rheinland-Pfalz GmbH	Mainz	14.31		16,380	65
Bürgschaftsbank Sachsen GmbH	Dresden	14.66	16.59	38,150	2,300
Bürgschaftsbank Schleswig-Holstein GmbH	Kiel	11.79		38,646	217
Bürgschaftsbank zu Berlin-Brandenburg GmbH[1]	Berlin	3.11		10,798	554
BürgschaftsGemeinschaft Hamburg GmbH	Hamburg	6.36		23,964	965
Cash Logistik Security AG[1]	Düsseldorf	4.10		4,357	801
Celt S.A.[1]	Kraków, Poland	4.44	0.00	990	-300
Centrast S.A.[1]	Warsaw, Poland	0.64		3,431	-972
ChipVision Design Systems AG i. L.[1]	Oldenburg	16.30		n/a	n/a
CLS Group Holdings AG	Lucerne, Switzerland	0.69		523,087	73
Coop Sistem S.p.A.[1]	Rome, Italy	1.97		n/a	n/a
Corporativo Opción Sante Fe II S.A. DE C.V.[1]	Mexico City, Mexico	0.00		16,123	1,264
Cruz Martins & Wahl Lda.[1]	Lousado, Portugal	10.00		7,431	1,249
Cube Optics AG[1]	Mainz	14.16		n/a	n/a
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
DEGEACTA Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	5.20	24.50	n/a	n/a

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
DEGENAVIS Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Eschborn	6.00	24.50	n/a	n/a
DEGESAVE Achte GmbH & Co. Immobilien KG[1]	Hamburg	5.20	24.00	n/a	n/a
DePfa Beteiligungsholding III Gesellschaft mit beschränkter Haftung[1]	Düsseldorf	0.40		342	25,753
Deutsche Bauernsiedlung – Deutsche Gesellschaft für Landentwicklung (DGL) mbH[1]	Frankfurt am Main	16.26		0	0
Deutsche Börse Commodities GmbH	Frankfurt am Main	16.20	14.48	3,626	1,073
Deutsche Energie-Agentur GmbH (DEnA)	Berlin	8.00		4,527	-1,255
Deutscher Genossenschafts-Verlag eG[2]	Wiesbaden	1.48	1.28	70,702	3,527
DG ANLAGE Holland-Fonds 'Nieuwegein, 's-Hertogenbosch' GmbH & Co. KG (DGI 48)	Frankfurt am Main	0.57		0	-491
DG IMMOBILIEN MANAGEMENT Gesellschaft mbH	Frankfurt am Main	5.01		3,704	-228
DG Immobilien-Anlagegesellschaft 'Berlin, Pariser Platz 3' Dr. Neumann & Prüske KG (DGI 43) i. L.	Frankfurt am Main	6.24		11,265	75,337
DG Immobilien-Anlagegesellschaft Nr. 31 'Berlin-Mitte, Holzmarktstr. 15–18' Schütze & Dr. Neumann KG i. L.	Frankfurt am Main	0.06		2,980	1
DG Immobilien-Anlagegesellschaft Nr. 32 'Chemnitz, Essen' Schütze & Dr. Neumann KG i. L.	Frankfurt am Main	0.18		0	1,848
DG Immobilien-Anlagegesellschaft Nr. 34 'Berlin, Darmstadt, Frankfurt' Schütze & Dr. Neumann KG i. L.	Frankfurt am Main	0.06		0	-3,309
DG Immobilien-Anlagegesellschaft Nr. 35 'Berlin, Frankfurt' Prüske & Dr. Neumann KG i. L.	Frankfurt am Main	0.07		2,859	895
DG Immobilien-Anlagegesellschaft Nr. 36 'Seniorenresidenz Oberursel' Kreft & Dr. Neumann KG i. L.	Frankfurt am Main	0.26		0	-93
DG Immobilien-Anlagegesellschaft Nr. 37 'Berlin-Wegedornstrasse' GbR mit quotaler Haftung i. L.	Frankfurt am Main	0.66		0	4,350
DG IMMOBILIEN-Objektgesellschaft 'Stuttgart, Industriestrasse' Kreft & Dr. Neumann KG (DGI 49) i. L.	Frankfurt am Main	0.98		0	2,354
DIFA BELGIQUE 1 S.A.[1]	Brussels, Belgium	0.18		n/a	n/a
DIFA BELGIQUE 2 S.A.[1]	Brussels, Belgium	1.00		n/a	n/a
DIFA BELGIQUE 3 S.A.[1]	Brussels, Belgium	0.01		n/a	n/a
Domus Beteiligungsgesellschaft der Privaten Bausparkassen mbH Berlin[1]	Berlin	14.13		17	-1
Dritte Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Hamburg	5.00	24.00	n/a	n/a
EIG Energy Fund XVI (Scotland) L.P.[1]	Edinburgh, UK	14.02	0.00	195,563	-2,750
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
EXTREMUS Versicherungs-Aktiengesellschaft[1]	Cologne	5.00		65,690	500
Familiengenossenschaft Münsterland eG	Münster (Westphalia)	1.09		61	-16
Fiducia & GAD IT AG[2]	Frankfurt am Main	0.35		409,743	-338
FIDUCIA Mailing Services eG[2]	Karlsruhe	0.18		83	0
Flugplatz Schwäbisch Hall GmbH[1]	Schwäbisch Hall	2.00		49	0
Fundus-Baubetreuung Rathaus-Center Pankow Immobilien-Anlagen 35 KG[1]	Disternich	3.88	0.00	n/a	n/a
Fünfte Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Hamburg	6.00	24.50	n/a	n/a
GAD Beteiligungs GmbH & Co. KG[2]	Münster	2.32		117,992	3,010
GBK Holding Gmbh & Co. KG[1]	Kassel	0.03		470,693	10,226
GDV Dienstleistungs-GmbH & Co. KG[1]	Hamburg	5.73	5.70	19,893	-68
German Equity Partners IV GmbH & Co. KG[1]	Frankfurt am Main	4.36		60,934	-2,863
GLADBACHER BANK Aktiengesellschaft von 1922	Mönchengladbach	17.53		37,928	1,398
GMS Mitarbeiter Beteiligungsgesellschaft UG & Co.KG[1]	Münster	4.00	3.95	1,007	-6
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	n/a	n/a
Grundstücksgesellschaft Räpplenstrasse – Gesellschaft des bürgerlichen Rechts	Stuttgart	0.00	50.00	19	-1
HANDWERKSBAU NIEDERRHEIN AKTIENGESELLSCHAFT	Düsseldorf	10.15		21,792	1,492
Hannover-Contor Versicherungsmakler GmbH[1]	Hannover	9.00		153	167
immigon portfolioabbau ag	Vienna, Austria	3.79		466,379	316,440
Interessengemeinschaft Frankfurter Kreditinstitute GmbH	Frankfurt am Main	7.01		23,960	8,278
IT Förder- und Beteiligungs eG	Münster	2.90		6,876	1,313
IVS Immobilien GmbH[1]	Schiffweiler	6.00		26	0
K in Kortrijk S.A.[1]	Brussels, Belgium	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
Kapsch IT Service for finance and industries GmbH[1]	Vienna, Austria	2.00		n/a	n/a
Karen Notebook S.A.[1]	Warsaw, Poland	2.17		624	34
KLAAS MESSTECHNIK GmbH[1]	Seelze-Harenberg	15.00		28	0
KLV BAKO Vermittlungs-GmbH	Karlsruhe	10.00		206	9
Konsortium der Absatzfinanzierungsinstitute plettac-assco GbR	Wuppertal	0.00	4.08	0	0
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		679	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	12.00		4,359	0
Kreditgarantiegemeinschaft für den Handel in Bayern GmbH	Munich	7.19		6,317	0
Kunststiftung Baden-Württemberg GmbH[1]	Stuttgart	0.50		2,916	4
Immo Feest en Cultuurpaleis Oostende SA[1]	Brussels, Belgium	0.00		n/a	n/a
Macquarie European Infrastructure Fund 4 L.P.[1]	St. Peter Port, Guernsey	5.70	0.00	1,392,438	7,874
MBG H Mittelständische Beteiligungsgesellschaft Hessen GmbH	Frankfurt am Main	16.26		10,045	131
MBG Mittelständische Beteiligungsgesellschaft Baden-Württemberg Gesellschaft mit beschränkter Haftung	Stuttgart	9.94		60,881	4,452
MBG Mittelständische Beteiligungsgesellschaft Rheinland-Pfalz mbH	Mainz	9.80	11.11	12,376	1,708
MBG Mittelständische Beteiligungsgesellschaft Schleswig-Holstein mbH	Kiel	14.59	15.22	33,438	2,316
MergeOptics GmbH i. L.[1]	Berlin	19.72		n/a	n/a
Mittelständische Beteiligungsgesellschaft Berlin-Brandenburg mbH	Potsdam	8.89		16,323	1,329
Mittelständische Beteiligungsgesellschaft Mecklenburg-Vorpommern mbH	Schwerin	16.00		13,485	880
Mittelständische Beteiligungsgesellschaft Niedersachsen (MBG) mbH	Hannover	19.92		12,236	759
Mittelständische Beteiligungsgesellschaft Sachsen mbH	Dresden	9.38		42,265	2,949
Mittelständische Beteiligungsgesellschaft Sachsen-Anhalt (MBG) mbH	Magdeburg	19.84		22,716	816
Mittelständische Beteiligungsgesellschaft Thüringen mbH	Erfurt	10.28		22,517	997
MORIO GmbH & Co. Immobilien KG[1]	Wegberg	6.00	24.00	n/a	n/a
Münchener Hypothekenbank eG[2]	Munich	1.79		1,282,363	22,239
Munster S.A.[1]	Luxembourg, Luxembourg	0.11		n/a	n/a
NELO Vierte GmbH & Co. Immobilien KG[1]	Waldems	6.00	48.00	2	0
Niedersächsische Bürgschaftsbank (NBB) GmbH	Hannover	17.68		23,190	1,182
Norddeutsche Genossenschaftliche Beteiligungs-Aktiengesellschaft[1]	Hannover	0.87		1,318,813	62,336
Oberbergische Aufbau-Gesellschaft mit beschränkter Haftung	Gummersbach	7.32		1,588	-81
Odewald & Compagnie GmbH & Co. Dritte Beteiligungsgesellschaft für Vermögensanlagen KG[1]	Berlin	4.01		n/a	n/a
Odewald & Compagnie GmbH & Co. KG[1]	Berlin	1.50		n/a	n/a
Opción Jamantab S.A. DE C.V.[1]	Mexico City, Mexico	0.00		2,819	708
Opción Santa Fe III S.A. DE C.V.[1]	Mexico City, Mexico	0.00		12,258	264
ÖPP Deutschland Beteiligungsgesellschaft mit beschränkter Haftung	Berlin	2.97		7,838	-75
Partners Group Global Mezzanine 2007 S.C.A., SICAR[1]	Luxembourg, Luxembourg	2.26		188,409	50,020
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		603	-870
PSD Bank RheinNeckarSaar eG[1]	Stuttgart	0.01		n/a	n/a
Raiffeisen Waren-Zentrale Rhein-Main eG	Cologne	2.47		120,597	2,145
Raiffeisen-Kassel A-Beteiligungs GmbH & Co. KG	Kassel	8.22		40,415	358
Raiffeisen-Kassel B-Beteiligungs GmbH & Co. KG	Kassel	8.22		40,415	358
RREEF Pan-European Infrastructure Feeder GmbH & Co. KG[1]	Eschborn	17.70		404,145	-195
RW Holding AG[1]	Düsseldorf	1.23		884,620	28,140
S.W.I.F.T. Society for Worldwide International Financial Telecommunication[2]	La Hulpe, Belgium	0.31		407,374	19,498
Saarländische Wagnisfinanzierungsgesellschaft mbH	Saarbrücken	2.59		6,402	92
SALEG Sachsen-Anhaltinische Landesentwicklungs GmbH[1]	Magdeburg	1.15		13,960	492
Sana Kliniken AG[1]	Munich	0.69		697,581	71,340
Schroder European Property Investment No. 1 S.A.[1]	Senningerberg, Luxembourg	10.00		1,552	-186

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Schulze-Delitzsch-Haus, eingetragene Genossenschaft[2]	Bonn	2.34		1,050	76
Sechste Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Hamburg	6.00	24.50	n/a	n/a
Sechzehnte Gamma Trans Leasing Verwaltungs-GmbH & Co. Finanzierungs-Management KG i. L.[1]	Nidderau	16.51		10,320	5,335
SGB-Bank Spółka Akcyjna	Poznan, Poland	0.47		159,782	11,094
Sireo Immobilienfonds No. 1 GmbH & Co. KG[1]	Frankfurt am Main	0.05		137,177	4,824
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	143,646	1,015
Target Partners Capital GmbH & Co. KG[1]	Munich	10.00	10.01	535	0
Technisches Kontor für Versicherungen GmbH[1]	Düsseldorf	10.00	0.00	53	27
Technologiezentrum Schwäbisch Hall GmbH[1]	Schwäbisch Hall	4.17	5.56	508	45
The Co-operators Group Ltd.[1]	Guelph, Canada	3.60		690,102	21,224
True Sale International GmbH	Frankfurt am Main	7.69		4,763	71
U.S. Central Federal Credit Union i. L.	Austin, USA	0.00		25,128,330	-1,933
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
Vereinigte Volksbank eG[1]	Sindelfingen	0.01		n/a	n/a
Vierte Grundstücksverwaltungsgesellschaft mbH & Co. Immobilien-Vermietungs KG[1]	Hamburg	6.00	24.50	n/a	n/a
Visa Inc.	San Francisco, USA	0.00		28,254,119	5,991,290
Volksbank Backnang eG[1]	Backnang	0.01		n/a	n/a
Volksbank Einlagensicherung eG[1]	Vienna, Austria	0.69		n/a	n/a
Volksbank Filder eG[1]	Filderstadt	0.01		n/a	n/a
Volksbank Haftungsgenossenschaft eG[1]	Vienna, Austria	0.40		n/a	n/a
Volksbank Heilbronn eG[1]	Heilbronn	0.01		n/a	n/a
Volksbank Kirchheim-Nürtingen eG[1]	Nürtingen	0.01		n/a	n/a
Volksbank Plochingen eG[1]	Plochingen	0.01		n/a	n/a
Volksbank Region Leonberg eG[1]	Leonberg	0.01		n/a	n/a
Volksbank Strohgäu eG[1]	Gerlingen	0.01		n/a	n/a
Volksbank Wien-Baden AG	Vienna, Austria	0.08		288,112	4,417
Vorgebirgs-Residenz Bonn-Endenich GmbH & Co. Kommanditgesellschaft	Unterschleissheim	5.00		102	0
VR VertriebsService GmbH	Gladbeck	5.00		931	21
VR-Bank Asperg-Markgröningen eG[1]	Möglingen	0.01		n/a	n/a
VR-Bank Schwäbisch Hall eG[1]	Schwäbisch Hall	0.01		111,749	3,106
VR-BankenService GmbH	Schloss Holte – Stukenbrock	5.00		1,055	80
WESTFLEISCH Finanz AG[1]	Münster	0.51		65,047	2,131
WRW Wohnungswirtschaftliche Treuhand Rheinland-Westfalen Gesellschaft mit beschränkter Haftung i. L.	Düsseldorf	2.73		2,580	-3,744
ZG Raiffeisen eG	Karlsruhe	1.59	0.03	88,548	2,980
ZT Management Holding GmbH[1]	Weilheim	19.52		-40,566	-29,627

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.
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 annual financial statements of DZ BANK give a true and fair view of the assets, liabilities, financial position and profit or loss of DZ BANK, and the management report of DZ BANK includes a fair review of the development and performance of the business and the position of DZ BANK, together with a description of the principal opportunities and risks associated with the expected development of DZ BANK.

Frankfurt am Main, March 7, 2017

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

The Board of Managing Directors

Kirsch Wolberg Berghaus Dr. Brauckmann

Hille Köhler Moll Dr. Riese

Speth Ullrich Westhoff Zeidler

Audit opinion (translation)

We have audited the annual financial statements, comprising the balance sheet, the income statement, and the notes to the financial statements, together with the bookkeeping system and the management report of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, for the fiscal year from January 1, 2016 to December 31, 2016. The maintenance of the books and records and the preparation of the annual financial statements and management report in accordance with German commercial law and the supplementary provisions of the articles of incorporation are the responsibility of the Company's management. Our responsibility is to express an opinion on the annual financial statements, together with the bookkeeping system, and the management report based on our audit.

We conducted our audit of the annual financial statements in accordance with Sec. 317 HGB ("Handelsgesetzbuch": "German Commercial Code") and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW). Those standards require that we plan and perform the audit such that misstatements materially affecting the presentation of the net assets, financial position and results of operations in the annual financial statements in accordance with German principles of proper accounting and in the management report are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the Company and expectations as to possible misstatements are taken into account in the determination of audit procedures. The effectiveness of the accounting-related internal control system and the evidence supporting the disclosures in the books and records, the annual financial statements and management report are examined primarily on a test basis within the framework of the audit. The audit includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the annual financial statements and management report. We believe that our audit provides a reasonable basis for our opinion.

Our audit has not led to any reservations.

In our opinion, based on the findings of our audit, the annual financial statements comply with the legal requirements and supplementary provisions of the articles of incorporation and give a true and fair view of the net assets, financial position and results of operations of the Company in accordance with German principles of proper accounting. The management report is consistent with the annual financial statements, complies with the legal requirements, and as a whole provides a suitable view of the Company's position and suitably presents the opportunities and risks of future development.

Eschborn/Frankfurt am Main, March 10, 2017

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Dr. Freiling	Dombek
Wirtschaftsprüfer	Wirtschaftsprüferin
(German Public Auditor)	(German Public Auditor)

DZ BANK advisory councils

Members of the Financial Services Advisory Council for the DZ BANK Group

Chairman (until December 2016):

Andreas Hof
Chief Executive Officer
VR Bank
Main-Kinzig-Büdingen eG
Büdingen

Deputy Chairman (until December 2016):

Eberhard Heim
Chief Executive Officer
Volksbank Tübingen eG
Tübingen
(until December 2016)

Representatives of the cooperative banks:

Wolfgang Altmüller
Chief Executive Officer
VR meine Raiffeisenbank eG
Altötting
(until December 2016)

Ulf Brothuhn
Chief Executive Officer
Bremische Volksbank eG
Bremen

Richard Erhardsberger
Chief Executive Officer
VR-Bank Vilsbiburg eG
Vilsbiburg
(until December 2016)

Josef Frauenlob
Chief Executive Officer
Volksbank Raiffeisenbank
Oberbayern Südost eG
Bad Reichenhall
(since February 2016)

Klaus Geurden
Chief Executive Officer
Volksbank Krefeld eG
Krefeld
(since January 2017)

Timm Häberle
Chief Executive Officer
VR-Bank Neckar-Enz eG
Bönnigheim
(since January 2017)

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Spokesman of the Board of
Managing Directors
Volksbank Kinzigtal eG
Wolfach

Heinz Hüning
Chief Executive Officer
Volksbank Heiden eG
Heiden
(since January 2017)

Thomas Janssen
Member of the Board of
Managing Directors
Volksbank Braunlage eG
Braunlage
(until December 2016)

Franz-Josef Jaumann
Chief Executive Officer
Volksbank Trossingen eG
Trossingen
(until December 2016)

Thomas Jorberg
Spokesman of the Board of
Managing Directors
GLS Gemeinschaftsbank eG
Bochum
(since January 2017)

Klaus Krömer
Member of the Board of
Managing Directors
Emsländische Volksbank eG
Meppen

Andreas Lorenz
Chief Executive Officer
Volksbank Karlsruhe eG
Karlsruhe

Rudolf Müller
Spokesman of the Board of
Managing Directors
Volksbank Kur- und Rheinpfalz eG
Speyer
(until December 2016)

Christoph Ochs
Chief Executive Officer
VR Bank Südpfalz eG
Landau
(since January 2017)

Richard Riedmaier
Chief Executive Officer
Volksbank Raiffeisenbank Bayern
Mitte eG
Ingolstadt
(since January 2017)

Manfred Roth
Chief Executive Officer
VR Bank Weimar eG
Weimar

Reinhard Schlottbom
(personal representative for
the member from the
Sparda-Bank Group)
Chief Executive Officer
PSD Bank Westfalen-Lippe eG
Münster
(until December 2016)

Martin Schmitt
Chief Executive Officer
Kasseler Bank eG
Kassel
(until December 2016)

Thomas Sterthoff
Chief Executive Officer
Volksbank Bielefeld-Gütersloh eG
Gütersloh
(since January 2017)

Klaus Treimer
Spokesman of the Board of
Managing Directors
VR Bank Ostholstein Nord –
Plön eG
Neustadt in Holstein

Rudolf Veitz
Member of the Board of
Managing Directors
Raiffeisenbank Holzheim eG
Holzheim
(until December 2016)

Dr. Gerhard Walther
Chief Executive Officer
VR-Bank Mittelfranken West eG
Ansbach
(since January 2017)

Professor Jürgen Weber
Chief Executive Officer
Sparda-Bank Hessen eG
Frankfurt am Main

Representatives of the BVR and its special committees:

Dr. Wolfgang Baecker
Chief Executive Officer
VR-Bank Westmünsterland eG
Coesfeld

Jürgen Brinkmann
Chief Executive Officer
Volksbank eG
Braunschweig Wolfsburg
Wolfsburg

Uwe Fröhlich
President
Bundesverband der
Deutschen Volksbanken und
Raiffeisenbanken (BVR)
Berlin

Peter Geuss
Chief Executive Officer
VR Bank
Starnberg-Herrsching-Landsberg eG
Starnberg
(until December 2016)

Wilhelm Höser
Spokesman of the Board of
Managing Directors
Westerwald Bank eG
Volks- und Raiffeisenbank
Hachenburg
(since February 2017)

Olaf Kilimann
Chief Executive Officer
Volksbank Marl-
Recklinghausen eG
Marl
(since February 2017)

Dr. Veit Luxem
(member coopted
as Chairman of the
BVR Association Council)
Chief Executive Officer
Volksbank Erkelenz eG
Erkelenz

Rosemarie Miller-Weber
Chief Executive Officer
Leutkircher Bank –
Raiffeisen- und Volksbank – eG
Leutkirch im Allgäu
(until December 2016)

Horst Weyand
Chief Executive Officer
Volksbank Rhein-Nahe-
Hunsrück eG
Bad Kreuznach
(since February 2017)

Members of the Banking Advisory Council of DZ BANK AG for Baden-Württemberg

Chairman (since March 2016):
Hermann Sonnenschein
Member of the Board of
Managing Directors
Volksbank Göppingen eG
Göppingen

Deputy Chairman (since March 2016):
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Spokesman of the Board of
Managing Directors
Volksbank Freiburg eG
Freiburg im Breisgau

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Member of the Board of
Managing Directors
BBBank eG
Karlsruhe
(until September 2016)

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Managing Directors
Volksbank Backnang eG
Backnang

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Managing Directors
VR Bank eG
Steinlach-Wiesaz-Härten
Mössingen

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Member of the Board of
Managing Directors
Raiffeisenbank Aidlingen eG
Aidlingen
(since January 2016)

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Managing Directors
Volksbank Dreiländereck eG
Lörrach

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Managing Directors
Volksbank Kraichgau
Wiesloch-Sinsheim eG
Wiesloch

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Spokesman of the Board of
Managing Directors
Volksbank Kurpfalz eG
Heidelberg
(since January 2016)

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Chief Executive Officer
Heidenheimer Volksbank eG
Heidenheim an der Brenz

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Managing Directors
Volksbank Strohgäu eG
Korntal-Münchingen
(since September 2016)

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Volksbank Vorbach-Tauber eG
Weikersheim

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Raiffeisenbank Aichhalden-
Hardt-Sulgen eG
Hardt

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Managing Directors
Raiffeisenbank im Kreis Calw eG
Neubulach
(since January 2016)

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Chief Executive Officer
Volksbank Region Leonberg eG
Leonberg
(since January 2016)

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Chief Executive Officer
Sparda-Bank
Baden-Württemberg eG
Stuttgart
(since January 2016)

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Volksbank Bruhrain-
Kraich-Hardt eG
Oberhausen-Rheinhausen

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Managing Directors
Raiffeisenbank
Ehingen-Hochsträß eG
Ehingen (Donau)

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Managing Directors
VR-Bank Ellwangen eG
Ellwangen (Jagst)

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Chief Executive Officer
Volksbank Dornstetten eG
Dornstetten

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Managing Directors
Leutkircher Bank –
Raiffeisen- und Volksbank – eG
Leutkirch im Allgäu

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Member of the Board of
Managing Directors
Volksbank Albstadt eG
Albstadt

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Managing Directors
Raiffeisenbank Südhardt eG
Durmersheim
(since January 2016)

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Chief Executive Officer
Volksbank Müllheim eG
Müllheim
(since January 2016)

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Volksbank
Kirchheim-Nürtingen eG
Nürtingen

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Managing Directors
Volksbank Allgäu-West eG
Isny im Allgäu

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Member of the Board of
Managing Directors
Volksbank Heilbronn eG
Heilbronn

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Volksbank Baden-Baden
Rastatt eG
Baden-Baden

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Chief Executive Officer
Volksbank Zuffenhausen eG
Stuttgart

Ekkehard Saueressig
Chief Executive Officer
Volksbank Neckartal eG
Eberbach

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Chief Executive Officer
Volksbank Bruchsal-Bretten eG
Bretten

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Raiffeisenbank Riss-Umlach eG
Warthausen
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Managing Directors
VR-Bank Weinstadt eG
Weinstadt
(until September 2016)

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Managing Directors
Echterdinger Bank eG
Leinfelden-Echterdingen
(since January 2016)

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Managing Directors
Raiffeisenbank Vordere Alb eG
Hülben

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Chief Executive Officer
PSD Bank Karlsruhe-Neustadt eG
Karlsruhe
(since January 2016)

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Chief Executive Officer
Raiffeisenbank Oberstenfeld eG
Oberstenfeld
(until September 2016)

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Member of the Board of
Managing Directors
Volksbank eG
Überlingen
(since January 2016)

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Chief Executive Officer
Volksbank Wilferdingen-Keltern eG
Remchingen

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Member of the Board of
Managing Directors
Volksbank eG
Constance

Members of the Banking Advisory Council of DZ BANK AG for Bavaria

Chairman:

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Spokesman of the Board of Managing Directors
Volksbank Regensburg eG
Regensburg

Deputy Chairman:

Claus Jäger
Chief Executive Officer
Raiffeisenbank Aschaffenburg eG
Aschaffenburg

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Spokesman of the Board of Managing Directors
Raiffeisenbank
Trostberg-Traunreut eG
Traunreut
(since January 2016)

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Chief Executive Officer
VR-Bank Werdenfels eG
Garmisch-Partenkirchen

Wolfhard Binder
Chief Executive Officer
Raiffeisen-Volksbank Ebersberg eG
Grafing b. München

Dieter Bordihn
Member of the Board of Managing Directors
Kulmbacher Bank eG
Raiffeisen-Volksbank
Kulmbach

Alexander Brehm
Member of the Board of Managing Directors
Volksbank Forchheim eG
Forchheim
(since January 2016)

Johann Büchler
Chief Executive Officer
PSD Bank Nürnberg eG
Nuremberg
(since January 2016)

Günter Dreher
Chief Executive Officer
Raiffeisenbank Kirchweihtal eG
Pforzen
(since January 2016)

Joachim Erhard
Member of the Board of Managing Directors
Volksbank Raiffeisenbank
Würzburg eG
Würzburg

Wolfgang Gebhard
Member of the Board of Managing Directors
Volksbank Raiffeisenbank
Bayern Mitte eG
Ingolstadt

Rainer Geis
Member of the Board of Managing Directors
Volksbank Raiffeisenbank
Bad Kissingen-Bad Brückenau eG
Bad Kissingen

Albert Griebl
Member of the Board of Managing Directors
VR-Bank Rottal-Inn eG
Pfarrkirchen

Hansjörg Hegele
Chief Executive Officer
Raiffeisenbank Tölzer Land eG
Bad Tölz

Karl-Heinz Hempel
Member of the Board of Managing Directors
Volksbank Raiffeisenbank
Dachau eG
Dachau

Josef Hofbauer
Deputy Chief Executive Officer
Raiffeisenbank
Neumarkt i.d.OPf. eG
Neumarkt i.d.OPf.

Rainer Hönl
Member of the Board of Managing Directors
VR-Bank Donau-Mindel eG
Dillingen a.d. Donau
(until June 2016)

Edmund Kainer
Chief Executive Officer
Raiffeisenbank Seebachgrund eG
Heßdorf

Gottfried Kneissl
Chief Executive Officer
Raiffeisenbank Pfeffenhausen-Rottenburg-Wildenberg eG
Pfeffenhausen

Michael Kruck
Spokesman of the Board of Managing Directors
Raiffeisen-Volksbank
Donauwörth eG
Donauwörth

Anton Lautenbacher
Chief Executive Officer
VR Bank München Land eG
Oberhaching
(since January 2016)

Johannes Lechner
Member of the Board of Managing Directors
Sparda-Bank Ostbayern eG
Regensburg
(since January 2016)

Albert Lorenz
Chief Executive Officer
Raiffeisenbank Bad Abbach-Saal eG
Bad Abbach

Bernd Müller
Member of the Board of
Managing Directors
Volksbank Lindenberg eG
Lindenberg i. Allgäu

Dr. Walter Müller
Member of the Board of
Managing Directors
Volksbank Raiffeisenbank
Rosenheim-Chiemsee eG
Rosenheim

Heinrich Reisenleiter
Chief Executive Officer
Raiffeisenbank Bad Windsheim eG
Bad Windsheim

Hermann Schacherbauer
Member of the Board of
Managing Directors
Raiffeisenbank
Ortenburg-Kirchberg v.W. eG
Ortenburg
(since January 2016)

Dr. Markus Schappert
Member of the Board of
Managing Directors
Volksbank-Raiffeisenbank
Bayreuth eG
Bayreuth
(since January 2016)

René Schinke
Member of the Board of
Managing Directors
VR-Bank Memmingen eG
Memmingen
(since January 2016)

Norbert Schug
Member of the Board of
Managing Directors
VR Bank Hof eG
Hof
(since January 2016)

Dr. Wolfgang Seel
Chief Executive Officer
VR-Bank Neu-Ulm eG
Weißenhorn
(since January 2016)

Christian Senff
Spokesman of the Board of
Managing Directors
Raiffeisen-Volksbank Ebern eG
Ebern

Peter Siegel
Member of the Board of
Managing Directors
VR Bank Kitzingen eG
Kitzingen

Heinrich Stumpf
Member of the Board of
Managing Directors
Augusta-Bank eG
Raiffeisen-Volksbank
Augsburg

Dr. Gerhard Walther
Chief Executive Officer
VR-Bank Mittelfranken West eG
Ansbach
(since January 2016)

Edmund Wanner
Chief Executive Officer
Volksbank Straubing eG
Straubing

Bernhard Werner
Spokesman of the Board of
Managing Directors
Raiffeisenbank im Naabtal eG
Nabburg

Wilfried Wiedemann
Chief Executive Officer
Raiffeisenbank Weißenburg-
Gunzenhausen eG
Weißenburg i. Bay.

Walter Wittmann
Member of the Board of
Managing Directors
VR GenoBank DonauWald eG
Deggendorf
(since January 2016)

Bernhard Wolf
Member of the Board of
Managing Directors
Raiffeisenbank Weiden eG
Weiden i.d.OPf.

Members of the Banking Advisory Council of DZ BANK AG for Central Germany

Chairman (since March 2016):

Christoph Kothe
Spokesman of the Board of Managing Directors
Leipziger Volksbank eG
Leipzig

Deputy Chairman (since March 2016):

Matthias Martiné
Spokesman of the Board of Managing Directors
Volksbank Darmstadt-Südhessen eG
Darmstadt
(since January 2016)

Mathias Beers
Chief Executive Officer
Vereinigte Volksbank eG Dillingen · Dudweiler · Sulzbach/Saar
Sulzbach
(until November 2016)

Jürgen Bien
Member of the Board of Managing Directors
Raiffeisenbank eG Großenlüder
Großenlüder

Achim Brunner
Chief Executive Officer
Raiffeisenbank Oberursel eG
Oberursel (Taunus)

Hans-Joachim Buchen
Member of the Board of Managing Directors
Volksbank Daaden eG
Daaden

Sven Fiedler
Member of the Board of Managing Directors
Volksbank Raiffeisenbank Niederschlesien eG
Görlitz

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Mönchengladbach
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BANKS

Name & registered office	Group company[1]	Shareholding (%)
Bausparkasse Schwäbisch Hall Aktiengesellschaft – Bausparkasse der Volksbanken und Raiffeisenbanken –, Schwäbisch Hall	•	96.9
Ceskomoravska stavebni sporitelna a.s., Prague		45.0
Fundamenta-Lakáskassza Zrt., Budapest	•	51.2
Prvá stavebná sporiteľna a.s., Bratislava		32.5
Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse) Ltd., Tianjin		24.9
Schwäbisch Hall Kreditservice AG, Schwäbisch Hall	•	100.0
Banco Cooperativo Español S.A., Madrid		12.0
Deutsche Genossenschafts-Hypothekenbank AG, Hamburg[2]	•	100.0
Deutsche WertpapierService Bank AG, Frankfurt am Main		50.0
DVB Bank SE, Frankfurt am Main	•	95.5
DZ BANK Ireland plc, Dublin[2]	•	100.0
DZ PRIVATBANK S.A., Strassen, Luxembourg[2]	•	90.7
DZ PRIVATBANK (Schweiz) AG, Zurich	•	100.0
ReiseBank AG, Frankfurt am Main (indirect)	•	100.0
TeamBank AG Nürnberg, Nuremberg	•	92.3
WL BANK AG Westfälische Landschaft Bodenkreditbank, Münster[2]	•	90.9

1 Consolidated in accordance with IAS 27 and total shareholding held by DZ BANK or relevant parent.
2 Letter of comfort from DZ BANK.

Percentages in accordance with IFRS from the perspective of the relevant subgroup parent company.

OTHER SPECIALIZED SERVICE PROVIDERS

Name & registered office	Group company[1]	Shareholding (%)
VR Equitypartner GmbH, Frankfurt am Main[2]	•	100.0
Equens SE, Utrecht		11.9
VR-LEASING Aktiengesellschaft, Eschborn	•	100.0
BFL LEASING GmbH, Eschborn	•	71.7
VR DISKONTBANK GmbH, Eschborn	•	100.0
VR FACTOREM GmbH, Eschborn	•	100.0
VR-IMMOBILIEN-LEASING GmbH, Eschborn	•	100.0

1 Consolidated in accordance with IAS 27 and total shareholding held by DZ BANK or relevant parent.
2 Letter of comfort from DZ BANK.

ASSET MANAGEMENT COMPANIES

Name & registered office	Group company[1]	Shareholding (%)
Union Asset Management Holding AG, Frankfurt am Main	•	95.7
Quoniam Asset Management GmbH, Frankfurt am Main	•	100.0[2]
R+V Pensionsfonds AG, Wiesbaden (together with R+V Versicherung AG)	•	25.1
Union Investment Institutional GmbH, Frankfurt am Main	•	100.0
Union Investment Institutional Property GmbH, Hamburg	•	90.0
Union Investment Luxembourg S.A., Luxembourg	•	100.0
Union Investment Privatfonds GmbH, Frankfurt am Main	•	100.0
Union Investment Real Estate GmbH, Hamburg	•	94.5

1 Consolidated in accordance with IAS 27 and total shareholding held by DZ BANK or relevant parent.
2 Share of voting power.

INSURANCE COMPANIES

Name & registered office	Group company[1]	Shareholding (%)
R+V Versicherung AG, Wiesbaden	•	92.1
Condor Allgemeine Versicherungs-Aktiengesellschaft, Hamburg	•	100.0
Condor Lebensversicherungs-Aktiengesellschaft, Hamburg	•	95.0
KRAVAG-Allgemeine Versicherungs-Aktiengesellschaft, Hamburg	•	76.0
KRAVAG-LOGISTIC Versicherungs-Aktiengesellschaft, Hamburg	•	51.0
R+V Allgemeine Versicherung Aktiengesellschaft, Wiesbaden	•	95.0
R+V Krankenversicherung AG, Wiesbaden	•	100.0
R+V Lebensversicherung AG, Wiesbaden	•	100.0
R+V Pensionsfonds AG, Wiesbaden (together with Union Asset Management Holding AG)	•	74.9

1 Consolidated in accordance with IAS 27 and total shareholding held by DZ BANK or relevant parent.

Percentages in accordance with IFRS from the perspective of the relevant subgroup parent company.

Editorial information

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Wolfgang Köhler
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Dr. Cornelius Riese
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