Notes

A General disclosures

» 01 Basis of preparation

Pursuant to *Regulation (EC) 1606/2002 of the European Parliament and of the Council of July 19, 2002*, the consolidated financial statements of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK) for the 2021 financial year have been prepared in accordance with the provisions of the International Financial Reporting Standards (IFRS), as adopted by the European Union (EU).

The provisions specified in section 315e (1) of the German Commercial Code (HGB) for companies whose securities are admitted to trading on a regulated market in the EU have also been applied in the consolidated financial statements of DZ BANK. In addition, further standards adopted by Deutsches Rechnungslegungs Standards Committee e.V. [German Accounting Standards Committee] have generally been taken into account where such standards have been published in the German Federal Gazette by the Bundesministerium der Justiz und für Verbraucherschutz [Federal Ministry of Justice and Consumer Protection] pursuant to section 342 (2) HGB.

DZ BANK is entered in the commercial register at the Frankfurt am Main local court under the number HRB 45651.

The DZ BANK Group's financial year is the same as the calendar year. In the interest of clarity, some items on the income statement, the statement of comprehensive income, and the balance sheet have been aggregated and are explained by additional disclosures in the notes. Unless stated otherwise, all amounts are shown in millions of euros (€ million). This may result in very small discrepancies in the calculation of totals and percentages.

The consolidated financial statements of DZ BANK have been released for publication by the Board of Managing Directors following approval by the Supervisory Board on March 24, 2022.

» 02 Accounting policies and estimates

Changes in accounting policies

First-time application in 2021 of changes in IFRS
The following amendments to IFRS are applied for the first time in DZ BANK's consolidated financial statements for the 2021 financial year:

– *Interest Rate Benchmark Reform – Phase 2* (Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4, and IFRS 16),
– *Extension of the Temporary Exemption from Applying IFRS 9* (Amendments to IFRS 4 Insurance Contracts),
– *COVID-19-Related Rent Concessions* (Amendment to IFRS 16 Leases).

Interest Rate Benchmark Reform – Phase 2 (Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4, and IFRS 16) follows on from the amendments in 2019 and apply if, because of the reform, a reporting entity replaces an interest-rate benchmark with an alternative, nearly risk-free interest rate. The amendments provide a practical expedient in the event of contract modifications or cash flow modifications that are required as a direct consequence of the IBOR reform and made on an economically equivalent basis. Under these circumstances, the modification required as a result of the IBOR reform has to be accounted for as a modification of a variable interest rate in accordance with IFRS 9.B5.4.5 and not recognized in the modification gain or loss. Instead, application of IFRS 9.B5.4.5 permits subsequent measurement on the basis of the updated effective interest rate and thus recognition of the effect of the economically equivalent modification over the remaining term. For all other modifications made at the same time but not as a direct consequence of the IBOR reform, the effect of derecognizing the modifications has to be analyzed. Derecognition is required in the event of substantial modifications. Where modifications are not substantial, the updated effective interest rate is used to recalculate the carrying amount of the financial instrument and the change is recognized in the modification gain or loss.

In addition, temporary relief is offered that enables the continuation of hedge accounting after transition to the new interest-rate benchmarks if the modifications are made solely as a result of the benchmark interest-rate reform. Relief is also offered where there are separately identifiable risk components. The amendments do not offer relief for hedge ineffectiveness caused by the IBOR reform, which has to be recognized in profit or loss in accordance with IFRS 9. Furthermore, the amendments contain minor changes to IFRS 16 and IFRS 4 and additional disclosure requirements in accordance with IFRS 7.

The DZ BANK Group only accounts for hedges of interest-rate risk (fair value hedges). In this accounting treatment, it applies the rules of IAS 39 to hedges using a portfolio approach. The hedging instruments reference interest rates of the Euribor and Libor group. Euribor will be retained in its current form as an interest-rate benchmark for the foreseeable future. Libor was essentially replaced with effect from January 1, 2022, although major USD Libor tenors (overnight, 1-month, 3-month, 6-month, and 12-month) are not likely to be replaced until June 2023. Further disclosures on the IBOR reform are presented in note 87.

The amendments must be applied retrospectively to financial years beginning on or after January 1, 2021. A hedge has to be reinstated if it was discontinued solely due to changes required by the interest-rate benchmark reform and would not have been discontinued if the phase 2 amendments had been applied at that time. There is no material impact on the consolidated financial statements.

The objective of *Extension of the Temporary Exemption from Applying IFRS 9* (Amendments to IFRS 4 Insurance Contracts) is to address temporary accounting consequences that arise because of the different effective dates of IFRS 9 Financial Instruments and the forthcoming IFRS 17 Insurance Contracts.

According to the EU regulation specifying adoption for financial years beginning on or after January 1, 2021, entities that predominantly undertake insurance activities – including the insurance divisions of financial conglomerates – can opt to be exempt from IFRS 9 until January 1, 2023. The insurance companies in the DZ BANK Group are not exercising this option.

On March 31, 2021, the IASB published an amendment that extends, by one year, the relief for lessees applying IFRS 16 that was introduced in connection with the COVID-19 pandemic. Entities are required to apply the amendments retrospectively from April 1, 2021 to financial years beginning on or after January 1, 2021. The DZ BANK Group is not making use of this relief.

Changes in IFRS endorsed by the EU but not adopted early

The DZ BANK Group has decided against voluntary early adoption of the following new financial reporting standards, the listed amendments to a number of financial reporting standards, and the listed improvements to IFRS:

- IFRS 17 *Insurance Contracts*,
- Amendments to IFRS 17 *Insurance Contracts*,

- Amendments to IFRS 3 *Business Combinations*,
- Amendments to IAS 16 *Property, Plant and Equipment*,
- Amendments to IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*,
- *Annual Improvements to IFRSs 2018–2020 Cycle*.

The IASB published IFRS 17 Insurance Contracts on May 18, 2017. The objective of the new standard is to ensure the consistent, principles-based accounting treatment of insurance contracts and requires insurance liabilities to be measured using the latest amount equating to the fulfillment cash flows. This results in more consistent measurement and presentation of all insurance contracts. IFRS 17 supersedes IFRS 4 Insurance Contracts.

Under IFRS 17, insurance contracts are measured either using the general model or using a simplified method, the premium allocation approach (PAA). The general model specifies that, upon initial recognition, an entity shall measure a group of insurance contracts at the total of (a) the fulfillment cash flows (FCF) and (b) the contractual service margin (CSM). The FCF comprises the probability-weighted estimate of future cash flows, an adjustment to reflect the time value of money and the financial risks associated with the future cash flows, and a risk adjustment for non-financial risk.

On subsequent measurement, the carrying amount of a group of insurance contracts at the end of each reporting period is the sum of the liability for future coverage and the liability for incurred claims. The liability for future coverage comprises the FCF related to future services and the CSM of the group at that date. The liability for incurred claims comprises the FCF related to past services that was allocated to the group at that date.

The measurement of a group of insurance contracts may be simplified using the PAA, provided that certain criteria are met. This simplification can be applied upon initial recognition of the group if an entity reasonably expects that use of the PPA will result in a measurement of the liability for future coverage that is not materially different from its measurement under the general model or if the coverage period of each contract in the group is one year or less.

IFRS 17 must be applied for financial years beginning on or after January 1, 2023. Early adoption of IFRS 17 is permitted if both IFRS 15 Revenue from Contracts with Customers and IFRS 9 Financial Instruments are also applied. The regulation endorsing IFRS 17 was announced on November 23, 2021 and the EU's endorsement process was thus finalized.

A project was set up in the R+V subgroup in order to implement the requirements of IFRS 17. The group companies are currently examining the impact of IFRS 17 on DZ BANK's consolidated financial statements.

The other changes and improvements to IFRS listed above are not expected to have a material impact on DZ BANK's consolidated financial statements.

Changes in IFRS that have not yet been endorsed by the EU

The following amendments to a number of accounting standards have not yet been endorsed by the EU:

- *Classification of Liabilities as Current or Non-current* (Amendments to IAS 1 Presentation of Financial Statements),
- *Disclosure of Accounting Policies* (Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2),
- *Definition of Accounting Estimates* (Amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors),
- *Deferred Tax related to Assets and Liabilities arising from a Single Transaction* (Amendments to IAS 12),
- *Initial Application of IFRS 17 and IFRS 9 – Comparative Information* (Amendment to IFRS 17 Insurance Contracts).

The amendment to IFRS 17 permits first-time adopters of the standard to present comparative information about a financial asset as if the classification and measurement requirements of IFRS 9 had been applied to that financial asset (classification overlay). The amendment can also be applied by preparers that had already applied IFRS 9 before the transition to IFRS 17. These entities can apply the classification overlay to financial assets derecognized in the comparative period, provided that they follow the rules in IFRS 17 concerning the reclassification of financial assets upon transition to IFRS 17. The group companies are currently examining the impact of the amendments to IFRS 17 on DZ BANK's consolidated financial statements.

The impact of the other aforementioned amendments to IFRS on DZ BANK's consolidated financial statements is also currently being examined.

The initial application dates for the issued amendments to IFRS are subject to the proviso that the amendments must first be incorporated into EU law.

Changes in presentation

From the 2021 financial year onward, amounts previously deemed non-material in the income statement and on the balance sheet arising from differences between the transaction price and fair value (day-one profit or loss) that were identified upon initial recognition of financial assets and financial liabilities – where such differences result from unobservable measurement parameters – will be deferred and recognized over the remaining term of the underlying transaction and no longer recognized immediately in profit or loss. The aim of this change is to provide reliable and more relevant information. This retrospective change resulted in the following adjustments to the income statement, balance sheet, and statement of cash flows. Furthermore, the net profit recognized under equity earned for the group in the statement of changes in equity was reduced by €7 million.

Income statement for the period January 1 to December 31, 2020

€ million	2020 before restatement	Amount of restatement	**2020 after restatement**
(...)			
Gains and losses on trading activities	552	-10	**542**
(...)			
Profit before taxes	1,455	-10	**1,445**
Income taxes	-475	3	**-472**
Net profit	**980**	**-7**	**973**

Balance sheet as at January 1, 2020

ASSETS

€ million	Jan. 1, 2020 before restatement	Amount of restatement	Jan. 1, 2020 after restatement
(…)			
Financial assets held for trading	44,771	-49	44,722
(…)			
Income tax assets	1,018	16	1,034
(…)			
Total assets	**559,472**	**-33**	**559,439**

EQUITY AND LIABILITIES

€ million	Jan. 1, 2020 before restatement	Amount of restatement	Jan. 1, 2020 after restatement
(…)			
Financial liabilities held for trading	51,050	3	51,053
(…)			
Equity	27,796	-36	27,760
Shareholders' equity	24,787	-36	24,751
(…)			
Retained earnings	10,055	-36	10,019
(…)			
Total equity and liabilities	**559,472**	**-33**	**559,439**

Balance sheet as at December 31, 2020

ASSETS

€ million	Dec. 31, 2020 before restatement	Amount of restatement	Dec. 31, 2020 after restatement
(…)			
Financial assets held for trading	42,846	-57	42,788
(…)			
Income tax assets	879	19	898
(…)			
Total assets	**594,573**	**-38**	**594,535**

EQUITY AND LIABILITIES

€ million	Dec. 31, 2020 before restatement	Amount of restatement	Dec. 31, 2020 after restatement
(…)			
Financial liabilities held for trading	50,404	5	50,409
(…)			
Equity	29,159	-43	29,116
Shareholders' equity	26,066	-43	26,023
(…)			
Retained earnings	10,553	-36	10,517
(…)			
Unappropriated earnings	579	-7	572
(…)			
Total equity and liabilities	**594,573**	**-38**	**594,535**

Statement of cash flows for the period January 1 to December 31, 2020

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Net profit	980	-7	973
Non-cash items included in net profit and reconciliation to cash flows from operating activities			
Depreciation, amortization, impairment losses, reversals of impairment losses on assets, and other non-cash changes in financial assets and liabilities	879	10	889
(…)			
Other non-cash income and expenses	837	-19	818
(…)			
Subtotal	6,933	-16	6,917
Cash changes in assets and liabilities arising from operating activities			
(…)			
Financial assets and financial liabilities held for trading	1,763	52	1,815
(…)			
Cash flows from operating activities	26,902	36	26,938
(…)			
Net change in cash and cash equivalents from other financing activities (including subordinated capital)	784	-36	748
Cash flows from financing activities	651	-36	615

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Cash and cash equivalents as at January 1	52,545	-	52,545
Cash flows from operating activities	26,902	36	26,938
Cash flows from investing activities	-11,744	-	-11,744
Cash flows from financing activities	651	-36	615
Cash and cash equivalents as at December 31	68,354	-	68,354

In order to provide reliable and more relevant information in connection with the elimination or significant reduction of measurement or recognition inconsistencies (accounting mismatches) by exercising the fair value option, credit rating effects resulting from the measurement of FVO hedged items are no longer recognized in gains and losses on trading activities from the 2021 financial year onward and are instead recognized in other gains and losses on valuation of financial instruments because the credit rating effects from the FVO hedged items are not matched by corresponding effects resulting from the hedging transactions. This retrospective change resulted in the following adjustments to the income statement and statement of cash flows.

Income statement for the period January 1 to December 31, 2020

€ million	2020 before restatement	Amount of restatement	2020 after restatement
(…)			
Gains and losses on trading activities	552	40	592
(…)			
Other gains and losses on valuation of financial instruments	-22	-40	-62
(…)			
Profit before taxes	1,455	-	1,455
Income taxes	-475	-	-475
Net profit	980	-	980

Statement of cash flows for the period January 1 to December 31, 2020

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Net profit	980	-	980
Non-cash items included in net profit and reconciliation to cash flows from operating activities			
(...)			
Subtotal	6,933	-	6,933
Cash changes in assets and liabilities arising from operating activities			
Loans and advances to banks	-5,389	-99	-5,488
Loans and advances to customers	-4,637	-37	-4,674
(...)			
Financial assets and financial liabilities held for trading	1,763	204	1,967
Deposits from banks	36,739	38	36,777
Deposits from customers	2,617	-106	2,511
Debt certificates issued including bonds	-14,732	2	-14,730
(...)			
Cash flows from operating activities	**26,902**	**2**	**26,904**
(...)			
Net change in cash and cash equivalents from other financing activities (including subordinated capital)	784	-2	782
Cash flows from financing activities	**651**	**-2**	**649**

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Cash and cash equivalents as at January 1	52,545	-	52,545
Cash flows from operating activities	26,902	2	26,904
Cash flows from investing activities	-11,744	-	-11,744
Cash flows from financing activities	651	-2	649
Cash and cash equivalents as at December 31	**68,354**	**-**	**68,354**

In accordance with the provisions of IAS 8.41 et seq., the determination of amounts to be reclassified from gains and losses on trading activities to net interest income in the income statement is adjusted from the 2021 financial year onward. This retrospective change resulted in the following adjustments to the income statement and statement of cash flows.

Income statement for the period January 1 to December 31, 2020

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Net interest income	2,797	-111	2,686
Interest income	5,111	-133	4,978
Interest income calculated using the effective interest method	5,087	-292	4,795
Interest income not calculated using the effective interest method	24	159	183
(...)			
Interest expense	-2,396	23	-2,373
(...)			
Gains and losses on trading activities	552	111	663
(...)			
Profit before taxes	1,455	-	1,455
Income taxes	-475	-	-475
Net profit	**980**	**-**	**980**

Statement of cash flows for the period January 1 to December 31, 2020

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Net profit	980	-	**980**
Non-cash items included in net profit and reconciliation to cash flows from operating activities			
Depreciation, amortization, impairment losses, reversals of impairment losses on assets, and other non-cash changes in financial assets and liabilities	879	-66	**813**
(…)			
Other adjustments (net)	-2,686	66	**-2,620**
Subtotal	6,933	-	6,933
Cash changes in assets and liabilities arising from operating activities			
(…)			
Financial assets and financial liabilities held for trading	1,763	66	**1,829**
(…)			
Interest, dividends, and operating lease payments received	5,864	-89	**5,775**
Interest paid	-2,578	23	**-2,555**
(…)			
Cash flows from operating activities	**26,902**	**-**	**26,902**

In accordance with the provisions of IAS 8.41 et seq., amounts previously recognized as cash changes in the statement of cash flows will now be reclassified as non-cash changes. The restated amounts are shown in the following table.

Statement of cash flows for the period January 1 to December 31, 2020

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Net profit	980	-	**980**
Non-cash items included in net profit and reconciliation to cash flows from operating activities			
(…)			
Non-cash changes in provisions	730	-97	**633**
(…)			
Other non-cash income and expenses	837	-34	**803**
Other adjustments (net)	-2,686	581	**-2,105**
(…)			
Subtotal	6,933	450	7,383
Cash changes in assets and liabilities arising from operating activities			
Loans and advances to banks	-5,389	1	**-5,388**
Loans and advances to customers	-4,637	-3	**-4,640**
(…)			
Deposits from banks	36,739	-9	**36,730**
Deposits from customers	2,617	14	**2,631**
Debt certificates issued including bonds	-14,732	29	**-14,703**
(…)			
Interest paid	-2,578	111	**-2,467**
(…)			
Cash flows from operating activities	**26,902**	**593**	**27,495**
Proceeds from the sale of investments	10,483	-534	**9,949**
Proceeds from the sale of investments held by insurance companies	21,454	-157	**21,297**
(…)			
Cash flows from investing activities	**-11,744**	**-691**	**-12,435**
(…)			
Net change in cash and cash equivalents from other financing activities (including subordinated capital)	784	98	**882**
Cash flows from financing activities	**651**	**98**	**749**

€ million	2020 before restatement	Amount of restatement	2020 after restatement
Cash and cash equivalents as at January 1	52,545	-	52,545
Cash flows from operating activities	26,902	593	27,495
Cash flows from investing activities	-11,744	-691	-12,435
Cash flows from financing activities	651	98	749
Cash and cash equivalents as at December 31	**68,354**	-	**68,354**

The aforementioned presentation changes result in related adjustments to the presentation of the associated disclosures in note 33 (Segment information), note 34 (Net interest income), note 36 (Gains and losses on trading activities), note 38 (Other gains and losses on valuation of financial instruments), note 48 (Income taxes), note 55 (Financial assets held for trading), note 59 (Income tax assets and liabilities), note 68 (Financial liabilities held for trading), note 74 (Classes, categories, and fair values of financial instruments), note 81 (Offsetting of financial assets and financial liabilities), note 84 (Items of income, expense, gains, and losses), note 85 (Derivatives), note 88 (Nature and extent of risks arising from financial instruments and insurance contracts) – specifically the disclosures on the maximum exposure to credit risk – and note 89 (Maturity analysis).

In note 92 (Financial guarantee contracts and loan commitments), the amounts within the breakdown of loan commitments by product type have been restated in order to provide reliable and more relevant information.

In accordance with the provisions of IAS 8.41 et seq., there are also presentation changes in the following notes.

In note 29 (Investments in subsidiaries), specifically the table showing the nature and extent of significant restrictions, the amounts from investments held by insurance companies have been restated. In note 57 (Investments held by insurance companies), the amount of the pledges and restrictions on disposal in respect of investment property has been restated. In note 60 (Other assets), specifically other assets held by insurance companies, the amount recognized under property, plant and equipment for land and buildings held by companies offering personal insurance, which are subject to restrictions pursuant to IAS 16.74 (a), is disclosed for the first time.

In note 65 (Deposits from customers), the amounts for money market deposits and for other deposits within the breakdown by type of business have been restated.

In note 77 (Assets and liabilities measured at fair value on the balance sheet), specifically the information on transfers, the transfers of investments from Level 1 to Level 2 and from Level 2 to Level 1 have been restated. And in the table showing the fair values within Level 3 of the fair value hierarchy, the amounts shown for the changes in investments held by insurance companies have been restated.

In note 87 (Reform of interest-rate benchmarks), the nominal amounts of the hedging instruments and weighted average maturity (years) have been restated in the table showing the Libor-related risk attaching to the hedges.

In note 88 (Nature and extent of risks arising from financial instruments and insurance contracts), specifically the disclosures on the maximum exposure to credit risk, the changes arising in the financial year and on a cumulative basis to the fair value of financial assets designated as at fair value through profit or loss, where such changes were due to changes in the credit risk, have been restated.

In note 88 (Nature and extent of risks arising from financial instruments and insurance contracts), specifically the disclosures on credit risk concentrations, the gross carrying amounts and nominal amounts for corporates, emerging markets, and the financial sector and in the geographical breakdown have been restated.

In note 102 (Share-based payment transactions), information about DVB has been added.

Sources of estimation uncertainty

It is sometimes necessary to make assumptions and estimates in accordance with the relevant financial reporting standards in order to determine the carrying amounts of assets, liabilities, income, and expenses recognized in the consolidated financial statements. These assumptions and estimates are based on historical experience, planning, and expectations or forecasts regarding future events.

Assumptions and estimates are used primarily in determining the fair value of financial assets and financial liabilities and in identifying any impairment of financial assets. Estimates also have a material impact on determining the impairment of goodwill or intangible assets acquired as part of business combinations. Furthermore, assumptions and estimates affect the measurement of right-of-use assets, insurance liabilities, provisions for employee benefits, provisions for share-based payment transactions, provisions relating to building society operations, and other provisions as well as the recognition and measurement of income tax assets and income tax liabilities.

Fair values of financial assets and financial liabilities

If there are no prices available for certain financial instruments from active markets, the fair values of such financial assets and financial liabilities have to be determined on the basis of estimates, resulting in some uncertainty. Uncertainties associated with estimates arise primarily if fair values are determined using valuation techniques involving significant valuation parameters that are not observable in the market. This affects both financial instruments measured at fair value and financial instruments measured at amortized cost whose fair values are disclosed in the notes. The measurement parameter assumptions and measurement methods used to determine fair values are described in the financial instruments disclosures in notes 77 and 78.

Impairment of financial assets

When an impairment test (as described in note 5) is carried out for financial assets that constitute debt instruments or for loan commitments and financial guarantee contracts, it is necessary to determine estimated future cash flows from interest payments and the repayment of principal as well as from any recovery of collateral. This requires estimates and assumptions regarding the amount and timing of future cash flows, in turn giving rise to some uncertainty. The factors influencing impairment that are defined on a discretionary basis include economic conditions, the financial performance of the counterparty, and the value of the collateral held. When an impairment test for portfolios is carried out, parameters such as probability of default, which are calculated with the help of statistical models, are used in the estimates and assumptions.

Goodwill and intangible assets

The recognition of goodwill is largely based on estimated future income, synergies, and non-recognizable intangible assets generated by business combinations or acquired as part of business combinations. The recoverability of the carrying amount is verified by means of budget accounts that are largely based on estimates. Identifiable intangible assets acquired as part of business combinations are recognized on the basis of their future economic benefits. These benefits are assessed by management using reasonable, well-founded assumptions. The estimates applied in the case of business combinations are described in note 94.

Right-of-use assets

The measurement of right-of-use assets (as described in note 12) involves the use of assumptions and estimates, especially in relation to estimated future cash flows, term, and discount rate. Estimates also have a material impact on determining the impairment of right-of-use assets.

Insurance liabilities

The measurement of insurance liabilities involves the exercise of discretion, estimates, and assumptions, especially in relation to mortality, rates of return on investment, cancellations, and costs. Actuarial calculation methods, statistical estimates, blanket estimates, and measurements based on past experience are used. The basic approaches used in the measurement of insurance liabilities are described in the insurance business disclosures in note 11.

Provisions for employee benefits, provisions for share-based payment transactions, and other provisions

Uncertainty associated with estimates in connection with provisions for employee benefits arises primarily from the measurement of defined benefit obligations, on which actuarial assumptions have a material effect. Actuarial assumptions are based on a large number of long-term, forward-looking factors, such as salary increases, annuity trends, and average life expectancy.

In the case of provisions for share-based payment transactions, estimation uncertainty arises from the way in which fair value is determined. This fair value is based on assumptions regarding the payout amount, which in turn depends on the performance of the variables specified in the underlying agreements.

In order to measure provisions relating to building society operations, building society simulations (collective simulations) that forecast home savings customers' future behavior are used that are available for evaluation of the options. These options available to home savings customers include, for example, drawing down the home savings loan, waiving the loan after allocation, or continuing with the home savings contract. Uncertainty in connection with the measurement of the provisions may arise depending on the extent to which the assumptions about future customer behavior – taking account of various interest-rate scenarios and management measures – that were forecast using collective simulation actually materialize in the future. The main inputs for the collective simulations are presented in note 26.

Actual cash outflows in the future related to items for which other provisions have been recognized may differ from the forecast utilization of the provisions.

The basis for measurement and the assumptions and estimates underlying the calculation of provisions are described in note 26.

Income tax assets and liabilities

The deferred tax assets and liabilities described in note 59 are calculated on the basis of estimates of future taxable income in taxable entities. In particular, these estimates have an effect on any assessment of the extent to which it will be possible to make use of deferred tax assets in the future. In addition, the calculation of current tax assets and liabilities for the purposes of preparing financial statements involves estimates of details relevant to income tax.

COVID-19 pandemic

The COVID-19 pandemic has not given rise to any additional estimation uncertainty with regard to the calculation of the carrying amounts of assets, liabilities, income, and expenses. The pandemic particularly affects the familiar assumptions and estimates used to calculate the fair value of loans and advances to customers, investments, investments held by insurance companies, financial assets held for trading, and financial liabilities held for trading and to calculate loss allowances and provisions. The impact of COVID-19 on the calculation of loss allowances and on the assumptions and estimates used in this calculation is described in note 88.

Climate-related matters

Climate-related matters impact on the familiar assumptions and estimates. No additional estimation uncertainty has arisen with regard to the calculation of the carrying amounts of assets and liabilities and the calculation of income and expenses. Estimation uncertainty and the related judgments in respect of climate-related matters primarily arise when determining the fair value of financial assets and financial liabilities, identifying any impairment of financial assets, and measuring insurance liabilities. Climate-related matters did not result in any explicit adjustments being made in the determination of the fair value of financial assets and financial liabilities or the identification of any impairment of financial assets in the year under review. To some extent, however, climate-related matters are factored into the pertinent models implicitly. When measuring insurance liabilities, climate-related matters are taken into account by making prudent additions to provisions for claims and maintaining an extensive reinsurance program that comes into effect when a defined claims threshold is exceeded and thus limits financial risk.

» 03 Scope of consolidation

In addition to DZ BANK as the parent, the consolidated financial statements for the year ended December 31, 2021 include 17 subsidiaries (2020: 26) and 6 subgroups (2020: 6) comprising a total of 128 subsidiaries (2020: 151).

The main change to the scope of consolidation in 2021 was the derecognition of the entities that had been established in order to increase own funds in accordance with section 10a of the German Banking Act (KWG). The bonds issued by DZ BANK Perpetual Funding Issuer (Jersey) Limited, St. Helier, Jersey, and the non-cumulative trust preferred securities issued by DZ BANK Capital Funding Trust I, DZ BANK Capital Funding Trust II, and DZ BANK Capital Funding Trust III, all Delaware, USA, were called on January 12, 2021 and repaid in full during the reporting year. On the date on which the issued bonds and issued non-cumulative trust preferred securities were repaid in full, the aforementioned companies and the associated companies DZ BANK Capital Funding LLC I, DZ BANK Capital Funding LLC II, and DZ BANK Capital Funding LLC III, all Wilmington, Delaware, and DZ BANK Perpetual Funding (Jersey) Limited, St. Helier, Jersey, were deconsolidated.

The consolidated financial statements include 5 joint arrangements in the form of joint ventures with at least one other entity outside the group (2020: 6) and 24 associates (2020: 25) over which DZ BANK has significant influence. These entities are accounted for using the equity method. There are currently no joint arrangements classified as joint operations.

The shareholdings of the DZ BANK Group are listed in full in note 107.

» 04 Procedures of consolidation

Financial information in the consolidated financial statements contains data from the parent company, which incorporates data from its consolidated subsidiaries. The parent company and the consolidated subsidiaries are presented as a single economic entity.

An investee is included in the scope of consolidation as a subsidiary from the date on which DZ BANK obtains control over it. DZ BANK controls an investee when DZ BANK directly or indirectly has power over the investee, is therefore exposed to significant variable returns from its involvement with the investee, and has the ability to affect the variable returns from the investee through this power. Unless otherwise contractually agreed, DZ BANK controls an entity if it holds more than half of the voting rights, either directly or indirectly. The assessment of whether control exists also takes account of potential voting rights, provided they are considered substantial.

DZ BANK also considers itself to have control over an entity in cases where it does not hold the majority of the voting rights but does have the ability to unilaterally direct the relevant activities of the entity concerned. It is sometimes necessary to exercise discretion, taking all of the relevant facts and circumstances into consideration, when making such a determination. This is particularly applicable to principal/agent relationships, which require an assessment of whether DZ BANK or other parties with decision-making rights are acting as principal or as an agent. With regard to principal/agent relationships, a considerable amount of discretion has to be exercised in order to assess the appropriateness of contractually agreed remuneration and of the level of the variable returns received.

A review is carried out at least once every six months to decide which subsidiaries are to be consolidated.

The financial statements of the entities consolidated in the DZ BANK Group have been prepared using uniform accounting policies. When preparing the consolidated financial statements, uniform accounting policies are used for like transactions.

The consolidated subsidiaries prepared their financial statements on the basis of a financial year ended December 31, 2021. With 18 (2020: 20) exceptions, the separate financial statements of the entities accounted for using the equity method are prepared to the same balance sheet date as that of the parent company. There is no resulting material impact in respect of the subsidiaries and associates concerned, and therefore no interim financial statements have been prepared.

Intragroup assets and liabilities, as well as intragroup income and expenses, are eliminated in full. Intragroup profits or losses resulting from transactions within the group are also eliminated in full.

When a subsidiary is consolidated, the carrying amount of the investment in the subsidiary is offset against the proportionate equity of the subsidiary. Any share of a subsidiary's equity not attributable to the parent company is reported under equity as non-controlling interests.

Goodwill resulting from offsetting the acquisition cost of a subsidiary against the equity remeasured at fair value on the acquisition date is recognized as goodwill when the acquisition method is applied. It is recognized under other assets. Goodwill is tested for impairment at least once a year. Any negative goodwill is recognized in profit or loss on the acquisition date.

If DZ BANK loses control over a subsidiary, the assets and liabilities of this former subsidiary, together with the carrying amount of any non-controlling interests in the former subsidiary, are derecognized when control is lost. The fair value of any consideration received is recognized at the same time. The gain or loss arising in connection with the loss of control is recognized in profit or loss.

Entities under joint control with at least one other entity outside the group are accounted for as joint ventures in the consolidated financial statements. DZ BANK has joint control over an arrangement when there is a contractual agreement in place that requires decisions about the arrangement's relevant activities to be reached with the unanimous consent of all the parties sharing control.

DZ BANK has a significant influence over an investee if it can participate in the financial and operating policy decisions of the investee without having control or joint control over it. Unless it can be proved otherwise, this is assumed to be the case where between 20 and 50 percent of the voting shares are held.

Investments in joint ventures and associates are accounted for using the equity method and reported on the balance sheet under investments or investments held by insurance companies.

Under the equity method, the DZ BANK Group's investments in associates and joint ventures are initially recognized at cost. Subsequently, the carrying amount is increased or decreased to recognize the group's share of the profit/loss or other changes to the net assets of the associate or joint venture after the acquisition.

If significant influence over an associate or joint venture is lost, the gain or loss arising from the disposal of the long-term equity investment accounted for under the equity method is recognized in profit or loss.

» 05 Financial instruments

Categories of financial instruments

Financial assets measured at fair value through profit or loss (fair value PL)
Financial assets that are not measured at amortized cost or at fair value through other comprehensive income are classified as 'financial assets measured at fair value through profit or loss'. This category is broken down into the following subcategories:

Financial assets mandatorily measured at fair value through profit or loss
The subcategory 'financial assets mandatorily measured at fair value through profit or loss' covers financial assets that do not meet the IFRS 9 SPPI criterion or that were acquired for the purpose of selling them in the near term. To this end, these financial assets must be part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking, or must be derivatives, except for derivatives that are designated hedging instruments.

Contingent considerations in a business combination
This subcategory covers contingent considerations that the acquirer has classified as financial assets in the context of a business combination.

Financial assets designated as at fair value through profit or loss (fair value option)
Financial assets may be assigned to the subcategory 'financial assets designated as at fair value through profit or loss' by exercising the fair value option, provided that the application of this option eliminates or significantly reduces measurement or recognition inconsistencies (accounting mismatches). The fair value option is applied to eliminate or significantly reduce accounting mismatches that arise if non-derivative financial instruments and related derivatives used to hedge such instruments are measured differently. Derivatives are measured at fair value through profit or loss, whereas non-derivative financial instruments are measured at amortized cost or changes in fair value may be recognized in other comprehensive income. If no hedge accounting takes place, this gives rise to accounting mismatches that can be significantly reduced by applying the fair value option. The fair value option is used in the context of financial assets to prevent accounting mismatches that could arise in connection with loans and advances to banks and customers and bearer bonds.

Financial assets measured at fair value through other comprehensive income (fair value OCI)
This category is broken down into the following subcategories:

Financial assets mandatorily measured at fair value through other comprehensive income
A financial asset is assigned to this subcategory if it is held in accordance with a business model aimed both at collecting contractual cash flows and at selling financial assets. Moreover, the contractual terms of the

financial asset must give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding (SPPI criterion).

Because of the SPPI criterion, these financial assets only comprise debt instruments. They are measured at fair value. Interest income, loss allowances, and currency translation effects must be recognized in profit or loss. Differences between the amortized cost and the fair value are recognized in other comprehensive income. The amounts recognized in other comprehensive income must be recycled to the income statement upon derecognition.

Financial assets designated as at fair value through other comprehensive income (fair value OCI option)
There is an irrevocable option to designate equity instruments as 'financial assets designated as at fair value through other comprehensive income' (fair value OCI option) upon initial recognition. Changes in fair value are recognized in other comprehensive income, except in the case of dividends that do not constitute repayment of capital. The cumulative other comprehensive income is not subsequently recycled to the income statement, e.g. due to derecognition of the instrument. After derecognition of these equity instruments, the cumulative other comprehensive income is reclassified to retained earnings. The fair value OCI option can generally only be exercised for equity instruments that are not held for trading and do not constitute contingent consideration recognized by the acquirer in a business combination pursuant to IFRS 3.

Financial assets measured at amortized cost (AC)
A financial asset is assigned to this category if it is held in accordance with a business model aimed at holding financial assets for the purpose of collecting contractual cash flows. The contractual terms of the financial asset must give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Because of the SPPI criterion, financial assets in this category only comprise debt instruments. They are measured at amortized cost using the effective interest method. Interest income, loss allowances, and currency translation effects must be recognized in profit or loss.

Financial liabilities measured at fair value through profit or loss (fair value PL)
Financial liabilities that are not measured at amortized cost are classified as 'financial liabilities measured at fair value through profit or loss'. This category is broken down into the following subcategories:

Financial liabilities mandatorily measured at fair value through profit or loss
The subcategory 'financial liabilities mandatorily measured at fair value through profit or loss' covers financial liabilities that are issued with the intention of repaying them in the near term. To this end, these financial liabilities must be part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking, or must be derivatives, except for derivatives that are designated hedging instruments.

Contingent considerations in a business combination
This subcategory covers contingent considerations that the acquirer has classified as financial liabilities in the context of a business combination.

Financial liabilities designated as at fair value through profit or loss (fair value option)
Financial liabilities may be assigned to the 'financial instruments designated as at fair value through profit or loss' subcategory by exercising the fair value option, provided that the application of this option eliminates or

significantly reduces measurement or recognition inconsistencies (accounting mismatches), the financial liabilities are managed as a portfolio on a fair value basis, or they include one or more embedded derivatives required to be separated from the host contract. In the case of financial liabilities, the fair value option is exercised to eliminate or significantly reduce accounting mismatches for loan liabilities to banks and customers, issued registered or bearer Pfandbriefe, other bonds and commercial paper, and registered or bearer subordinated liabilities. Some of the promissory notes and bonds are structured financial instruments containing derivatives (in the form of caps, floors, collars, or call options) for which bifurcation is not required. The derivative components of these instruments are subject to economic hedging that does not meet the criteria for the application of hedge accounting.

The fair value option is also applied to structured financial liabilities containing embedded derivatives requiring bifurcation, provided that the embedded derivatives cannot be measured separately and the financial liabilities are not designated as held for trading. The issued financial instruments in this case are primarily guarantee certificates, discount certificates, profit-participation certificates, variable-rate bonds, inflation-linked notes, collateralized loan obligations, and credit-linked notes.

As regards financial liabilities designated as at fair value through profit or loss, any gains/losses resulting from a change in the fair value of a financial liability that is attributable to a change in the liability's credit risk must be recognized in other comprehensive income. The rest of the change in the fair value of this liability is recognized in profit or loss. The amounts recognized in other comprehensive income are reclassified to retained earnings on derecognition of the relevant financial liability.

Financial liabilities measured at amortized cost (AC)

For measurement subsequent to initial recognition, financial liabilities are generally categorized as 'financial liabilities measured at amortized cost', except in the following cases: financial liabilities measured at fair value through profit or loss, financial liabilities that arise when a transfer of a financial asset does not satisfy the condition for derecognition or accounting treatment is based on a continuing involvement, financial guarantee contracts, loan commitments with an interest rate below the market interest rate, and contingent consideration recognized by the acquirer in a business combination pursuant to IFRS 3.

In accordance with IAS 32, shares in partnerships are normally categorized as debt instruments. Given their subordinated status compared with the liabilities of the partnerships concerned, non-controlling interests in partnerships are reported as subordinated capital. Profit attributable to non-controlling interests in partnerships that has not yet been distributed is recognized under other liabilities, provided that the resulting liability is not of a subordinated nature. The capital and profit of partnerships attributable to non-controlling interests in partnerships are classified as 'share capital repayable on demand' under subordinated capital and other liabilities and are assigned to the 'financial liabilities measured at amortized cost' category.

This category also includes liabilities under compensation payment obligations owed to non-controlling interests in consolidated subsidiaries. These liabilities arise if DZ BANK or some other entity controlled by DZ BANK has concluded a profit transfer agreement with a subsidiary in accordance with section 291 (1) of the German Stock Corporation Act (AktG) under which there are non-controlling interests. Liabilities under compensation payment obligations are recognized at the amount of the discounted obligation.

In addition, this category includes liabilities from capitalization transactions that are not designated as unit-linked insurance products. There is no significant transfer of insurance risk in these transactions and they do not therefore satisfy the criteria for an insurance contract under IFRS 4. As a consequence, such transactions need to be treated as financial instruments in accordance with IFRS 9.

Other financial instruments

Hedging instruments
The designation of derivative and non-derivative financial assets and liabilities as hedging instruments is governed by IFRS 9. The recognition and measurement of these hedging instruments is described in note 16.

Liabilities from financial guarantee contracts
Liabilities from financial guarantee contracts measured in accordance with IFRS 9 must be recognized as a liability at fair value by the issuer of the guarantee at the date of issue. The fair value is normally equivalent to the present value of the consideration received for issuing the financial guarantee contract. In any subsequent measurement, the obligation must be measured at the higher of the amount determined in accordance with the impairment model and the amount initially recognized less, where appropriate, the cumulative amount of income recognized in accordance with the principles of IFRS 15. In the presentation of financial guarantee contracts, the guarantee commission receivables due from the beneficiary to the DZ BANK Group as the issuer of the guarantee are offset against guarantee obligations (net method).

Finance lease receivables and lease liabilities
Finance lease receivables and lease liabilities fall within the scope of IFRS 16.

Financial assets and financial liabilities specific to insurance business
In addition to financial instruments that fall within the scope of IFRS 9, financial assets and financial liabilities arising from the insurance business are recognized and measured in accordance with the provisions of the HGB and other German accounting provisions applicable to insurance companies, as required by IFRS 4.25(c).

Deposits with ceding insurers are recognized at their nominal amounts. Receivables arising out of direct insurance operations and receivables arising out of reinsurance operations are recognized at their nominal amounts net of payments made. Impairment losses on receivables arising out of direct insurance operations and on receivables arising out of reinsurance operations are recognized directly in the carrying amounts. Assets related to unit-linked contracts are measured at fair value through profit or loss on the basis of the underlying investments.

Deposits received from reinsurers, payables arising out of direct insurance operations, and payables arising out of reinsurance operations are recognized at their nominal amounts.

Deposits with ceding insurers as well as assets related to unit-linked contracts are reported on the balance sheet under investments held by insurance companies. Deposits received from reinsurers, receivables and payables arising out of direct insurance operations, and receivables and payables arising out of reinsurance operations are recognized under other assets or other liabilities.

Initial recognition and derecognition of financial assets and financial liabilities

Derivatives are initially recognized and derecognized on the trade date. Regular way purchases and sales of non-derivative financial assets and liabilities are generally recognized and derecognized using settlement date accounting. In the case of consolidated investment funds and the issue of certain securities, the financial instruments are also recognized on the trade date. Changes in fair value between the trade date and settlement date are recognized in accordance with the category of the financial instrument.

All financial instruments are generally measured at fair value on initial recognition. In the case of financial assets or financial liabilities not subsequently measured at fair value through profit or loss, transaction costs directly attributable to the acquisition of the financial asset or issue of the financial liability concerned are added or deducted on initial recognition.

Differences between transaction prices and fair values are recognized in profit or loss on initial recognition if the fair values correspond to the price quoted in an active market for an identical asset or identical liability or are based on a valuation technique that only uses data from observable markets. If the fair value is derived from transaction prices at the time of acquisition and this value is then used as a basis for any subsequent measurement, any changes in fair value are only recognized in profit or loss if they can be attributed to a change in observable market data. Any differences not recognized at the time of initial recognition are allocated over the maturity of the financial instruments concerned and recognized in profit or loss accordingly.

Financial assets are derecognized if the contractual rights to the cash flows from the financial assets have expired or these rights have been transferred to third parties, and substantially no risks or rewards of ownership in the financial assets remain. If only some of the risks and rewards are transferred and control is partly retained, the financial asset is derecognized only up to the amount of the continuing involvement. If the criteria for derecognizing financial assets are not satisfied, the transfer to third parties is recognized as a secured loan. Financial liabilities are derecognized when the contractual obligations have been settled, extinguished or have expired.

Gains and losses from the derecognition of financial assets measured at amortized cost are reported as a separate line item in the income statement.

Loss allowances for financial assets

Under IFRS 9, loss allowances are recognized for those financial assets that constitute debt instruments and for loan commitments and financial guarantee contracts. Equity instruments do not fall within the scope of the IFRS 9 impairment model. Loss allowances are recognized in respect of the following financial assets:

- Financial assets in the IFRS 9 category ‘financial assets measured at amortized cost’,
- Financial assets (only debt instruments) in the IFRS 9 category ‘financial assets measured at fair value through other comprehensive income’,
- Undrawn loan commitments where there is a current legal obligation to grant credit (irrevocable loan commitments), provided they are not measured at fair value through profit or loss,
- Financial guarantee contracts, provided they are not measured at fair value through profit or loss,
- Lease receivables, and
- Trade receivables and contract assets that fall within the scope of IFRS 15.

Upon initial recognition, all financial assets are assigned to stage 1 with the exception of financial assets that are purchased or originated credit-impaired assets (POCI assets). Loss allowances for assets in stage 1 must be recognized in an amount equal to the 12-month expected credit loss. Loss allowances for financial assets measured at amortized cost are presented in the loss allowances line item on the assets side of the balance sheet. For financial assets measured at fair value through other comprehensive income, loss allowances are recognized in the reserve from other comprehensive income on the equity and liabilities side.

At each balance sheet date, assets are assigned to stage 2 if their credit risk has significantly increased since initial recognition but there is no objective evidence of impairment. For these assets, the loss allowances are measured at the amount of the lifetime expected credit losses.

Trade receivables and contract assets that fall within the scope of IFRS 15 are allocated directly to stage 2 (simplified approach).

To simplify matters, it can be assumed that the credit risk of a financial instrument has not increased significantly since initial recognition if, on the basis of investment-grade credit ratings, the financial instrument has a low credit risk at the balance sheet date (low credit risk exemption). The low credit risk exemption is applied to securities, loans and advances, undrawn loan commitments, and financial guarantee contracts.

Financial assets deemed to be impaired on the basis of objective evidence are assigned to stage 3. For these assets, the loss allowances are measured at the amount of the lifetime expected credit losses.

Financial assets subject to the IFRS 9 impairment rules must be reviewed at every balance sheet date to ascertain whether one or more events have occurred with an adverse impact on the estimated future cash flows of these financial assets.

Financial assets that are purchased or originated credit-impaired assets (POCI assets) are initially recognized at their carrying amount less the lifetime expected credit losses and amortized using a risk-adjusted effective interest rate. At the balance sheet date, only the cumulative changes to the lifetime expected credit losses since initial recognition are recognized as a loss allowance. Stage allocation is not required for these assets. Please refer to note 88 for more detailed information on loss allowances for financial assets.

Embedded derivatives

An embedded derivative is a component of a hybrid contract that also includes a non-derivative financial instrument (host contract), with the effect that some of the cash flows of the combined financial instrument vary in a way similar to those of a standalone derivative. A derivative that is attached to a financial instrument but is contractually transferable independently of that instrument, or has a different counterparty, is not an embedded derivative, but a separate financial instrument.

If a hybrid contract contains a host contract that is a financial asset, the categorization rules for financial assets are applied to the entire hybrid contract.

If a hybrid contract contains a host contract that is a financial liability, an embedded derivative is separated from the host contract and accounted for separately if:

- the economic characteristics and risks of the derivative are not closely related to the economic characteristics and risks of the host contract,
- a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative, and
- the hybrid contract is not measured at fair value through profit or loss.

If the embedded derivative does not meet all of these conditions, it may not be separated from the host contract. When an embedded derivative is separated, the host contract is accounted for in accordance with the pertinent standards.

If a contract includes one or more embedded derivatives and the host contract is not a financial asset, the entire hybrid contract can be categorized as measured at fair value through profit or loss. This is not the case where embedded derivatives only have an insignificant impact on the contractually specified cash flows or, upon initial comparison with similar hybrid instruments, it is evident without – or with only minor – analysis that separation of the embedded derivative is not permitted.

Classes of financial instruments

For the purposes of the disclosures on the importance of financial instruments to financial position and financial performance, financial instruments falling within the scope of IFRS 7 are classified using the 7 classes of financial instruments described below.

Classes of financial assets

Financial assets measured at fair value

The class of financial assets measured at fair value comprises the following categories defined by IFRS 9:

– 'Financial assets measured at fair value through profit or loss' with the subcategories 'financial assets mandatorily measured at fair value through profit or loss', 'contingent considerations in a business combination' ('contingent considerations'), and 'financial assets designated as at fair value through profit or loss' (fair value option), and
– 'Financial assets measured at fair value through other comprehensive income' with the subcategories 'financial assets mandatorily measured at fair value through other comprehensive income' and 'financial assets designated as at fair value through other comprehensive income' (fair value OCI option).

In addition to the financial assets in the categories specified above, this class of financial assets measured at fair value includes derivatives used for hedging (positive fair values).

Financial assets measured at amortized cost

The 'financial assets measured at amortized cost' class includes, in particular, loans and advances to banks and customers measured at amortized cost and investments measured at amortized cost.

Finance leases

The 'finance leases' class comprises solely finance lease receivables.

Classes of financial liabilities

Financial liabilities measured at fair value

The 'financial liabilities measured at fair value' class comprises financial liabilities in the category 'financial liabilities measured at fair value through profit or loss' with the subcategories 'financial liabilities mandatorily measured at fair value through profit or loss', 'contingent considerations in a business combination' ('contingent considerations'), 'financial liabilities designated as at fair value through profit or loss' (fair value option), and derivatives used for hedging (negative fair values).

Financial liabilities measured at amortized cost

The class known as 'financial liabilities measured at amortized cost' is identical to the category of financial liabilities of the same name.

Leases

The 'leases' class comprises solely lease liabilities.

Financial guarantee contracts and loan commitments
Provisions for financial guarantee contracts and provisions for loan commitments within the scope of IAS 37 are aggregated in the class 'financial guarantee contracts and loan commitments'.

» 06 Hedge accounting

General information on hedge accounting

As an integral part of its risk management strategy, the DZ BANK Group hedges against risks arising in connection with financial instruments.

If the hedging of risk in connection with financial instruments gives rise to accounting mismatches between the hedged item and the hedging instrument used, the DZ BANK Group designates the hedging transaction as a hedge in accordance with the hedge accounting requirements of IFRS 9 in order to eliminate or reduce such mismatches. In exercise of the option available under IFRS 9.6.1.3, the DZ BANK Group continues to account for portfolio hedges in application of the rules under IAS 39.

Fair value hedges

A fair value hedge is intended to ensure that changes in the fair value of the hedged item are offset by countervailing changes in the fair value of the hedging instrument. Changes in the fair value of the hedged item attributable to the hedged risk and changes in the fair value of the hedging instrument are recognized in profit or loss. Where equity instruments are hedged whose changes in fair value are recognized in other comprehensive income, the changes in the fair value of the hedging instruments are also recognized in other comprehensive income. Risks may be hedged by designating hedges either on an individual or on a portfolio basis.

Hedged items categorized as 'financial assets measured at amortized cost' or 'financial liabilities measured at amortized cost' are measured in accordance with the general measurement principles for these financial instruments. The values are adjusted for the change in fair value attributable to the hedged risk. Hedged items categorized as 'financial assets measured at fair value through other comprehensive income' are measured at fair value, although only changes not attributable to the hedged changes in fair value are recognized in other comprehensive income. Interest income and interest expense arising from hedged items or hedging instruments are recognized under net interest income.

If the fair value is hedged against interest-rate risks on a portfolio basis, the cumulative changes in fair value attributable to the hedged risk are reported on the balance sheet under fair value changes of the hedged items in portfolio hedges of interest-rate risk, either under assets or liabilities depending on whether the portfolio comprises financial assets or financial liabilities.

In fully effective hedges, the changes in fair value (attributable to the hedged risk) recognized in profit or loss over the lifetime of the hedge completely cancel each other out. Any changes in fair value recognized in the carrying amount of the hedged items are amortized through profit or loss by the time the hedge has been terminated.

Cash flow hedges

The purpose of cash flow hedges is to ensure that changes in uncertain future cash flows from hedged items are offset by changes in cash flows from hedging instruments.

Hedging instruments are measured at fair value. Changes in fair value attributable to the effective portion of the hedge are recognized in other comprehensive income. Changes in fair value attributable to the ineffective portion of the hedge are recognized in profit or loss. Hedged items are recognized and measured in accordance with the general principles for the relevant measurement category. At the end of a hedging relationship, any changes in fair value recognized in other comprehensive income must be reclassified to profit or loss on the date on which the hedged items or transactions are also recognized in profit or loss.

Hedges of net investments in foreign operations

The purpose of hedges of net investments in foreign operations is to offset exchange differences resulting from net investments denominated in foreign currency.

Hedges of net investments in foreign operations are accounted for in the same way as cash flow hedges.

» 07 Currency translation

All monetary assets and liabilities, together with unsettled spot transactions, are translated at the closing rate into the relevant functional currency of the entities in the DZ BANK Group. Cash in foreign currency is translated using the buying rate for cash on the balance sheet date. The translation of non-monetary assets and liabilities depends on the way in which these assets and liabilities are measured. If non-monetary assets are measured at amortized cost, they are translated using the historical exchange rate. Non-monetary assets measured at fair value are translated at the closing rate. Income, expenses, gains, and losses are translated on the date they are recognized either in profit or loss or in other comprehensive income.

If the functional currency of subsidiaries consolidated in the DZ BANK Group is different from the group's reporting currency (euros), all assets and liabilities are translated at the closing rate. Equity (with the exception of the revaluation reserve) is translated at the historical rate. Income and expenses are translated at the spot rate on the transaction date or, in a simplified procedure, at the average rate. The closing rate can also be used if there is no material impact compared with the use of average rates. Any differences arising from currency translation are reported in the currency translation reserve. In most cases, the functional currency of the entities included in the consolidated financial statements is the euro, i.e. the group reporting currency.

» 08 Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities are offset and reported as a net amount on the balance sheet if the group currently has a legally enforceable right to set off the amounts and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The legal right of set-off cannot be contingent on a future event and must be exercisable in the normal course of business, in the event of default, and in the event of insolvency of the entity or any of the counterparties.

» 09 Sale and repurchase agreements, securities lending

Sale and repurchase agreements (repos) are transactions in which the parties agree the sale and subsequent repurchase of securities at a fixed price and time. The risks and rewards of ownership of the sold securities remain in full with the original seller, provided that the buyer is under an obligation to sell back the securities. If the DZ BANK Group enters into repos as the original seller, the securities sold continue to be recognized on the balance sheet because the derecognition criteria in IFRS 9.3 et seq. are not satisfied. A liability corresponding to the amount of the purchase price received is recognized. If the group enters into reverse repos as a buyer, the securities purchased must not be recognized on the balance sheet. A receivable corresponding to the amount of the purchase price paid is recognized.

Securities lending transactions are transactions in which the lender provides the borrower with securities for use over a defined period of time. Securities lent as part of securities lending transactions remain on the balance sheet. Where collateral is received in this regard, and this collateral is in cash, a liability is recognized. Borrowed securities do not meet the recognition criteria set out in IFRS 9.1 et seq. and must therefore not be recognized on the balance sheet. Any cash collateral furnished in connection with borrowed securities is reported as a receivable.

Sale and repurchase agreements and securities lending transactions result in transfers in which the transferred assets remain on the balance sheet in their entirety. The DZ BANK Group is not involved in any transfers in which the transferred assets are recognized according to the extent of continuing involvement or transfers of financial assets with a continuing involvement that are fully derecognized.

» 10 Collateral

Receivables are recognized for assets pledged as collateral in the form of cash deposits. Other assets pledged as collateral continue to be reported on the balance sheet unchanged. Where collateral is received, and this collateral is in cash, a liability for a corresponding amount is recognized. Other financial or non-financial assets received as collateral are not recognized on the balance sheet unless the assets are obtained in connection with the recovery of collateral or a purchase of real estate that was previously held as collateral.

» 11 Insurance business

General information on the accounting treatment of insurance business

The DZ BANK Group's insurance business comprises insurance contracts, capitalization transactions (insurance contracts without assumption of significant risk), and service contracts. It also includes financial guarantee contracts with insured parties.

Insurance contracts govern the transfer of significant insurance risk from the insured party to the insurer and the payment of compensation if a future contingent event materializes and adversely impacts the insured party. Insurance contracts are recognized in accordance with the requirements of IFRS 4. Capitalization transactions comprise, in particular, fund-linked or index-linked life insurance contracts without policyholder participation, pension fund contracts based on defined benefit plans, and contracts to protect semi-retirement employment models. Capitalization transactions are classified as financial instruments within the scope of IFRS 9. Service contracts comprise, in particular, separable and transferable administrative components of insurance and capitalization contracts. Such service contracts are subject to the revenue recognition requirements specified in IFRS 15. Any financial guarantee contracts in connection with insurance business are recognized in accordance with the accounting requirements applicable to insurance contracts.

The insurance business of the DZ BANK Group is reported under specific insurance items on the income statement and balance sheet. Material components of the specific insurance items are described below.

Financial assets and financial liabilities

Financial assets and financial liabilities held or acquired as part of insurance business are accounted for in accordance with the accounting policies for financial instruments described in note 5. These financial assets and financial liabilities are reported under investments held by insurance companies, other assets held by insurance companies, and other liabilities of insurance companies. Any loss allowances related to financial assets reported under investments held by insurance companies or other assets held by insurance companies are recognized for the categories ‘financial assets measured at amortized cost’ and ‘financial assets measured at fair value through other comprehensive income’ and are applied as a deduction on the assets side of the balance sheet. Within the investments held by insurance companies and other assets held by insurance companies balance sheet items, carrying amounts are presented on a net basis. However, the loss allowances are shown separately (gross presentation) in the balance sheet disclosures.

Other liabilities of insurance companies include the benefit obligations under capitalization transactions for which no material insurance risk is assumed when the policy is concluded. They are reported under liabilities from capitalization transactions. The underlying financial instruments in these transactions are reported as part of assets related to unit-linked contracts under investments held by insurance companies.

Investment property

The investment property included in the investments held by insurance companies is measured at amortized cost in accordance with the cost model. In subsequent years, straight-line depreciation is applied over the asset’s useful life on the basis of cost.

Any expenditure that increases value and extends the useful life of real estate or results in a significant improvement in the fabric of a building is capitalized. Maintenance and repair costs are expensed as incurred.

Recoverable amounts are determined for real estate so that this information can be used in impairment tests and provided in the disclosures required in the notes to the financial statements in accordance with the provisions of IFRS 13. For this purpose, standard valuation methods are generally used that are based on the requirements of the German Real Estate Valuation Guidelines (WertR 2006) and the German Building Code (BauGB). Accordingly, the current value of real estate is determined by using the sales comparison approach, income approach, or cost approach and taking into account the provisions of any relevant contracts.

Advantages gained from low-interest, non-interest-bearing, or forgivable loans, including development loans, are recognized in the same way as government grants. The amount of financial assistance or any government grant is deducted when the carrying amount of the asset is identified and is then recognized in profit or loss over the period covered by the assistance or grant by means of a reduced depreciation charge.

Insurance liabilities

Insurance companies are permitted to continue applying existing accounting policies to certain insurance-specific items during a transition period. Insurance liabilities are therefore recognized and measured in accordance with HGB and other German accounting provisions applicable to insurance companies. Insurance liabilities are shown before the deduction of the share of reinsurers, which is reported as an asset.

Provision for unearned premiums

The provision for unearned premiums represents premiums that have already been collected but that relate to future periods.

The provision for unearned premiums from direct non-life insurance operations is calculated from the gross premiums using the 360-day system. Non-transferable income components are taken into account appropriately.

Unearned premiums from life insurance are calculated taking into account the starting date and maturity date of each individual policy after deduction of non-transferable premium components. Non-transferable income components are taken into account appropriately.

The provision for unearned premiums in health insurance predominantly relates to international travel healthcare insurance business.

The proportion of the provision for unearned premiums relating to ceded insurance business is calculated as contractually agreed in the individual reinsurance treaties.

Benefit reserve

The purpose of the benefit reserve is to ensure that guaranteed entitlements to future insurance benefits can be satisfied on a permanent basis. Guaranteed entitlements for insured persons in respect of life insurance and casualty insurance with premium refund as well as the provision for increasing age in health insurance are reported under the benefit reserve.

The benefit reserve for life insurance and casualty insurance with premium refund is generally calculated in Germany on the basis of individual policies taking into account starting dates in accordance with approved business plans and the principles declared to the relevant regulatory authorities. The prospective method is used for life insurance (except for unit-linked insurance products and account management arrangements) and for casualty insurance (with the exception of premium-based policies that started prior to 1982). The retrospective method is used for other types of insurance. Negative benefit reserves on an individual policy basis are generally recognized with an amount of zero.

The assumptions used in calculations are determined in accordance with current recommendations issued by the Deutsche Aktuarvereinigung e.V., Cologne, (DAV) [German Actuarial Association] and the regulator and in accordance with other national statutory provisions and regulations. As a rule, calculation of the benefit reserve is based on interest rates of between 0.0 percent and 4.0 percent, as was the case in the previous year. These interest rates are generally determined by the legally prescribed maximum discount rates. The calculation assumptions apply from the date on which the policy is written until the policy expires.

For policies entered into before or in 2014, calculation of the benefit reserve is generally based on the Zillmer method. Following the introduction of the German Life Insurance Reform Act (LVRG), zillmerizing has not been applied to most new business entered into since 2015. In particular, zillmerizing is not applied to subsidized pension insurance policies under the German Personal Pension Plan Act (AVmG) or to pension insurance policies under reinsured pension plans.

The benefit reserve implicitly includes administrative expenses for contracts with ongoing payment of premiums. A provision for administrative costs has been recognized to cover premium-free years under insurance policies, fully paid-up insurance, and some legacy insurance commitments.

In health insurance, benefit reserves are computed prospectively on an individual policy basis using the technical parameters for calculating rates. Negative benefit reserves and positive benefit reserves are netted. The parameters for the computation of the reserves involve, in particular, assumptions regarding rates of return on investment, mortality, cancellations, and other costs. The company actuarial discount rate calculated in accordance with the procedure developed by the DAV 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. The discount rate was reduced for observation units with a premium adjustment effective January 1, 2020. The reason for this action is the persistently low level of interest rates. The group uses mortality tables issued by the Verband der Privaten Krankenversicherung e.V., Cologne, (PKV) [Association of German private healthcare insurers], entity-specific probability rates for policy cancellations, and profiles of benefit drawdown. These assumptions are regularly reviewed in accordance with actuarial principles and updated, where appropriate.

When the benefit reserves are prospectively calculated, the parameters used are generally retained throughout the term of the policy. If the actuarial analyses conducted once a year reveal that the level of cover offered is inadequate in terms of either biometric parameters or discount rate, appropriate adjustments are made. The biometric parameters used in such computations are based primarily on the mortality and invalidity tables published by the DAV.

In accordance with the German Regulation on the Principles Underlying the Calculation of the Premium Reserve (DeckRV), supplementary change-in-discount-rate reserves have been recognized for new policies with a discount rate in excess of the reference rate. With the approval of the Bundesanstalt für Finanzdienstleistungsaufsicht, Bonn, (BaFin) [German Federal Financial Supervisory Authority], the supplementary change-in-discount-rate reserve has been increased for existing policies. Entity-specific probabilities for cancellation and lump-sum payments are used for both new and existing policies.

Provision for claims outstanding

The provision for claims outstanding represents benefit obligations arising from claims in which it is not yet possible to reliably determine the amount and/or the timing of the payment. The provision is recognized for claims that have already been reported and also for insured events that have occurred but have not yet been reported. It includes both internal and external expenses as well as the cost of settling claims.

The provision for claims outstanding in direct non-life insurance business is determined on a case-by-case basis for all known claims. Recourse claims, excess proceeds, and claims under loss sharing agreements are netted. Based on the level of delayed claims reports observed in previous years, an additional claims provision is recognized for claims that occur or are caused before the balance sheet date but have not yet been reported by this date. Statistical estimates are used in this measurement. The provision for claims outstanding is not discounted, except in the case of the pension benefits reserve. The provisions for claims settlement expenses, which are also included in this item, are calculated appropriately, taking account of claims incurred but not reported (IBNR).

The provision for claims outstanding as regards life insurance and pension funds is determined on a case-by-case basis. The provision is recognized for claims that have already been incurred and reported by the balance sheet date, but have not yet been settled.

In health insurance, the provision for claims outstanding is determined on the basis of the costs paid out in the financial year in connection with claims during the year. The calculation is based on claims experience over the previous 3 financial years. Recourse claims are deducted from the provision for claims outstanding, as are reimbursements due under the German Act on the Reform of the Pharmaceuticals Market (AMNOG). The recognized provision includes the costs of settling claims. The reinsurers' share of the provision is determined in accordance with reinsurance treaties. Where appropriate, provisions for claims outstanding are recognized on a case-by-case basis for claims relevant to reinsurance.

Provision for premium refunds

The provision for premium refunds represents obligations not yet due for settlement on the balance sheet date relating to premium refunds to insured parties. It includes amounts allocated to policyholders under statutory or contractual arrangements for bonuses and rebates. In addition, the provision for premium refunds includes provisions resulting from time-restricted cumulative recognition and measurement differences between items in the financial statements prepared in accordance with IFRS and those prepared in accordance with HGB. In the case of measurement differences recognized in other comprehensive income, such as unrealized gains and losses on financial assets measured at fair value through other comprehensive income, corresponding expenses for deferred premium refunds are recognized in other comprehensive income; otherwise, changes in the provision are recognized in profit or loss.

The expenses for deferred premium refunds in the non-life insurance business are recognized in an amount equivalent to 90 percent of the difference between the carrying amounts for items in the financial statements prepared in accordance with IFRS and those in the financial statements prepared in accordance with HGB net of deferred taxes.

The provision for premium refunds related to life insurance policies and pension funds is recognized to cover the entitlement of policyholders to profit-related premium refunds. Funds earmarked in this way are therefore made available for future allocation of bonuses to policyholders on an individual policy basis. Within the overall provision for premium refunds, a distinction is made between provisions attributable to bonuses already declared but not yet allocated (including participation in valuation reserves in accordance with HGB), the funding used to finance future terminal bonuses, and the free provision for premium refunds. Under section 140 of the German Act on the Supervision of Insurance Undertakings (VAG), that element of the provision for premium refunds not attributable to bonuses already declared but not yet allocated may be used to avert an imminent crisis and may therefore be seen as mitigating risk. Expenses for deferred premium refunds are recognized in an amount equivalent to 90 percent of the difference between the carrying amounts for items in the financial statements prepared in accordance with IFRS and those in the financial statements prepared in accordance with HGB net of deferred taxes.

The provision for premium refunds related to health insurance includes amounts allocated to policyholders under statutory or contractual arrangements for bonuses and rebates. Expenses for deferred premium refunds are recognized in an amount equivalent to 80 percent of the difference between the carrying amounts for items in the financial statements prepared in accordance with IFRS and those in the financial statements prepared in accordance with HGB net of deferred taxes.

Other insurance liabilities

Other insurance liabilities relating to non-life insurance include obligations arising from membership of the Verein Verkehrsopferhilfe e.V. (VOH) [road casualty support organization], Berlin, in line with the object of this organization and the provision for unearned premiums under dormant vehicle insurance policies, the provision being determined on an individual policy basis. The cancellation provision is calculated on the basis of past experience. The provision for onerous contracts is calculated on the basis of prior-year figures and a forecast of other insurance gains and losses, taking into account interest income and residual maturities.

Other insurance liabilities for life insurance are computed on the basis of individual policies from premiums that are already due but have yet to be paid and have not yet been included in the life insurance liability to the extent that the investment risk is borne by the policyholders.

Other insurance liabilities for health insurance contain a cancellation provision. Among other items, it contains the expected losses arising from the premature loss, not previously accounted for, of the negative portions of the provision for increasing age in health insurance.

Reinsurance business

In the case of reinsurance business, the insurance liabilities are recognized in accordance with the disclosures of the ceding insurers. If no such disclosures are available as at the balance sheet date, the provision for the financial year is estimated. The critical factors in estimating the provision are the contractual terms and conditions and the pattern of this business to date. In a few instances, loss provision details provided by ceding insurers are deemed to be too low in the experience of DZ BANK; in such cases, appropriate increases are applied, the increases having been determined in accordance with prudent business practice, past experience, and actuarial calculation methods.

Reserve for unit-linked insurance contracts

The reserve for unit-linked insurance contracts is an item largely corresponding to assets related to unit-linked contracts. This item is used to report policyholders' entitlements to their individual investment fund units where the related investments arise out of contracts to be reported in accordance with IFRS 4. The reserve is measured at fair value on the basis of the underlying investments. Gains and losses on the fund assets result in corresponding changes on the equity and liabilities side of the balance sheet.

Adequacy test for insurance liabilities

Insurance liabilities must be regularly reviewed and subjected to an adequacy test. The adequacy test determines, on the basis of a comparison with estimated future cash flows, whether the carrying amount of insurance liabilities needs to be increased.

To review the insurance liabilities in the health insurance companies, a regular comparison is made between the present values of estimated future insurance benefits and costs, on the one hand, and the present values of estimated future premium payments on the other. In the event of any deficits, the insurance company has the option of adjusting premiums.

» 12 Leases

DZ BANK Group as lessor

A lease is classified as a finance lease if substantially all the risks and rewards incidental to the ownership of an asset are transferred to the lessee. If the risks and rewards remain substantially with the lessor, the lease is an operating lease.

If a lease is classified as a finance lease, a receivable due from the lessee must be recognized. The receivable is measured at an amount equal to the net investment in the lease at the inception of the lease. Lease payments are apportioned into a payment of interest and repayment of principal. The interest portion based on the lessor's internal discount rate for a constant periodic rate of return is recognized as interest income, whereas the repayment of principal reduces the carrying amount of the receivable.

If a lease is classified as an operating lease, the entities in the DZ BANK Group retain beneficial ownership of the leased asset. These leased assets are reported as assets. The leased assets are measured at cost less depreciation and any impairment losses. Unless another systematic basis is more representative of the pattern of income over time, lease income is recognized in profit or loss on a straight-line basis over the term of the lease and is included in the current income from operating leases reported under net interest income. Gains on disposal, reversals of impairment losses, depreciation, losses on disposal, and impairment losses relating to the underlying leased assets are also included in the current income from operating leases.

DZ BANK Group as lessee

For every lease, the lessee recognizes a right-of-use asset for a leased asset as well as a corresponding lease liability. The only exceptions are short-term leases (term of less than one year from the commencement date) and leases for low-value assets (cost of new purchase of up to €5,000 net); in these cases, the lease payments are recognized as an expense.

The amount of the right-of-use asset initially corresponds to the amount of the lease liability. In subsequent periods, the right-of-use asset is measured at amortized cost. Depreciation is recognized on a straight-line basis over the entire lease term and reported as an administrative expense.

The lease liability is measured as the present value of the future lease payments and is shown under other liabilities. Lease payments must be broken down into an interest portion and a repayment portion. The interest portion based on the internal discount rate or the incremental borrowing rate of interest is recognized as interest expense, whereas the repayment of principal reduces the liability.

The DZ BANK Group uses the practical expedient that enables a lessee to elect not to separate non-lease components from lease components and instead account for all components as a lease.

» 13 Income

Interest and dividends received

Interest is recognized in the relevant period. If the effective interest method is used to calculate interest income, such income is reported under interest income calculated using the effective interest method.

The cash flows used to calculate the effective interest rate take into account contractual agreements in connection with the financial assets and financial liabilities concerned.

Premiums and discounts are allocated over the expected life of financial instruments using the effective interest method. Any additional costs incurred that are directly connected with the acquisition or sale of a financial asset or financial liability, and thus can be directly assigned to the transaction, are factored into the calculation of the effective interest rate. Such costs include sales charges directly associated with the origination of home savings contracts and commitment fees for loans.

Dividends are recognized as soon as a legal entitlement to the payment of such a dividend is established.

Interest income and interest expense arising in connection with derivatives that were not entered into for trading purposes are reported under net interest income. Interest income and interest expense arising in connection with derivatives that were entered into for trading purposes are reported under gains and losses on trading activities.

Recognition of fair value gains and losses when exercising the fair value option

If, to avoid accounting mismatches, hedged items are allocated to the category 'financial assets designated as at fair value through profit or loss' (FVO hedged items), the effects of changes in market prices are reported under other gains and losses on financial instruments unless the effects of changes in market prices relate to derivatives whose gains and losses are reported under gains and losses on trading activities. In this case, the effects of changes in the market prices of the affected financial instruments are reported under gains and losses on trading activities. Credit rating effects arising from FVO hedged items are generally reported under other gains and losses on valuation of financial instruments.

As a rule, fair value gains and losses on derivatives that are classified as FVO hedged items and not reported under gains and losses on trading activities are recognized as an element of other gains and losses on valuation of financial instruments under gains and losses on financial instruments designated as at fair value through profit or loss. Otherwise, the fair value gains and losses on derivatives that are classified as FVO hedged items are recognized under gains and losses on trading activities.

Revenue from contracts with customers

Revenue from contracts with customers is recognized when the underlying services have been performed, it is probable that the economic benefits will flow to the group, and the amount of the revenue can be reliably measured.

In the DZ BANK Group, revenue from contracts with customers primarily consists of fee and commission income. Revenue from contracts with customers is also included in gains and losses on investments held by insurance companies and other insurance company gains and losses as well as in other net operating income. The main components of fee and commission income are fee and commission income from securities business, fee and commission income from payments processing (including card processing), fee and commission income from lending and trust activities, and fee and commission income from asset management.

Fee and commission income from securities business is generated from funds business and brokerage, and also includes custody charges. The income is generally recognized as soon as the service has been performed. Fee and commission income from payments processing (including card processing) and fee and commission income from lending and trust activities is recognized immediately after the service has been provided.

Fees and commissions earned over the period in which a service is performed include certain types of fees for administration and safe custody as part of the securities business and asset management, and fees in connection with the furnishing of financial guarantees. In the case of performance-related management fees, income is recognized when the contractually agreed performance criteria have been satisfied. This is either when the service is contracted (brokering of life insurance or fund contracts, or brokering of home savings loans) or when the service is performed (fee and commission income from building society operations).

Fees and charges that form an integral part of the effective interest rate do not fall within the scope of IFRS 15 and are accounted for in accordance with IFRS 9 regardless of whether the financial assets are measured at fair value or at amortized cost.

The DZ BANK Group applies the following practical expedients as permitted by IFRS 15: it applies the standard to a portfolio of contracts, does not adjust the promised amount of consideration for the effects of a significant financing component, recognizes the incremental costs of obtaining a contract as an expense when incurred, and does not disclose certain information for some performance obligations.

Insurance business

For each insurance contract, gross premiums written are calculated pro rata for an exact number of days based on the actual start date of the insurance. These premiums comprise all amounts that become due in the financial year in connection with insurance premiums, premium installments, and single premiums for direct insurance and reinsurance business. Premiums for unit-linked life insurance, except capitalization transactions without policyholder participation, are also recognized as gross premiums written.

The components of premiums covering administration fees are reported pro rata as income in the income statement. In the case of index-linked policies and service contracts, additional administration charges, fees, and commissions from the service and brokerage business are deferred in accordance with IFRS 15 and apportioned over the relevant periods for the duration of the policy or contract concerned in line with the service performed.

» 14 Cash and cash equivalents

Cash and cash equivalents are cash on hand and balances with central banks.

Cash on hand comprises euros and foreign currencies. Cash in euros is measured at nominal value; foreign currency cash is translated at the buying rate. Balances with central banks are allocated to the 'financial assets measured at amortized cost' category. Interest income on cash and cash equivalents is recognized as interest income from lending and money market business.

» 15 Loans and advances to banks and customers

All receivables attributable to registered debtors that are categorized as 'financial assets measured at amortized cost', 'financial assets measured at fair value through profit or loss', or 'financial assets measured at fair value through other comprehensive income' are recognized as loans and advances to banks and customers. To eliminate or significantly reduce accounting mismatches, certain loans and advances are designated as at fair value through profit or loss. In addition to fixed-term receivables and receivables payable on demand in connection with lending, lease, and money market business, loans and advances to banks and to customers include promissory notes and registered bonds.

Loans and advances to banks and customers are measured predominantly at amortized cost using the effective interest method. In fair value hedges, the carrying amounts of hedged receivables are adjusted for the change in fair value attributable to the hedged risk. The resulting hedge adjustments are recognized within other gains and losses on valuation of financial instruments under gains and losses arising on hedging transactions. Finance lease receivables are recognized and measured in accordance with the requirements for the accounting treatment of leases.

Loss allowances for loans and advances to banks and customers are determined on the basis of the IFRS 9 requirements applicable to the relevant category of financial assets. Depending on these requirements, the loss allowances are reported as a separate line item deduction on the assets side of the balance sheet or in the reserve from other comprehensive income. Finance lease receivables are also subject to the IFRS 9 impairment requirements.

Interest income on loans and advances to banks and customers is recognized as interest income from lending and money market business. This also includes the amortization of hedge adjustments to carrying amounts due to fair value hedges. Realized gains and losses on loans and advances to banks and customers that are categorized as financial assets measured at amortized cost are included in the gains and losses from the derecognition of financial assets measured at amortized cost.

» 16 Hedging instruments (positive and negative fair values)

The carrying amounts of financial instruments designated as hedging instruments in effective and documented hedging relationships are reported under either hedging instruments (positive fair values) or hedging instruments (negative fair values).

These financial instruments are measured at fair value. Changes in the fair value of hedging instruments in the category 'financial assets measured at fair value through profit or loss' used in fair value hedges are recognized in the income statement as an element of other gains and losses on valuation of financial instruments under gains and losses from hedge accounting. If the hedged item is an equity instrument in which changes in fair value are recognized in other comprehensive income, the changes in the fair value of the hedging instruments are also recognized in other comprehensive income.

In the case of financial instruments used for cash flow hedges or hedges of net investments in foreign operations, changes in fair value attributable to the effective portion of the hedges are recognized in other comprehensive income. The cumulative amounts are recognized in the reserve from other comprehensive income as part of equity. Changes in fair value attributable to the ineffective portion of hedges are included in other gains and losses on valuation of financial instruments under gains and losses from hedge accounting.

» 17 Financial assets and financial liabilities held for trading

Financial assets and financial liabilities held for trading comprise solely financial assets and financial liabilities that are held for trading.

Derivatives with positive fair values are classified as financial assets held for trading if they were entered into for trading purposes or, despite being intended to be used as hedges, do not meet the requirements for an accounting treatment as hedging instruments. Financial assets held for trading also include bonds and other fixed-income securities, shares and other variable-yield securities, and receivables held for trading purposes.

Financial liabilities held for trading include short positions, bonds and other debt certificates issued, and liabilities held for trading purposes. The procedure for classifying derivatives with negative fair values as financial liabilities held for trading is the same as that used for financial assets held for trading.

Financial instruments reported as financial assets or financial liabilities held for trading are always measured at fair value through profit or loss. Gains and losses on valuation, interest income and expense, and dividends arising from financial assets and financial liabilities held for trading are recognized under gains and losses on trading activities, provided that there is an actual intent to trade the instruments concerned.

» 18 Investments

The following are recognized as investments: bearer bonds and other fixed-income securities, shares and other variable-yield securities, and other bearer or registered shareholdings in entities in which the DZ BANK Group has no significant influence, provided that these securities or shares are not held for trading purposes. Investments also include investments in subsidiaries, joint ventures, and associates.

Investments are initially recognized at fair value. Investments in joint ventures and associates that are accounted for using the equity method are initially recognized at cost. These investments are subsequently measured in accordance with the principles applicable to the relevant measurement category. In the case of investments in joint ventures and associates, the equity method is used for subsequent measurement.

Impairment losses on investments are determined on the basis of the IFRS 9 requirements applicable to the relevant category of financial assets or on the basis of accounting standards relevant to the financial assets concerned. They are generally reported as a separate line item on the assets side of the balance sheet or in the reserve from other comprehensive income.

Interest and any investment premiums or discounts amortized over the maturity of the investment using the effective interest method are recognized under net interest income. Dividends derived from equity instruments are recognized as current income under net interest income. Current income and expense arising from use of the equity method is also reported under net interest income.

Gains and losses realized on the sale of investments that are not categorized as financial assets measured at amortized cost, as well as impairment losses and reversals thereof on investments in associates and joint ventures that are accounted for using the equity method, are reported under gains and losses on investments. Realized gains and losses on investments that are categorized as financial assets measured at amortized cost are included in the gains and losses from the derecognition of financial assets measured at amortized cost.

Fair value gains and losses on investments that are mandatorily measured at fair value through profit or loss are reported under other gains and losses on valuation of financial instruments.

» 19 Property, plant and equipment, investment property, and right-of-use assets

Property, plant and equipment, investment property, and right-of-use assets comprises land and buildings as well as office furniture and equipment with an estimated useful life of more than one year used by the entities in the DZ BANK Group. This item also includes assets subject to operating leases and right-of-use assets arising from leases. Investment property is real estate held for the purposes of generating rental income or capital appreciation.

Property, plant and equipment, and investment property is measured at cost and subsequently at cost less cumulative depreciation and cumulative impairment losses. Depreciation is largely recognized on a straight-line basis over the useful life of the asset. In most cases, external valuations are used to measure recoverability.

Right-of-use assets arising from leases are measured in accordance with the lease accounting provisions and reduced by cumulative depreciation and cumulative impairment losses in subsequent financial years. Depreciation is largely recognized on a straight-line basis over the useful life of the asset.

If facts or circumstances give rise to indications that assets might be impaired, the recoverable amount is determined. An impairment loss is recognized if the recoverable amount is lower than the asset's carrying amount. The recoverable amount is the higher of fair value less costs to sell and value in use.

Borrowing costs directly assignable to property, plant and equipment, and investment property are capitalized as part of the asset cost, provided that the asset concerned is a qualifying asset.

Depreciation on property, plant and equipment, investment property, and right-of-use assets is reported as an administrative expense. Impairment losses and reversals of impairment losses are reported under other net operating income.

» 20 Income tax assets and liabilities

Current and deferred tax assets are shown under the income tax assets balance sheet item; current and deferred tax liabilities are reported under income tax liabilities. Current income tax assets and liabilities are recognized in the amount of any expected refund or future payment.

Deferred tax assets and liabilities are recognized for temporary differences between the IFRS carrying amounts of the assets or liabilities and their carrying amounts for tax purposes. Deferred tax assets are also recognized in respect of as yet unused tax loss carryforwards, provided that utilization of these loss carryforwards is sufficiently probable. Deferred tax assets are measured using the national and entity-specific tax rates expected to apply at the time of recovery. A uniform tax rate is applied in the case of group companies forming a tax group with DZ BANK.

Deferred tax assets and liabilities are not discounted. Where temporary differences arise in relation to items recognized in other comprehensive income, the resulting deferred tax assets and liabilities are also recognized in other comprehensive income. Current and deferred tax income and expense to be recognized through profit or loss are reported under income taxes in the income statement.

» 21 Other assets and other liabilities

The other assets and other liabilities line items are used to report assets and liabilities that cannot be allocated to any of the other asset or liability line items.

Other assets also include intangible assets and contract assets. Intangible assets are recognized at cost. In the subsequent measurement of software, acquired customer relationships, and other intangible assets with a finite useful life, carrying amounts are reduced by cumulative amortization and cumulative impairment losses. Goodwill and other intangible assets with an indefinite useful life are not amortized but are subject to an impairment test at least once during the financial year.

If the group has satisfied its performance obligation in respect of a customer, but the customer has not yet paid the consideration and payment of the consideration still depends on a condition other than simply a due date, then the group recognizes a contract asset on the balance sheet in place of a receivable. As soon as an unconditional right to the consideration arises, the contract asset is reclassified as a receivable. Contract assets are not amortized, but are included in the calculation of the loss allowances in accordance with IFRS 9.

Other liabilities include other liabilities of insurance companies, accrued expenses, and lease liabilities.

» 22 Loss allowances

Loss allowances for cash and cash equivalents, loans and advances to banks and customers, investments, and other assets that are measured at amortized cost or designated as finance leases are reported as a separate line item on the assets side of the balance sheet. Additions to loss allowances for these balance sheet items, and any reversals of such allowances, are recognized under loss allowances in the income statement.

Loss allowances for investments held by insurance companies and other assets held by insurance companies measured at amortized cost are netted with the carrying amounts of these assets within the investments held by insurance companies and other assets held by insurance companies line items on the balance sheet. Additions to loss allowances for these balance sheet items, and any reversals of such allowances, are recognized under gains and losses on investments held by insurance companies and other insurance company gains and losses in the income statement.

Loss allowances for loans and advances to banks and customers, for investments, and for investments held by insurance companies that are measured at fair value through other comprehensive income are not reported on the assets side of the balance sheet but instead in the reserve from other comprehensive income.

Any additions to, or reversals of, provisions for loan commitments and financial guarantee contracts and other provisions for loans and advances are also recognized in profit or loss under loss allowances.

» 23 Non-current assets and disposal groups classified as held for sale

The carrying amount of non-current assets or disposal groups for which a sale is planned is recovered principally through a sale transaction rather than through their continuing use. These assets and disposal groups therefore need to be classified as held for sale if the criteria set out below are satisfied.

To be classified as held for sale, the assets or disposal groups must be available for immediate sale in their present condition subject only to terms that are usual and customary for sales of such assets or disposal groups, and it must be highly probable that a sale will take place. A sale is deemed to be highly probable if there is a commitment to a plan to sell the asset or disposal group and an active program to locate a buyer and complete the plan has been initiated. In addition, the asset or disposal group must be actively marketed for sale at a price that is reasonable in relation to the current fair value. A sale must be expected to be completed within one year of the date on which the asset or disposal group is classified as held for sale.

Assets classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell. The assets are no longer depreciated from the date on which they are classified as held for sale.

Assets and disposal groups classified as held for sale are shown separately on the balance sheet under non-current assets and disposal groups classified as held for sale and liabilities included in disposal groups classified as held for sale. Gains and losses arising on measurement as well as gains and losses on the sale of these assets or disposal groups that do not belong to a discontinued operation are recognized in the income statement under other net operating income. If the assets or disposal groups belong to discontinued operations, all gains and losses arising from these assets and disposal groups must be shown separately as 'profit/loss from discontinued operations, net of tax'.

» 24 Deposits from banks and customers

All liabilities attributable to registered creditors not classified as 'financial liabilities mandatorily measured at fair value through profit or loss' are recognized as deposits from banks and customers. In addition to fixed-maturity liabilities and liabilities repayable on demand arising from the deposit, home savings and loan, and money market businesses, these liabilities also include, in particular, registered bonds and promissory notes issued.

Deposits from banks and customers are measured at amortized cost using the effective interest method. Where deposits from banks and customers are designated as a hedged item in an effective fair value hedge, the carrying amount is adjusted for any change in the fair value attributable to the hedged risk. If, to eliminate or significantly reduce accounting mismatches, the fair value option is applied for deposits from banks and customers, the liabilities are measured at fair value as at the balance sheet date.

Interest expense on deposits from banks and customers is recognized separately under net interest income. Interest expense also includes gains and losses on early redemptions and the amortization of hedge adjustments to carrying amounts due to fair value hedges. Hedge adjustments to the carrying amount due to fair value hedges are reported within other gains and losses on valuation of financial instruments under gains and losses from hedge accounting.

» 25 Debt certificates issued including bonds

Debt certificates issued including bonds cover 'Pfandbriefe', other bonds, and commercial paper for which transferable bearer certificates have been issued.

Debt certificates issued including bonds are measured in the same way as deposits from banks and customers.

» 26 Provisions

Provisions for employee benefits

Pension plans agreed with the employees of the entities in the DZ BANK Group are based on various types of pension schemes that depend on the legal, economic, and tax situation in each country and include both defined contribution plans and defined benefit plans.

Where a commitment is made to defined contribution plans, fixed contributions are paid to external pension providers. The amount of the contributions and the income earned from the pension assets determine the amount of future pension benefits. The risks arising from the obligation to pay such benefits in the future lie with the pension provider. No provisions are recognized for these defined contribution pension commitments. The contributions paid are recognized as pension and other post-employment benefit expenses under administrative expenses.

Under a defined benefit plan, the employer promises a specific benefit and bears all the risks arising from this promise. Defined benefit obligations are measured on the basis of the projected unit credit method. The measurement depends on various actuarial assumptions. These include, in particular, assumptions about long-term salary and annuity trends and average life expectancy. Assumptions about the salary trend are based on past trends and take into account expectations regarding future changes in the labor market. Assumptions about the annuity trend are based on changes in the inflation rate. Generally accepted biometric tables (2018 G mortality tables published by Professor Dr. Klaus Heubeck) are used to estimate average life expectancy. The discount rate used to discount future payment obligations is an appropriate market interest rate for investment-grade fixed-income corporate bonds with a maturity equivalent to that of the defined benefit obligations. The discount rate depends on the obligation structure (duration) and is determined using a portfolio of high-quality corporate bonds that must satisfy certain quality criteria. One of the notable quality criteria is a credit rating of AA from at least one of the two rating agencies with the greatest coverage in the currency area in question. For the eurozone, these are Moody’s Investors Service and Standard & Poor’s, both New York. Bonds with existing call options in the form of embedded derivatives are not included in this process.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions regarding the defined benefit obligations, together with gains and losses arising from the remeasurement of plan assets and reimbursement rights, are recognized in other comprehensive income in the reporting period in which they occur.

In addition to the provisions for defined benefit pension plans, the provisions for employee benefits include provisions for other long-term employee benefits, provisions for termination benefits, and provisions for short-term employee benefits.

Provisions for other long-term employee benefits are recognized, in particular, to cover semi-retirement (Altersteilzeit) and long-service bonuses. Provisions for early retirement are included under the provisions for termination benefits.

Provisions for termination benefits linked with restructuring are reported separately from other restructuring provisions. The provisions for restructuring assigned to the provisions for employee benefits have been derived from a number of strategies, including DZ BANK’s forward-looking ‘Verbund First 4.0’ initiative, VR Smart Finanz’s strategy to transform itself into a digital provider of finance for the self-employed and small businesses, and the merger of DVB into DZ BANK AG, which was announced in April 2021.

Provisions for employee benefits are generally recognized as a charge to administrative expenses, although reversals of such provisions are reported under other net operating income. As an exception to the rule, provisions for restructuring are recognized under other net operating income.

Provisions for share-based payment transactions

The entities in the DZ BANK Group have entered into various agreements covering variable remuneration components to be paid to members of the Board of Managing Directors and certain other executives. The amount and timing of such remuneration depends on a number of factors, not least the performance of the entity concerned. These agreements are classified as cash-settled share-based payment transactions.

Provisions for share-based payment transactions are recognized (at fair value) if it is sufficiently probable that the remuneration will be paid out in the future. The timing of initial recognition is therefore before the grant date and before any payout in subsequent years. This results in discrepancies compared with the nominal amounts disclosed in note 102 for share-based payments granted but not yet paid out.

Provisions for share-based payment transactions are also subsequently measured at fair value. Any changes in fair value are recognized in profit or loss.

Other provisions

Provisions are liabilities in which the amounts or due dates are uncertain. Provisions are recognized for present obligations arising out of past events, in which it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and the amount of the obligation can be reliably estimated.

The provisions are recognized and measured using the best estimate of the present value of their anticipated utilization. This estimate takes account of future events as well as the risks and uncertainties relating to the issue concerned. The underlying assumptions and estimates used include figures based on past experience as well as expectations and forecasts relating to future trends and developments.

Provisions for irrevocable loan commitments and provisions for financial guarantee contracts are recognized with the same model used for financial assets and in the amount of the expected credit losses.

Other provisions for loans and advances factor in the usual sector-specific level of uncertainty.

Subject to various criteria being met, the building society's terms and conditions provide for bonuses for home savings customers in the form of a reimbursement of some of the sales charge or in the form of interest bonuses on deposits. The bonuses constitute independent payment obligations and are measured and recognized in accordance with IAS 37. In line with the building society's terms and conditions, the granting of bonuses to home savings customers is tied to various conditions, for example the selection of the interest bonus option by the home savings customer, adherence to a lock-up period that, after the option has been selected, starts on the valuation date on which the target valuation and a certain minimum volume of home savings deposits are reached, the achievement of a minimum term for the home savings contract, and a decision not to draw down the allocated home savings loan. In order to measure provisions relating to building society operations, building society simulations (collective simulations) that forecast home savings customers' future behavior are used to evaluate these options. The parameters for collective simulation, including the probabilities of the options being exercised by home savings customers, are set using the exercise rate determined by observing customer behavior in the past. The collective simulations form the basis for cash flow projections that are used to measure the provisions relating to building society operations. These cash flow projections are carried out at portfolio level for a projection period of 15 years. For validation purposes, an additional process is used and the results are compared against those obtained using the measurement method. Uncertainty in connection with the measurement of the provisions may arise depending on the extent to which the assumptions about future customer behavior – taking account of various interest-rate scenarios and management measures – that were forecast using collective simulation actually materialize in the future. Unconditional bonuses in the form of additional interest credit are recognized as part of the amortized cost of the home savings deposits in accordance with IFRS 9.5.3.1 in conjunction with IFRS 9.4.2.1.

Provisions are recognized for risks arising from ongoing legal disputes and cover the possible resulting losses. Such provisions are recognized when the reasons indicating that a legal dispute will result in a payment obligation for an entity in the DZ BANK Group are stronger than those indicating the opposite. Any concentration risk owing to similarities between individual cases is taken into consideration.

The amount in which provisions are recognized for risks arising from ongoing legal disputes is based on the information available at the time and is subject to assumptions and discretion in how a dispute is assessed. For example, this may be because the entity in the DZ BANK Group does not yet have at its disposal all the information required to make a final assessment of the legal dispute, particularly during the early stages of proceedings. Moreover, predictions made by entities in the DZ BANK Group in relation to changes to legal circumstances, changes to official interpretations, or – in the case of court cases – to procedural orders, decisions by the courts, or the arguments expected to be put forward by the opponent in the case may later turn out to be unfounded.

The expense incurred by the unwinding of the discount on provisions is recognized as interest expense under net interest income.

» 27 Subordinated capital

Subordinated capital comprises all registered or bearer debt instruments that, in the event of insolvency or liquidation, are repaid only after settlement of all unsubordinated liabilities but before distribution to shareholders of any proceeds from the insolvency or liquidation.

Subordinated liabilities largely comprise subordinated bearer bonds and promissory notes. Profit-sharing rights outstanding comprise registered and bearer profit-participation certificates in issue. Regulatory Tier 1 capital that does not meet IFRS equity criteria is recognized as other hybrid capital. The share capital repayable on demand comprises the non-controlling interests in partnerships controlled by entities in the DZ BANK Group. These non-controlling interests must be classified as subordinated.

Subordinated capital is measured in the same way as deposits from banks and customers.

» 28 Contingent liabilities

Contingent liabilities are possible obligations arising from past events. The existence of these obligations will only be confirmed by future events outside the control of the entities in the DZ BANK Group. Present obligations arising out of past events but not recognized as provisions because of the improbability of an outflow of resources embodying economic benefits or because the amount cannot be measured with sufficient reliability also constitute contingent liabilities.

The amount of contingent liabilities is disclosed in the notes unless the probability of an outflow of resources embodying economic benefits is remote. Contingent liabilities are measured at the best estimate of possible future outflows of resources embodying economic benefits.

Contingent liabilities in respect of litigation risk are reported when the reasons indicating that there is no current obligation are stronger than those indicating the opposite, but there is still a likelihood that a legal dispute will result in a payment obligation for an entity in the DZ BANK Group. Risks arising from legal disputes are assessed according to how likely they are to occur.

B Disclosure of interests in other entities

» 29 Investments in subsidiaries

Proportion of the DZ BANK Group’s activities and cash flow attributable to non-controlling interests

In the DZ BANK Group, material non-controlling interests in the capital and profit exist in the following subsidiaries:

€ million	Dec. 31, 2021	Dec. 31, 2020
Bausparkasse Schwäbisch Hall subgroup	204	239
DZ PRIVATBANK	66	64
R+V Versicherung subgroup	1,304	1,237
Union Asset Management Holding subgroup	90	62
DZ BANK Capital Funding Trust I	-	285
DZ BANK Capital Funding Trust II	-	490
DZ BANK Capital Funding Trust III	-	348
DZ BANK Perpetual Funding Issuer (Jersey) Limited	-	240
Other	137	128
Total	**1,801**	**3,093**

Bausparkasse Schwäbisch Hall

Bausparkasse Schwäbisch Hall AG – Bausparkasse der Volksbanken und Raiffeisenbanken, Schwäbisch Hall, (BSH) is the parent company of the BSH subgroup. BSH is headquartered in Schwäbisch Hall. DZ BANK directly holds 97.6 percent of the shares in BSH (December 31, 2020: 97.1 percent). The share of voting rights is equal to the shareholding. Non-controlling interests account for 2.4 percent of the voting rights and shares (December 31, 2020: 2.9 percent). As was the case a year earlier, most of these non-controlling interests are held by local cooperative banks.

The net income for the year attributable to the non-controlling interests was €10 million (2020: €8 million). This included the net income for the year attributable to non-controlling interests in the BSH subgroup of €7 million (2020: €6 million). The carrying amount of the non-controlling interests in the DZ BANK Group was €204 million (December 31, 2020: €239 million). Of this amount, €81 million was attributable to non-controlling interests within the BSH subgroup (December 31, 2020: €74 million). DZ BANK has entered into a profit-transfer agreement with BSH. This guarantees a cash settlement of €6.97 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of BSH until the end of the 2025 financial year. After the end of the 2025 financial year, the profit transfer agreement will be extended automatically by one year at a time until December 31, 2030 at the latest, unless the agreement is terminated by giving notice no later than 6 months before it is due to end. Until the end of the 2020 financial year, there was a profit transfer agreement that guaranteed a cash settlement of €6.97 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of BSH. Guaranteed dividends of €1 million were paid to outside shareholders of BSH in 2021 (2020: €1 million). In the BSH subgroup, dividends of €0 million were paid to non-controlling interests (2020: €4 million).

Aggregated financial information for the BSH subgroup:

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	85,371	81,673
Liabilities	79,653	75,608

€ million	2021	2020
Interest income and fee and commission income	1,530	1,606
Net profit	78	51
Other comprehensive income/loss	-425	318
Total comprehensive income/loss	-347	369
Cash flow	455	405

DZ PRIVATBANK

DZ PRIVATBANK S.A., Strassen, Luxembourg, (DZ PRIVATBANK S.A.), headquartered in Luxembourg, together with its wholly owned subsidiaries DZ PRIVATBANK (Schweiz) AG, Zurich, Switzerland, IPConcept (Luxemburg) S.A., Strassen, Luxembourg, and IPConcept (Schweiz) AG, Zurich, Switzerland, is the cooperative center of excellence for the private banking business of the local cooperative banks in Germany.

DZ BANK directly holds 91.8 percent (December 31, 2020: 91.7 percent) of the shares in DZ PRIVATBANK S.A. The share of voting rights is equal to the shareholding. The other shares are held by local cooperative banks and cooperative investors.

The net income for the year attributable to the non-controlling interests was €2 million (2020: €2 million). The carrying amount of the non-controlling interests was €66 million (December 31, 2020: €64 million). The dividend distributed to the non-controlling interests came to €1 million in 2021 (2020: €1 million).

Aggregated financial information for DZ PRIVATBANK:

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	21,611	17,691
Liabilities	20,718	16,836

€ million	2021	2020
Interest income and fee and commission income	609	519
Net profit	32	28
Other comprehensive income/loss	17	-4
Total comprehensive income	49	24
Cash flow	4,038	-1,914

R+V Versicherung

The R+V Group is a subgroup of the DZ BANK Group that, with its individual companies, offers all types of insurance in all of the non-life, life, and health insurance sectors. It also takes on inward reinsurance business in the international market.

R+V Versicherung AG, Wiesbaden, (R+V) is the parent company of the R+V subgroup. R+V is headquartered in Wiesbaden. DZ BANK directly holds 92.2 percent of the shares in R+V (December 31, 2020: 92.2 percent).

The share of voting rights is equal to the shareholding. Non-controlling interests account for 7.8 percent of the voting rights and shares (December 31, 2020: 7.8 percent). Within this figure, local cooperative banks hold 6.0 percent (December 31, 2020: 6.0 percent). The other 1.8 percent (December 31, 2020: 1.8 percent) is held by other entities in the cooperative sector.

The net income for the year attributable to the non-controlling interests was €106 million (2020: €35 million). This included the net income for the year attributable to non-controlling interests in the R+V subgroup of €66 million (2020: €28 million). The carrying amount of the non-controlling interests in the DZ BANK Group was €1,304 million (December 31, 2020: €1,237 million). Of this amount, €673 million was attributable to non-controlling interests within the R+V subgroup (December 31, 2020: €631 million). DZ BANK has entered into a profit-transfer agreement with R+V. This guarantees an annual cash settlement of €6.30 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of R+V until the end of the 2021 financial year. Guaranteed dividends of €7 million were paid to outside shareholders of R+V in 2021 (2020: €7 million). In the R+V subgroup, dividends of €8 million were paid to non-controlling interests (2020: €8 million).

Aggregated financial information for the R+V subgroup:

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	137,390	130,027
Liabilities	128,571	121,539

€ million	2021	2020
Premiums earned	18,994	18,741
Net profit	497	43
Other comprehensive income/loss	-143	241
Total comprehensive income	354	284

Union Asset Management Holding

Union Asset Management Holding AG, Frankfurt am Main, (UMH) is the parent company of the UMH subgroup. UMH is headquartered in Frankfurt am Main. Other major locations are Hamburg and Luxembourg. DZ BANK's aggregated shareholding in UMH is 96.6 percent (December 31, 2020: 96.6 percent). The share of voting rights is equal to the aggregated shareholding. Non-controlling interests account for 3.4 percent of the shares (December 31, 2020: 3.4 percent). Most of these non-controlling interests are held by local cooperative banks. The proportion held indirectly by DZ BANK is 95.8 percent (December 31, 2020: 95.8 percent).

The carrying amount of the non-controlling interests within the DZ BANK Group was €90 million (December 31, 2020: €62 million) and related to the multiplicative share of the capital of UMH. Of this amount, €34 million was attributable to non-controlling interests within the UMH subgroup (December 31, 2020: €31 million). The net income for the year attributable to the non-controlling interests was €41 million (2020: €24 million). This included the net income for the year attributable to non-controlling interests in the UMH subgroup of €10 million (2020: €9 million). The dividend distributed to the non-controlling interests totaled €13 million in 2021 (2020: €12 million). €7 million of this amount was paid as dividends to non-controlling interests in the UMH subgroup (2020: €7 million).

Aggregated financial information for the UMH subgroup:

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	4,665	3,561
Liabilities	2,181	1,721

€ million	2021	2020
Interest income and fee and commission income	3,809	2,791
Net profit	859	460
Other comprehensive income/loss	26	-22
Total comprehensive income	884	438

DZ BANK Capital Funding Trust I, II, and III and DZ BANK Perpetual Funding Issuer (Jersey) Limited
DZ BANK had established companies in Delaware, USA, and Jersey, Channel Islands, in order to increase own funds in accordance with section 10a KWG. The business activities of these companies were limited to the issuance of open-ended equity instruments without redemption incentives. These equity instruments that had been issued were held by non-voting non-controlling interests in the DZ BANK Group. The companies in question were:

– DZ BANK Capital Funding Trust I, Wilmington, Delaware,
– DZ BANK Capital Funding Trust II, Wilmington, Delaware,
– DZ BANK Capital Funding Trust III, Wilmington, Delaware,
– DZ BANK Perpetual Funding Issuer (Jersey) Limited, St. Helier, Jersey.

The bonds issued by DZ BANK Perpetual Funding Issuer (Jersey) Limited, St. Helier, Jersey, and the non-cumulative trust preferred securities issued by DZ BANK Capital Funding Trust I, DZ BANK Capital Funding Trust II, and DZ BANK Capital Funding Trust III, all Delaware, USA, were called on January 12, 2021 and repaid in full during the reporting year.

The companies were established at their registered office. The Delaware companies were headquartered in New York, USA. The Channel Islands company was headquartered in Frankfurt am Main. Virtually 100 percent of the issued share capital of each of the companies was attributable to non-voting non-controlling interests, while the voting rights in the companies were attached to only an insignificant proportion of the shares. As a result, virtually all of the profits and losses of the companies were attributable to the non-controlling interests.

The companies' net income for the year is shown in the following table:

€ million	2021	2020
DZ BANK Capital Funding Trust I	3	6
DZ BANK Capital Funding Trust II	1	6
DZ BANK Capital Funding Trust III	1	4
DZ BANK Perpetual Funding Issuer (Jersey) Limited	-	1

Distributions of dividends to the non-controlling interests generally took the form of a variable or fixed-rate coupon, the actual payment of which was not subject to any contractual obligation.

The dividends paid to the non-controlling interests in the financial year are shown in the following table:

€ million	2021	2020
DZ BANK Capital Funding Trust I	-	6
DZ BANK Capital Funding Trust II	-	6
DZ BANK Capital Funding Trust III	-	4
DZ BANK Perpetual Funding Issuer (Jersey) Limited	-	1

Aggregated financial information for the DZ BANK Capital Funding Trust companies and the DZ BANK Perpetual Funding Issuer company:

€ million	Dec. 31, 2021	Dec. 31, 2020
Non-current assets	-	1,410
Liabilities	-	-

€ million	2021	2020
Interest income and fee and commission income	6	17
Net profit	6	17
Total comprehensive income	6	17

Nature and extent of significant restrictions

National regulatory requirements, contractual provisions, and provisions of company law restrict the DZ BANK Group’s ability to transfer assets within the group. Where these restrictions can be specifically assigned to individual line items on the balance sheet, the carrying amounts of the assets and liabilities subject to restrictions on the balance sheet date are shown in the following table:

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	**108,619**	**100,934**
Loans and advances to banks	1,870	2,490
Loans and advances to customers	5,327	2,717
Investments	1,882	2,014
Investments held by insurance companies	99,074	93,204
Other assets	467	509
Liabilities	**162,897**	**156,385**
Deposits from banks	1,755	1,799
Deposits from customers	66,222	64,709
Provisions	1,398	1,443
Insurance liabilities	93,522	88,434

Nature of the risks associated with interests in consolidated structured entities

Risks arising from interests in consolidated structured entities largely result from loans to fully consolidated funds, some of which are extended in the form of junior loans.

» 30 Interests in joint arrangements and associates

Nature, extent, and financial effects of interests in joint arrangements

Prvá stavebná sporiteľňa

Prvá stavebná sporiteľňa a.s., Bratislava, Slovakia, (PSS) is a joint venture between BSH and its partners Raiffeisen Bausparkassen Holding GmbH, Vienna, Austria, Slovenská sporiteľňa a.s., Bratislava, Slovakia, and Erste Group Bank AG, Vienna, Austria. PSS is headquartered in Bratislava, Slovakia. PSS is the market leader for building society operations in Slovakia. BSH's shareholding in PSS was 32.5 percent on the balance sheet date, as it had been at December 31, 2020. In the DZ BANK Group, the interests in PSS are accounted for using the equity method. PSS did not pay any dividend to BSH in 2021 (2020: no dividend).

Aggregated financial information for PSS:

€ million	Dec. 31, 2021	Dec. 31, 2020
Current assets	549	570
of which cash and cash equivalents	22	76
Non-current assets	2,399	2,413
Current liabilities	652	664
of which financial liabilities	637	650
Non-current liabilities	2,011	2,053
of which financial liabilities	1,985	2,042

€ million	2021	2020
Interest income	92	95
Interest expense	-28	-33
Fee and commission income	12	13
Fee and commission expenses	-1	-1
Administrative expenses	-40	-36
Income taxes	-5	-3
Profit from continuing operations, net of tax	17	8
Total comprehensive income	17	8

Reconciliation from the aggregated financial information to the carrying amount of the interests in PSS:

€ million	Dec. 31, 2021	Dec. 31, 2020
Total net assets	284	266
Share of net assets	92	87
Cumulative impairment losses on the carrying amount of the investment	-20	-11
Carrying amount under the equity method	72	76

Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse)

Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse), Tianjin, China, (SGB) is a joint venture between BSH and China Construction Bank Corporation, Beijing, China. SGB is headquartered in Tianjin, China. Its business activities are concentrated in the regions of Tianjin (population of approx. 13 million) and Chongqing (population of approx. 30 million). BSH's shareholding in this Chinese building society was 24.9 percent on the balance sheet date, as it had been at December 31, 2020. In the DZ BANK Group, the interests in SGB are accounted for using the equity method. SGB did not pay a dividend in 2021, as had also been the case in the previous year.

Aggregated financial information for SGB:

€ million	Dec. 31, 2021	Dec. 31, 2020
Current assets	1,596	1,105
of which cash and cash equivalents	574	417
Non-current assets	2,747	2,017
Current liabilities	2,986	2,062
of which financial liabilities	2,775	1,883
Non-current liabilities	954	685
of which financial liabilities	954	680

€ million	2021	2020
Interest income	137	107
Interest expense	-67	-44
Fee and commission income	8	5
Fee and commission expenses	-17	-14
Administrative expenses	-43	-34
Income taxes	-4	-3
Profit from continuing operations, net of tax	13	8
Other comprehensive income/loss	42	-10
Total comprehensive income/loss	55	-2

Reconciliation from the aggregated financial information to the carrying amount of the interests in SGB:

€ million	Dec. 31, 2021	Dec. 31, 2020
Total net assets	**404**	**375**
Share of net assets	**101**	**93**
Cumulative impairment losses on the carrying amount of the investment	-59	-63
Carrying amount under the equity method	**42**	**30**

Deutsche WertpapierService Bank

Deutsche WertpapierService Bank AG, Frankfurt am Main, (dwpbank) is a joint venture of DZ BANK with Westfälisch-Lippische Sparkassen- und Giroverband, Münster, Rheinischer Sparkassen- und Giroverband, Düsseldorf, and 3 other banks in Germany and is accounted for in the DZ BANK Group's financial statements using the equity method. dwpbank is headquartered in Frankfurt am Main. Its capital is divided into 20,000,000 voting registered shares with transfer restrictions. DZ BANK holds a 50.0 percent stake in dwpbank, as it did at December 31, 2020. The equity method is applied to dwpbank on the basis of financial statements prepared in accordance with HGB because the difference compared with financial statements prepared in accordance with IFRS is not material.

The shares in dwpbank are not traded in an active market. dwpbank did not pay any dividend to DZ BANK in 2021 (2020: no dividend).

Aggregated financial information for dwpbank:

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	682	693
Liabilities	392	423
of which financial liabilities	186	208

dwpbank only has a small amount of cash and cash equivalents.

€ million	2021	2020
Interest income	3	3
Interest expense	-3	-3
Fee and commission income	416	400
Fee and commission expenses	-101	-90
Administrative expenses	-252	-228
Income taxes	-28	-11
Profit from continuing operations, net of tax	20	60
Total comprehensive income	20	60

Reconciliation from the aggregated financial information to the carrying amount of the interests in dwpbank:

€ million	Dec. 31, 2021	Dec. 31, 2020
Total net assets	290	270
Share of net assets	145	135
Capitalization of goodwill	29	29
Carrying amount under the equity method	174	164

Other joint ventures

The carrying amount of the equity-accounted joint ventures that, individually, are not material totaled €61 million on the balance sheet date (December 31, 2020: €59 million).

Aggregated financial information for equity-accounted joint ventures that, individually, are not material:

€ million	2021	2020
Share of profit from continuing operations, net of tax	4	5
Share of other comprehensive income	-	8
Share of total comprehensive income	4	13

Nature, extent, and financial effects of investments in associates

Other associates

The carrying amount of the equity-accounted associates that, individually, are not material totaled €72 million on the balance sheet date (December 31, 2020: €112 million).

Aggregated financial information for equity-accounted associates that, individually, are not material:

€ million	2021	2020
Share of profit/loss from continuing operations, net of tax	-3	-2
Share of profit from discontinued operations, net of tax	-	1
Share of total comprehensive income/loss	-3	-1

» 31 Interests in unconsolidated structured entities

Structured entities are entities that have been designed so that voting rights or similar rights are not the dominant factor in deciding who controls the entity. The DZ BANK Group distinguishes between the following types of interests in unconsolidated structured entities, based on their design and the related risks:

- Interests in investment funds issued by the DZ BANK Group,
- Interests in investment funds not issued by the DZ BANK Group,
- Interests in securitization vehicles.

Interests in investment funds issued by the DZ BANK Group

The interests in the investment funds issued by the DZ BANK Group largely comprise investment funds issued by entities in the Union Investment Group in accordance with the contractual form model without voting rights and, to a lesser extent, those that are structured as a company with a separate legal personality. The number of unit/share types and volume of investment funds issued and managed by the UMH subgroup can be broken down as follows:

	Dec. 31, 2021		Dec. 31, 2020	
€ million	Volume	Number	Volume	Number
Mutual funds	238,934	339	198,732	341
of which guarantee funds	361	9	790	14
Special funds	144,554	494	125,070	426
Total	**383,488**	**833**	**323,802**	**767**

Furthermore, DVB Bank SE, Frankfurt am Main, (DVB) makes subordinated loans available to fully consolidated funds for the purpose of transport finance. In turn, these funds make subordinated loans or direct equity investments available to unconsolidated entities.

The maximum exposure of the investment funds issued and managed by the DZ BANK Group is shown in the following tables as a gross value, excluding deduction of available collateral:

AS AT DECEMBER 31, 2021

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Assets	**2,448**	**-**	**5,778**	**8,226**
Loans and advances to customers	4	-	11	14
Investments	2,019	-	7	2,026
Investments held by insurance companies	162	-	5,726	5,887
Property, plant and equipment, investment property, and right-of-use assets	61	-	-	61
Other assets	203	-	26	229
Non-current assets and disposal groups classified as held for sale	-	-	8	8
Liabilities	**73**	**11**	**-**	**73**
Financial liabilities held for trading	11	11	-	11
Other liabilities	62	-	-	62
Net exposure recognized on the balance sheet	2,375	-11	5,778	8,153
Financial guarantee contracts, loan commitments and other obligations	**352**	**352**	**-**	**352**
Other obligations	352	352	-	352
Actual maximum exposure	**2,727**	**340**	**5,778**	**8,505**

AS AT DECEMBER 31, 2020

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Assets	**2,077**	**-**	**5,241**	**7,318**
Loans and advances to customers	3	-	5	8
Investments	1,673	-	6	1,679
Investments held by insurance companies	136	-	5,128	5,264
Property, plant and equipment, investment property, and right-of-use assets	71	-	-	71
Other assets	155	-	22	177
Non-current assets and disposal groups classified as held for sale	39	-	80	119
Liabilities	**84**	**12**	**-**	**84**
Hedging instruments (negative fair values)	12	12	-	12
Other liabilities	72	-	-	72
Net exposure recognized on the balance sheet	1,993	-12	5,241	7,234
Financial guarantee contracts, loan commitments and other obligations	**745**	**745**	**-**	**745**
Other obligations	745	745	-	745
Actual maximum exposure	**2,738**	**733**	**5,241**	**7,979**

Regarding the disclosure of the maximum exposure, it must be noted that the 'Other obligations' line item in the table above includes market price guarantees in the amount of the nominal amounts of the guarantee commitments for guarantee funds of €363 million (December 31, 2020: €757 million), less negative fair values of €11 million (December 31, 2020: €12 million) recognized as a liability for the put options embedded in these products. The maximum exposure for market price guarantees for the guarantee funds does not represent the economic risk of this product type because the economic risk also has to reflect these guarantee funds' net assets (net asset value) of €361 million on the balance sheet date (December 31, 2020: €790 million) and the management model used with these products to safeguard the minimum payment commitments. The benefit under a market price guarantee is triggered if the fair value of the affected units does not reach the specified guaranteed level on particular dates. The put options embedded in the guarantee funds are reported as derivatives (negative fair values) under equity and liabilities on the balance sheet.

The interests in investment funds issued and managed by the DZ BANK Group resulted in losses of €24 million in 2021 (2020: losses of €66 million). Distributions in 2021 relating to each investment fund were offset in the calculation of the losses incurred in respect of each fund.

The revenue generated from investment funds issued by the DZ BANK Group was as follows:

2021

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Interest income and current income and expense	3	-	1	4
Fee and commission income	3,231	3	252	3,483
Gains and losses on investments	2	-	-	2
Other gains and losses on valuation of financial instruments	7	-	-3	4
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	34	34
Other operating income	-	-	14	14
Total	**3,243**	**2**	**298**	**3,541**

2020

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Interest income and current income and expense	7	-	2	9
Fee and commission income	2,309	7	199	2,508
Gains and losses on investments	-5	-	-	-5
Other gains and losses on valuation of financial instruments	16	-	2	18
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-	29	29
Other operating income	-	-	2	2
Total	**2,327**	**7**	**234**	**2,561**

Income of €5 million was generated in 2021 and impacted on other comprehensive income (2020: €0 million).

Interests in investment funds not issued by the DZ BANK Group

The interests in the investment funds not issued by the DZ BANK Group above all comprise investment funds managed by entities in the Union Investment Group within the scope of their own decision-making powers that have been issued by entities outside the DZ BANK Group and parts of such investment funds. Their total volume amounted to €44,013 million (December 31, 2020: €39,836 million). The DZ BANK Group also extends loans to investment funds in order to generate interest income.

In addition, there were investment funds issued by entities outside the group in connection with unit-linked life insurance amounting to €13,678 million (December 31, 2020: €10,056 million) that, however, do not result in a maximum exposure.

The maximum exposure arising from the investment funds not issued by the DZ BANK Group is shown as a gross value, excluding deduction of available collateral. The following assets and liabilities have been recognized on the DZ BANK Group's balance sheet in connection with interests in investment funds not issued by the DZ BANK Group:

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	**7,358**	**7,051**
Loans and advances to customers	7,358	7,051
Net exposure recognized on the balance sheet	7,358	7,051
Financial guarantee contracts, loan commitments and other obligations	**488**	**267**
Financial guarantee contracts	37	37
Loan commitments	451	230
Maximum exposure	**7,846**	**7,318**

The revenue generated from interests in investment funds not issued by the DZ BANK Group was as follows:

€ million	2021	2020
Interest income and current income	110	117
Fee and commission income	85	78
Total	**195**	**195**

Interests in securitization vehicles

The interests in securitization vehicles are interests in vehicles where the DZ BANK Group's involvement goes beyond that of an investor. The assets and liabilities listed below have been recognized on the DZ BANK Group's balance sheet in connection with these interests. There is also an additional exposure from contingent liabilities and from financial guarantee contracts, loan commitments, and other obligations, which are shown at their nominal amounts. Only financial guarantee contracts, loan commitments, and other obligations for which no liability or contingent liability has been recognized are included. The maximum exposure is determined as a gross value, excluding deduction of available collateral.

€ million	Dec. 31, 2021	Dec. 31, 2020
Assets	**1,316**	**1,658**
Loans and advances to customers	1,208	1,498
Financial assets held for trading	23	86
Investments	85	74
Liabilities	**16**	**7**
Deposits from customers	5	4
Financial liabilities held for trading	8	1
Provisions	4	2
Net exposure recognized on the balance sheet	1,300	1,651
Financial guarantee contracts, loan commitments and other obligations	**3,609**	**2,932**
Financial guarantee contracts	20	-
Loan commitments	3,590	2,932
Maximum exposure	**4,909**	**4,583**

The revenue generated from interests in securitization vehicles was as follows:

€ million	2021	2020
Interest income	5	6
Fee and commission income	62	45
Gains and losses on trading activities	-7	8
Total	**60**	**59**

The material interests in securitization vehicles comprise the two multi-seller asset-backed commercial paper (ABCP) programs: CORAL and AUTOBAHN.

DZ BANK acts as sponsor and program agent for both programs. It is also the program administrator for AUTOBAHN. As sponsor, DZ BANK was involved in setting up the structured entities and provides various services for them. Under the CORAL program, customers of the bank sell assets to separate special-purpose entities. The assets purchased essentially consist of trade receivables, loans, and lease receivables. Under the AUTOBAHN program, assets of North American customers are sold to specially established special-purpose entities and funded through the issuing company by means of ABCP issues.

The special-purpose entities are unconsolidated structured entities. Owing to the cellular structure of the transactions, there are no investee companies to be assessed. DZ BANK does not have control over the individual silos because it acts as agent and not as principal.

The purchase of the assets is funded using liquidity lines and by issuing money market-linked ABCPs. DZ BANK is a liquidity agent for the program, which involves making liquidity facilities available.

In 2021, DZ BANK did not provide either of the programs with any non-contractual support. Moreover, it currently has no intention to provide financial or other support. Because the ABCP programs are fully supported programs, DZ BANK bears all the credit risk.

» 32 Sponsoring arrangements for unconsolidated structured entities

The DZ BANK Group sponsors an unconsolidated structured entity within the meaning of IFRS 12 if it was involved in establishing the structured entity or if the structured entity is linked by name to DZ BANK or a subsidiary within the DZ BANK Group and there are no interests, within the meaning of IFRS 12, in the structured entity.

Until the majority of the shares were acquired in October 2020, the DZ BANK Group acted as sponsor for an unconsolidated structured entity because it was linked with the structured entity by name and did not have any interests in the structured entity within the meaning of IFRS 12. The structured entity was an open-ended real estate fund for which the DZ BANK Group received a fee for sales and for services. In 2020, the fees had amounted to €24 million under net fee and commission income and €1 million under other net operating income.

C Disclosures relating to the income statement and the statement of comprehensive income

» 33 Segment information

Information on operating segments

2021

€ million	BSH	R+V	TeamBank	UMH
Net interest income	581	-	492	17
Net fee and commission income	12	-	-1	2,293
Gains and losses on trading activities	-	-	-	-
Gains and losses on investments	22	-	-	2
Other gains and losses on valuation of financial instruments	-	-	1	40
Gains and losses from the derecognition of financial assets measured at amortized cost	2	-	-	-
Premiums earned	-	18,994	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	5,280	-	-
Insurance benefit payments	-	-20,356	-	-
Insurance business operating expenses	-	-3,183	-	-
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	-	-	-	-
Loss allowances	-14	-	-57	-
Administrative expenses	-515	-	-289	-1,118
Other net operating income	42	37	5	-
Profit/loss before taxes	**130**	**772**	**151**	**1,233**
Cost/income ratio (%)	78.1	-	58.1	47.5
Regulatory RORAC (%)	10.0	7.7	26.1	>100.0
Average own funds/solvency requirement	1,298	9,978	581	547
Total assets/total equity and liabilities as at Dec. 31, 2021	85,371	137,390	10,022	4,665

	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DVB	DZ BANK – holding function	Other/ Consolidation	**Total**
	1,026	721	59	125	-21	-32	-183	**2,785**
	471	18	212	-30	9	-	-49	**2,935**
	67	-6	21	-	5	-	65	**152**
	75	42	-	-	-	-	104	**245**
	58	63	-3	-	44	-	39	**242**
	29	-	-	-	-	-	-31	**-**
	-	-	-	-	-	-	-	**18,994**
	-	-	-	-	-	-	-29	**5,251**
	-	-	-	-	-	-	-	**-20,356**
	-	-	-	-	-	-	136	**-3,047**
	-	-	-	-	-	-	-	**-**
	89	-24	-	-14	140	-	-	**120**
	-1,292	-247	-251	-80	-118	-208	-147	**-4,265**
	-58	21	4	-9	-36	-	35	**41**
	465	**588**	**41**	**-9**	**23**	**-240**	**-58**	**3,096**
	77.5	28.8	85.7	93.0	>100.0	-	-	**58.9**
	8.8	41.6	12.1	-5.2	25.3	-	-	**15.7**
	5,287	1,412	341	181	93	-	-	**19,716**
	335,254	91,362	21,611	3,352	7,097	19,675	-88,526	**627,273**

2020

€ million	BSH	R+V	TeamBank	UMH
Net interest income	531	-	492	10
Net fee and commission income	-9	-	-30	1,566
Gains and losses on trading activities	-	-	-	-
Gains and losses on investments	56	-	-	44
Other gains and losses on valuation of financial instruments	5	-	-1	-83
Gains and losses from the derecognition of financial assets measured at amortized cost	15	-	-	-
Premiums earned	-	18,741	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	2,091	-	-
Insurance benefit payments	-	-17,499	-	-
Insurance business operating expenses	-	-3,046	-	-
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	-	-19	-	-
Loss allowances	-29	-	-59	-
Administrative expenses	-526	-	-256	-919
Other net operating income	38	9	8	31
Profit/loss before taxes	**81**	**277**	**154**	**649**
Cost/income ratio (%)	82.7	-	54.6	58.6
Regulatory RORAC (%)	6.6	2.6	27.0	>100.0
Average own funds/solvency requirement	1,216	10,473	569	432
Total assets/total equity and liabilities as at Dec. 31, 2020	81,673	130,027	9,285	3,561

	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DVB	DZ BANK – holding function	Other/ Consolidation	**Total**
	832	714	69	138	30	-50	-80	2,686
	441	6	188	-24	25	-	-42	2,121
	518	9	17	-	26	-	123	693
	15	1	-	-	-1	-	51	166
	1	118	-2	-	-81	-	-19	-62
	-3	-	-	-	-	-	-14	-2
	-	-	-	-	-	-	-	18,741
	-	-	-	-	-	-	-44	2,047
	-	-	-	-	-	-	-	-17,499
	-	-	-	-	-	-	124	-2,922
	-	-	-	-	-	-	-1	-20
	-337	-47	-1	-49	-153	-	-3	-678
	-1,272	-237	-235	-102	-154	-188	-147	-4,036
	39	18	2	-8	23	-	50	210
	234	**582**	**38**	**-45**	**-285**	**-238**	**-2**	**1,445**
	69.0	27.4	85.8	96.2	>100.0	-	-	65.5
	4.4	36.7	10.8	-17.5	>-100.0	-	-	7.1
	5,298	1,586	352	255	154	-	-	20,336
	314,574	94,486	17,691	3,684	10,247	21,264	-91,957	594,535

General information on operating segments
The information on operating segments has been prepared using the management approach in accordance with IFRS 8. Under this standard, external reporting must include segment information that is used internally for the management of the entity and for the purposes of quantitative reporting to the chief operating decision-makers. The information on operating segments has therefore been prepared on the basis of the internal management reporting system.

Definition of operating segments
Segmentation is fundamentally based on the integrated risk and capital management system, the function of which is to create transparency, notably in respect of the risk structure and risk-bearing capacity of the individual management units. The segment information presents separate disclosures for the management units DZ HYP AG, Hamburg/Münster, (DZ HYP), TeamBank AG Nürnberg, Nuremberg, (TeamBank), DZ PRIVATBANK, and the BSH, DVB, R+V, UMH, and VR Smart Finanz subgroups. DZ BANK is broken down into the central institution and corporate bank (DZ BANK – CICB) and the group management function (DZ BANK – holding function) in line with the internal financial reporting structure. The DZ BANK – CICB operating segment comprises the cooperative central institution function, which supports the operating activities of the local cooperative banks, and the corporate bank function. DZ BANK – holding function is mainly used to pool tasks carried out on behalf of the DZ BANK Group in relation to commercial law, tax, and prudential supervision. The total assets of DZ BANK – holding function include the equity, plus a number of other items such as a notional carrying amount for the long-term equity investment in DZ BANK – CICB, together with the carrying amounts of the long-term equity investments in the other management units. The notional long-term equity investment in DZ BANK – CICB is measured in an amount equating to 11 percent of the risk-weighted assets of DZ BANK – CICB. DZ BANK – holding function does not constitute an operating segment within the meaning of IFRS 8.5 but is presented separately in line with the internal reporting structure. All other companies in the DZ BANK Group, which are not required to provide regular quantitative reports to the chief operating decision-makers, and the consolidations are reported on an aggregated basis under Other/Consolidation.

Presentation of operating segments
Interest income and associated interest expenses generated by the operating segments are offset and reported as net interest income in the information on operating segments because, from a group perspective, the operating segments are managed solely on the basis of the net figure.

Measurement
Internal reporting to the chief operating decision-makers is primarily based on the generally accepted accounting and measurement principles applicable to the DZ BANK Group.

Intragroup transactions between operating segments and internal transactions in the DZ BANK – CICB operating segment are carried out on an arm's-length basis. These transactions are predominantly reported internally using the financial reporting standards applied to external financial reporting.

The key indicators for assessing the performance of the operating segments are profit/loss before taxes, the cost/income ratio, and the return on risk-adjusted capital (regulatory RORAC).

The cost/income ratio shows the ratio of administrative expenses to operating income and reflects the economic efficiency of the operating segment concerned.

Operating income comprises net interest income, net fee and commission income, gains and losses on trading activities, gains and losses on investments, other gains and losses on valuation of financial instruments, gains and losses from the derecognition of financial assets measured at amortized cost, net income from insurance business, and other net operating income.

Regulatory RORAC is a risk-adjusted performance measure. It reflects the relationship between profit before taxes and the average own funds for the year (calculated as an average of the figure for the four quarters) in accordance with the own funds/solvency requirements for the financial conglomerate. It therefore shows the return on the regulatory risk capital employed.

Other/Consolidation

The consolidation-related adjustments shown under Other/Consolidation to reconcile operating segment profit/loss before taxes to consolidated profit/loss before taxes are attributable to the elimination of intragroup transactions and to the fact that investments in joint ventures and associates were accounted for using the equity method. Differences between the figures in internal management reporting and those reported in the consolidated financial statements that arise from the recognition of internal transactions in the DZ BANK – CICB operating segment are also eliminated.

The adjustments to net interest income were primarily the result of the elimination of intragroup dividend payments and profit distributions in connection with intragroup liabilities to dormant partners and were also attributable to the early redemption of issued bonds and commercial paper that had been acquired by entities in the DZ BANK Group other than the issuer. Internal transactions in the DZ BANK – CICB operating segment were also eliminated in net interest income and with offsetting entries under gains and losses on trading activities.

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

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

DZ BANK Group-wide disclosures

Information about geographical areas

Operating income was generated in the following geographical areas:

€ million	2021	2020
Germany	6,394	5,320
Rest of Europe	837	786
Rest of World	192	206
Consolidation/reconciliation	-182	-153
Total	**7,241**	**6,159**

Information on geographical areas is presented according to the home countries of the companies included in the consolidated financial statements.

This information does not include the separate disclosure of certain non-current (largely tangible) assets because these assets are of minor significance in the DZ BANK Group’s business model.

Information about products and services

Information on products and services is included in the income statement disclosures below.

» 34 Net interest income

€ million	2021	2020
INTEREST INCOME AND CURRENT INCOME AND EXPENSE	**4,236**	**5,059**
Interest income from	**4,174**	**4,978**
Lending and money market business	4,523	5,067
of which relating to mortgage loans	950	975
of which relating to home savings loans advanced by building society	1,064	1,067
of which relating to pass-through loans	565	608
of which relating to registered securities	254	310
of which relating to finance leases	33	47
Bonds and other fixed-income securities	341	519
Portfolio hedges of interest-rate risk	-381	-414
Financial assets with a negative effective interest rate	-308	-188
Other assets	-1	-7
Current income and expense from	**62**	**82**
Shares and other variable-yield securities	26	22
of which income from other shareholdings	16	13
Investments in subsidiaries	8	7
Investments in associates	1	1
Operating leases	-	-3
Entities accounted for using the equity method	19	49
of which relating to investments in joint ventures	28	39
of which relating to investments in associates	-9	10
Income from profit-pooling, profit-transfer and partial profit-transfer agreements	7	6
INTEREST EXPENSE ON	**-1,451**	**-2,373**
Deposits from banks and customers	-1,934	-2,251
of which relating to home savings deposits	-846	-984
Debt certificates issued including bonds	-209	-453
Subordinated capital	-71	-62
Portfolio hedges of interest-rate risk	50	45
Financial liabilities with a positive effective interest rate	717	357
Provisions and other liabilities	-5	-9
Total	**2,785**	**2,686**

The interest income from other assets included gains from non-credit-risk-related modifications of €3 million (2020: €0 million) and losses from non-credit-risk-related modifications of €4 million (2020: €7 million), such gains and losses resulting from financial assets. The interest expense on provisions and other liabilities included interest expense on lease liabilities of €3 million (2020: €3 million).

» 35 Net fee and commission income

€ million	2021	2020
Fee and commission income	**5,521**	4,267
Securities business	4,410	3,307
Asset management	394	287
Payments processing including card processing	295	281
Lending business and trust activities	128	125
Financial guarantee contracts and loan commitments	67	60
International business	12	12
Building society operations	43	39
Other	171	156
Fee and commission expenses	**-2,586**	-2,146
Securities business	-1,798	-1,456
Asset management	-280	-194
Payments processing including card processing	-144	-134
Lending business	-74	-85
Financial guarantee contracts and loan commitments	-10	-10
Building society operations	-66	-72
Other	-212	-195
Total	**2,935**	2,121

In the reporting period, fee and commission income included revenue from contracts with customers pursuant to IFRS 15 in an amount of €5,512 million (2020: €4,258 million); see note 96.

» 36 Gains and losses on trading activities

€ million	2021	2020
Gains and losses on non-derivative financial instruments and embedded derivatives	**-298**	116
of which gains and losses on financial instruments designated as at fair value through profit or loss that are related to derivatives held for trading purposes	326	204
Gains and losses on derivatives	**310**	592
Gains and losses on exchange differences	**141**	-15
Total	**152**	693

Gains and losses on exchange differences included currency translation gains of €44 million on financial instruments not measured at fair value through profit or loss (2020: losses of €44 million).

» 37 Gains and losses on investments

€ million	2021	2020
Gains and losses on the disposal of bonds and other fixed-income securities	**139**	71
Gains and losses on the disposal of shares and other variable-yield securities	**2**	-2
Gains and losses on the disposal of investments in subsidiaries	**-**	6
Gains and losses on investments in joint ventures	**-5**	6
Disposals	-	-1
Transitional accounting	-	7
Impairment losses	-9	-33
Reversals of impairment losses	4	33
Gains and losses on investments in associates	**109**	85
Disposals	128	37
Transitional accounting	-	48
Impairment losses	-20	-4
Reversals of impairment losses	-	4
Total	**245**	166

In 2020, further shares had been acquired in ZBI GmbH, Erlangen, (formerly ZBI Partnerschaftsholding GmbH, Erlangen) as part of a business combination achieved in stages. At that time, the company was accounted for using the equity method. It has been fully consolidated since control was obtained. The net gain resulting from transitional accounting amounted to €48 million. Further shares in GMS Holding GmbH, Paderborn, had also been acquired in 2020. The investment in the joint venture, which had been accounted for using the equity method at that time, has been measured at fair value through profit or loss since control was obtained. This led to a net gain resulting from transitional accounting of €7 million.

» 38 Other gains and losses on valuation of financial instruments

€ million	2021	2020
Gains and losses from fair value hedge accounting	**20**	41
Gains and losses on derivatives used for purposes other than trading	**58**	-173
Gains and losses on financial instruments designated as at fair value through profit or loss	**111**	70
Gains and losses on non-derivative financial instruments and embedded derivatives that are not related to derivatives held for trading purposes	136	30
Gains and losses on derivatives	-25	40
Gains and losses on financial assets mandatorily measured at fair value through profit or loss	**52**	-
Total	**242**	-62

Gains and losses on derivatives used for purposes other than trading result from the recognition and measurement of derivatives that are used for economic hedging but are not included in hedge accounting and/or are not related to financial instruments designated as at fair value through profit or loss.

» 39 Gains and losses from the derecognition of assets measured at amortized cost

€ million	2021	2020
Gains from the derecognition of financial assets measured at amortized cost	**16**	**12**
Loans and advances to banks and customers	4	5
Investments	11	7
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	1	-
Losses on derecognition of financial assets measured at amortized cost	**-16**	**-14**
Loans and advances to banks and customers	-2	-
Investments	-2	-2
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-12	-12
Total	**-**	**-2**

The derecognition of financial assets measured at amortized cost was primarily attributable to the sale of impaired loans and advances to customers and early redemptions at the request of customers.

» 40 Premiums earned

€ million	2021	2020
Net premiums written	**18,982**	**18,754**
Gross premiums written	19,184	18,952
Reinsurance premiums ceded	-202	-198
Change in provision for unearned premiums	**11**	**-13**
Gross premiums	21	-14
Reinsurers' share	-10	1
Total	**18,994**	**18,741**

» 41 Gains and losses on investments held by insurance companies and other insurance company gains and losses

€ million	2021	2020
Income from investments held by insurance companies	**8,471**	**8,691**
Interest income and current income	2,266	2,270
Income from reversals of impairment losses and reversals of loss allowances, and unrealized gains	1,133	346
Gains on valuation through profit or loss of investments held by insurance companies	4,389	4,857
Gains on disposals	683	1,218
Expenses in connection with investments held by insurance companies	**-3,035**	**-6,962**
Administrative expenses	-203	-179
Depreciation/amortization expense, additions to loss allowances, and impairment losses and unrealized losses	-448	-1,252
Losses on valuation through profit or loss of investments held by insurance companies	-1,768	-4,310
Losses on disposals	-617	-1,220
Expenses from the transfer of losses	-	-1
Other gains and losses of insurance companies	**-184**	**318**
Other insurance gains and losses	355	296
Other non-insurance gains and losses	-539	22
Total	**5,251**	**2,047**

Other non-insurance gains and losses included interest expenses on lease liabilities amounting to €1 million (2020: €1 million).

Income from and expenses in connection with investments held by insurance companies and other gains and losses of insurance companies included currency translation losses of €206 million on financial instruments not measured at fair value through profit or loss (2020: gains of €139 million).

Income from and expenses in connection with investments held by insurance companies included additions to loss allowances of €69 million (2020: €82 million) and reversals of loss allowances of €77 million (2020: €23 million).

Around €8 million of the income from the reversal of loss allowances (2020: addition of €46 million) arose because the anticipated macroeconomic conditions in connection with the COVID-19 pandemic were included in the calculation, in particular by adjusting the model-based default probability profiles (referred to as shift factors), and thus taken into account when determining the expected losses. In the event of an extreme weighting of 100 percent for both the baseline scenario and the risk scenario underlying the calculation of loss allowances, the reversal of loss allowances required because of the pandemic would increase by approximately 5 percent (2020: reduction of 0 percent in the additions to loss allowances required) and reduce by approximately 26 percent (2020: increase of 2 percent in the additions to loss allowances required) respectively.

» 42 Insurance benefit payments

€ million	2021	2020
EXPENSES FOR CLAIMS	**-12,412**	-12,122
Payments for claims	**-11,481**	-10,745
Gross payments for claims	-11,679	-10,807
Reinsurers' share	198	62
Change in the provision for claims outstanding	**-931**	-1,377
Gross change in the provision for claims outstanding	-1,576	-1,394
Reinsurers' share	645	17
CHANGE IN THE BENEFIT RESERVE AND IN OTHER INSURANCE LIABILITIES	**-7,291**	-5,107
Change in the benefit reserve	**-7,282**	-5,116
Gross change in the benefit reserve	-7,290	-5,130
Reinsurers' share	8	14
Change in other insurance liabilities	**-9**	9
EXPENSES FOR PREMIUM REFUNDS	**-653**	-270
Gross expenses for premium refunds	-588	-503
Expenses for deferred premium refunds	-64	233
Total	**-20,356**	**-17,499**

Net reinsurance income amounted to €670 million (2020: net expense of €78 million).

Claims rate trend for direct non-life insurance business including claim settlement costs

Gross claims provisions in direct business and payments made against the original provisions:

€ million	**2021**	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
At the end of the year	5,782	4,845	4,716	4,551	4,276	4,173	3,856	3,634	3,901	3,345	3,341
1 year later		4,507	4,606	4,471	4,142	4,103	3,767	3,523	3,847	3,336	3,359
2 years later			4,519	4,405	4,067	4,046	3,682	3,457	3,769	3,247	3,279
3 years later				4,409	4,021	4,020	3,647	3,389	3,731	3,220	3,254
4 years later					4,017	3,980	3,625	3,382	3,696	3,189	3,241
5 years later						3,980	3,624	3,389	3,691	3,198	3,250
6 years later							3,549	3,329	3,626	3,126	3,183
7 years later								3,310	3,616	3,118	3,172
8 years later									3,603	3,108	3,165
9 years later										3,098	3,153
10 years later											3,144
Settlements	**-**	**338**	**197**	**142**	**259**	**193**	**307**	**324**	**298**	**247**	**197**

Net claims provisions in direct business and payments made against the original provisions:

€ million	**2021**	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
At the end of the year	5,750	4,787	4,702	4,518	4,255	4,110	3,827	3,574	3,669	3,313	3,298
1 year later		4,455	4,589	4,438	4,118	4,050	3,736	3,460	3,613	3,300	3,317
2 years later			4,502	4,373	4,044	3,994	3,655	3,393	3,533	3,211	3,236
3 years later				4,376	3,999	3,965	3,624	3,331	3,490	3,180	3,208
4 years later					3,995	3,928	3,601	3,361	3,465	3,139	3,194
5 years later						3,929	3,602	3,369	3,670	3,166	3,191
6 years later							3,526	3,309	3,605	3,095	3,144
7 years later								3,290	3,594	3,087	3,134
8 years later									3,581	3,076	3,127
9 years later										3,066	3,115
10 years later											3,106
Settlements	**-**	**332**	**200**	**142**	**260**	**181**	**301**	**284**	**88**	**247**	**192**

Claims rate trend for inward reinsurance business

Gross claims provisions in inward reinsurance business and payments made against the original provisions:

€ million	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Gross provisions for claims outstanding	**5,704**	**5,009**	**4,411**	**3,642**	**3,197**	**2,718**	**2,433**	**1,976**	**1,710**	**1,506**	**1,409**
Cumulative payments for the year concerned and prior years											
1 year later		1,240	1,082	955	852	569	622	464	481	385	463
2 years later			1,627	1,396	1,237	852	867	783	685	630	640
3 years later				1,674	1,482	1,062	1,022	919	897	764	345
4 years later					1,660	1,189	1,154	1,026	987	930	891
5 years later						1,294	1,249	1,117	1,051	996	1,029
6 years later							1,315	1,171	1,114	1,035	1,072
7 years later								1,214	1,155	1,085	1,103
8 years later									1,185	1,117	1,140
9 years later										1,139	1,161
10 years later											1,177
Gross provisions for claims outstanding and payments made against the original provision											
At the end of the year	5,704	5,009	4,411	3,642	3,197	2,718	2,433	1,976	1,710	1,506	1,409
1 year later		5,373	4,313	3,951	3,392	2,654	2,434	2,157	1,840	1,593	1,536
2 years later			4,373	3,651	3,315	2,561	2,271	2,004	1,859	1,569	1,472
3 years later				3,733	3,131	2,486	2,224	1,915	1,779	1,628	1,014
4 years later					3,166	2,361	2,179	1,887	1,720	1,580	1,528
5 years later						2,363	2,088	1,848	1,699	1,550	1,501
6 years later							2,096	1,779	1,677	1,536	1,486
7 years later								1,794	1,627	1,526	1,481
8 years later									1,636	1,490	1,468
9 years later										1,499	1,444
10 years later											1,452
Settlements	**-**	**-364**	**38**	**-91**	**31**	**355**	**337**	**182**	**74**	**7**	**-43**

Net claims provisions in inward reinsurance business and payments made against the original provisions:

€ million	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Net provisions for claims outstanding	**5,587**	**5,001**	**4,408**	**3,639**	**3,193**	**2,710**	**2,428**	**1,970**	**1,695**	**1,491**	**1,389**
Cumulative payments for the year concerned and prior years											
1 year later		1,235	1,082	955	851	567	622	464	473	383	461
2 years later			1,626	1,396	1,236	849	866	782	677	620	636
3 years later				1,674	1,480	1,058	1,020	918	888	754	333
4 years later					1,658	1,186	1,153	1,025	978	919	878
5 years later						1,290	1,247	1,115	1,042	985	1,016
6 years later							1,313	1,170	1,105	1,024	1,059
7 years later								1,212	1,146	1,074	1,090
8 years later									1,175	1,105	1,126
9 years later										1,128	1,147
10 years later											1,163
Net provisions for claims outstanding and payments made against the original provision											
At the end of the year	5,587	5,001	4,408	3,639	3,193	2,710	2,428	1,970	1,695	1,491	1,389
1 year later		5,365	4,310	3,950	3,388	2,648	2,429	2,152	1,827	1,576	1,519
2 years later			4,370	3,649	3,312	2,555	2,267	1,999	1,845	1,554	1,454
3 years later				3,732	3,129	2,482	2,219	1,911	1,766	1,612	997
4 years later					3,163	2,356	2,176	1,883	1,708	1,566	1,510
5 years later						2,358	2,086	1,845	1,687	1,536	1,484
6 years later							2,093	1,777	1,666	1,522	1,470
7 years later								1,791	1,616	1,513	1,464
8 years later									1,625	1,477	1,453
9 years later										1,486	1,429
10 years later											1,437
Settlements	**-**	**-364**	**38**	**-93**	**30**	**352**	**335**	**179**	**70**	**5**	**-48**

» 43 Insurance business operating expenses

€ million	2021	2020
Gross expenses	-3,079	-2,945
Reinsurers' share	32	23
Total	**-3,047**	**-2,922**

» 44 Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business

The derecognition of financial assets measured at amortized cost in the insurance business gave rise to gains of €2 million (2020: €8 million) and losses of €2 million (2020: €28 million).

» 45 Loss allowances

€ million	2021	2020
Loss allowances for cash and cash equivalents	**-**	1
Additions	-	-8
Reversals	-	9
Loss allowances for loans and advances to banks	**22**	-12
Additions	-32	-30
Reversals	31	18
Recoveries on loans and advances to banks previously impaired	23	-
Loss allowances for loans and advances to customers	**71**	-610
Additions	-2,110	-2,419
Reversals	2,087	1,756
Directly recognized impairment losses	-38	-41
Recoveries on loans and advances to customers previously impaired	83	68
Other	49	26
Loss allowances for investments	**25**	-2
Additions	-26	-38
Reversals	50	36
Loss allowances for other assets	**1**	-2
Additions	-	-1
Directly recognized impairment losses	-	-1
Recoveries on other assets previously impaired	1	-
Other loss allowances for loans and advances	**1**	-53
Additions to and reversals of provisions for loan commitments	-18	-36
Additions to and reversals of provisions for financial guarantee contracts	19	-4
Additions to and reversals of other provisions for loans and advances	-	-13
Total	**120**	-678

Gains and losses from credit-risk-related modifications and other gains and losses on POCI assets are reported under the 'Other' line item. Other gains and losses on POCI assets consist of the changes in the loss allowances for these assets within the reporting period.

As a result of the quantitative transfer criterion being changed to the maximum value of 200 percent for assets whose credit risk has significantly increased since initial recognition (transfer from stage 1 to stage 2), but there being no objective evidence of impairment, an amount of €25 million was added to loss allowances.

Within the loss allowances for loans and advances to customers, there was an addition of €19 million owing to changes to the estimates for the risk parameters for measuring the probability of default and the loss given default in respect of loans in building society operations.

Also within the loss allowances for loans and advances to customers, there was a reversal of €105 million in respect of the consumer finance business due to changes to the estimates for the loss given default.

Of the net reversals of loss allowances for loans and advances to banks and customers, investments, and other lending business of €120 million (2020: net addition of €678 million), €10 million (2020: addition of €220 million) arose because the anticipated macroeconomic conditions in connection with the COVID-19 pandemic were included in the calculation, in particular by adjusting the model-based default probability profiles (referred to as shift factors), and thus taken into account when determining the expected losses. In the event of an extreme weighting of 100 percent for both the baseline scenario and the risk scenario underlying the calculation of loss allowances, the reversal of loss allowances required because of the pandemic would increase by approximately 2 percent (2020: reduction of approximately 3 percent in the additions to loss allowances required) and reduce by approximately 7 percent (2020: increase of approximately 11 percent in the additions to loss allowances required) respectively.

» 46 Administrative expenses

€ million	2021	2020
Staff expenses	**-2,021**	**-1,910**
Wages and salaries	-1,692	-1,590
Social security contributions	-217	-201
Pension and other post-employment benefit expenses	-101	-108
Expenses for share-based payment transactions	-10	-11
General and administrative expenses	**-1,941**	**-1,838**
Expenses for temporary staff	-24	-22
Contributions and fees	-288	-212
of which contributions to the resolution fund for CRR credit institutions	-134	-68
Consultancy	-439	-465
Office expenses	-163	-166
IT expenses	-552	-523
Property and occupancy costs	-103	-113
Information procurement	-88	-85
Public relations and marketing	-165	-143
Other general and administrative expenses	-115	-104
Expenses for administrative bodies	-5	-5
Depreciation and amortization	**-303**	**-288**
Property, plant and equipment, and investment property	-86	-85
Right-of-use assets	-84	-76
Other assets	-134	-127
Total	**-4,265**	**-4,036**

» 47 Other net operating income

€ million	2021	2020
Income from the reversal of provisions and accruals	86	116
Restructuring expenses	-78	-27
Gains and losses on non-current assets and disposal groups classified as held for sale	70	49
Expenses for other taxes	-20	-5
Impairment losses on goodwill	-2	-
Residual other net operating income	-15	77
Total	**42**	**210**

Gains and losses on non-current assets and disposal groups classified as held for sale included realized gains of €83 million on disposals (2020: €104 million), impairment losses of €14 million (2020: €81 million), and no reversals of impairment losses (2020: €26 million).

Restructuring expenses included additions of €36 million to provisions for termination benefits linked with restructuring (2020: €13 million).

Residual other net operating income included rental income from investment property of €10 million (2020: €13 million) and directly assignable expenses of €3 million for the management of investment property (2020: €3 million).

» 48 Income taxes

€ million	2021	2020
Current tax expense	-894	-529
Deferred tax income/expense	-26	57
Total	**-920**	**-472**

The total for current taxes includes income of €2 million (2020: €20 million) attributable to previous years. Deferred taxes include expenses of €29 million (2020: income of €86 million) related to temporary differences and their reversal.

Current taxes in relation to the German limited companies in the group are calculated using an effective corporation tax rate of 15.825 percent based on a corporation tax rate of 15.0 percent plus the solidarity surcharge. The tax rate applied in 2021 was unchanged from the rate used in 2020. The effective rate of trade tax for DZ BANK and subsidiaries that are members of its tax group was unchanged on the previous year at 15.435 percent.

Deferred taxes must be calculated using tax rates expected to apply when the tax asset is recovered or liability settled. The tax rates used are therefore those that are valid or have been announced for the periods in question as at the balance sheet date.

The following table shows a reconciliation from expected income taxes to recognized income taxes based on application of the current tax law in Germany:

€ million	2021	2020
Profit before taxes	**3,096**	**1,445**
Group income tax rate	31.260%	31.260%
Expected income taxes	**-968**	**-452**
Income tax effects	**48**	**-20**
Impact of tax-exempt income and non-deductible expenses	4	-6
Adjustments resulting from other types of income tax, other trade tax multipliers, and changes in tax rates	11	20
Tax rate differences on income subject to taxation in other countries	13	-1
Current and deferred taxes relating to prior years	-6	19
Change in impairment losses on deferred tax assets	42	-30
Other effects	-17	-22
Recognized income taxes	**-920**	**-472**

» 49 Items reclassified to the income statement

The following amounts were recognized in other comprehensive income/loss or reclassified from other comprehensive income/loss to the income statement in the reporting period:

€ million	2021	2020
Gains and losses on debt instruments measured at fair value through other comprehensive income	**-1,389**	1,143
Gains (+)/losses (-) arising during the reporting period	-1,175	1,391
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-213	-248
Exchange differences on currency translation of foreign operations	**-16**	-32
Gains (+)/losses (-) arising during the reporting period	15	-32
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-30	-
Gains and losses on hedges of net investments in foreign operations	**5**	3
Gains (+)/losses (-) arising during the reporting period	-	3
Gains (-)/losses (+) reclassified to the income statement during the reporting period	5	-
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	**15**	-6
Gains (+)/losses (-) arising during the reporting period	15	-6

» 50 Income taxes relating to components of other comprehensive income

The table below shows the income taxes on the various components of other comprehensive income:

	2021			2020		
€ million	Amount before taxes	Income taxes	Amount after taxes	Amount before taxes	Income taxes	Amount after taxes
Items that may be reclassified to the income statement	**-1,385**	**445**	**-941**	**1,108**	**-360**	**748**
Gains and losses on debt instruments measured at fair value through other comprehensive income	-1,389	448	-941	1,143	-362	781
Exchange differences on currency translation of foreign operations	-16	-3	-19	-32	3	-29
Gains and losses on hedges of net investments in foreign operations	5	-	5	3	-1	2
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	15	-	15	-6	-	-6
Items that will not be reclassified to the income statement	**603**	**-62**	**541**	**-276**	**49**	**-227**
Gains and losses on equity instruments for which the fair value OCI option has been exercised	473	-33	440	-97	9	-88
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	39	-12	27	-60	18	-42
Gains and losses arising from remeasurement of defined benefit plans	90	-17	73	-119	22	-97
Total	**-782**	**382**	**-400**	**832**	**-311**	**521**

D Balance sheet disclosures

» 51 Cash and cash equivalents

€ million	Dec. 31, 2021	Dec. 31, 2020
Cash on hand	266	206
Balances with central banks	85,763	68,148
Total	**86,029**	**68,354**

The average target minimum reserve for 2021 was €3,869 million (2020: €3,829 million).

» 52 Loans and advances to banks

	Repayable on demand		Other loans and advances		Total	
€ million	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020
Domestic banks	**3,310**	4,488	**96,627**	89,789	**99,937**	94,277
Affiliated banks	1,506	1,667	92,528	84,711	94,034	86,378
Other banks	1,804	2,821	4,099	5,078	5,903	7,899
Foreign banks	**3,973**	5,290	**3,750**	3,453	**7,723**	8,743
Total	**7,284**	**9,778**	**100,375**	**93,242**	**107,659**	**103,020**

The following table shows the breakdown of loans and advances to banks by type of business:

€ million	Dec. 31, 2021	Dec. 31, 2020
Mortgage loans	126	131
Finance leases	1	-
Registered securities	9,649	9,094
Pass-through loans	65,690	58,733
Other bank loans	17,450	16,103
Money market placements	11,156	15,413
Current account debit balances	2,905	2,896
Other loans and advances	684	650
Total	**107,659**	**103,020**

» 53 Loans and advances to customers

€ million	Dec. 31, 2021	Dec. 31, 2020
Loans and advances to domestic customers	169,717	164,071
Loans and advances to foreign customers	25,948	26,223
Total	**195,665**	**190,294**

The following table shows the breakdown of loans and advances to customers by type of business:

€ million	Dec. 31, 2021	Dec. 31, 2020
Mortgage loans	56,192	53,784
Ship mortgage loans	54	341
Home savings loans advanced by building society	60,439	55,698
Finance leases	751	1,096
Registered securities	8,319	9,604
Pass-through loans	7,532	7,147
Other bank loans	43,032	43,307
Money market placements	4,431	3,439
Current account debit balances	5,259	4,703
Other loans and advances	9,655	11,175
Total	**195,665**	**190,294**

» 54 Hedging instruments (positive fair values)

Hedging instruments (positive fair values) amounted to €389 million (December 31, 2020: €161 million) and, as had been the case a year earlier, resulted solely from derivatives used as fair value hedges.

» 55 Financial assets held for trading

€ million	Dec. 31, 2021	Dec. 31, 2020
DERIVATIVES (POSITIVE FAIR VALUES)	**16,188**	**22,246**
Interest-linked contracts	13,478	19,431
Currency-linked contracts	1,481	1,758
Share-/index-linked contracts	847	719
Other contracts	2	1
Credit derivatives	380	337
BONDS AND OTHER FIXED-INCOME SECURITIES	**10,964**	**10,488**
Money market instruments	140	373
Bonds	10,824	10,115
SHARES AND OTHER VARIABLE-YIELD SECURITIES	**1,752**	**1,444**
Shares	1,750	1,444
Investment fund units	2	-
RECEIVABLES	**18,417**	**8,611**
of which from affiliated banks	24	152
of which from other banks	17,325	7,821
Money market placements	**17,127**	**7,412**
with banks	16,575	7,197
with customers	553	215
Promissory notes and registered bonds	**1,290**	**1,199**
from banks	774	776
from customers	516	423
Total	**47,321**	**42,788**

» 56 Investments

€ million	Dec. 31, 2021	Dec. 31, 2020
Bonds and other fixed-income securities	**49,125**	**57,423**
Money market instruments	488	519
Bonds	48,637	56,904
Shares and other variable-yield securities	**2,587**	**2,071**
Shares and other shareholdings	494	324
Investment fund units	2,080	1,735
Other variable-yield securities	13	12
Investments in subsidiaries	**305**	**297**
Investments in joint ventures	**349**	**329**
Investments in associates	**75**	**112**
Total	**52,440**	**60,232**

The carrying amount of investments in joint ventures accounted for using the equity method totaled €349 million (December 31, 2020: €329 million). €72 million of the investments in associates has been accounted for using the equity method (December 31, 2020: €112 million).

» 57 Investments held by insurance companies

€ million	Dec. 31, 2021	Dec. 31, 2020
Investment property	3,813	3,835
Investments in subsidiaries	901	831
Investments in joint ventures	21	19
Investments in associates	1	-
Mortgage loans	13,005	10,882
Promissory notes and loans	7,202	7,050
Registered bonds	8,510	9,081
Other loans	968	863
Variable-yield securities	13,742	11,639
Fixed-income securities	61,445	61,540
Derivatives (positive fair values)	199	553
Loss allowances	-	-23
Deposits with ceding insurers and other investments	594	578
Assets related to unit-linked contracts	18,730	14,820
Total	**129,131**	**121,668**

The fair value of investment property was €5,342 million as at the balance sheet date (December 31, 2020: €5,178 million).

Some investment property has been pledged as collateral and is subject to restrictions on disposal, the total furnished collateral value of the property being €1,397 million (December 31, 2020: €1,438 million). The group also has capital expenditure commitments amounting to €87 million (December 31, 2020: €119 million). A total of €35 million was spent on the repair and maintenance of investment property in 2021 (2020: €38 million). Vacant property resulted in repair and maintenance expenses of €3 million (2020: €2 million).

The table below shows the changes in loss allowances for investments held by insurance companies in the financial year.

€ million	Investments held by insurance companies			Total
	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2020	2	-	1	3
Additions	19	4	-	23
Reversals	-3	-	-	-3
Other changes	1	-1	-	-
Balance as at Dec. 31, 2020	19	3	1	23
Reversals	-20	-3	-	-23
Balance as at Dec. 31, 2021	-	-	-	-

» 58 Property, plant and equipment, investment property, and right-of-use assets

€ million	Dec. 31, 2021	Dec. 31, 2020
Land and buildings	888	884
Office furniture and equipment	178	179
Investment property	279	235
Right-of-use assets	537	446
Total	**1,881**	**1,744**

The fair value of investment property was €346 million as at the balance sheet date (December 31, 2020: €302 million). Payments in advance are allocated to the relevant item of property, plant and equipment.

» 59 Income tax assets and liabilities

€ million	Dec. 31, 2021	Dec. 31, 2020
Income tax assets	**1,141**	**898**
Current income tax assets	361	368
Deferred tax assets	780	531
Income tax liabilities	**1,456**	**1,229**
Current income tax liabilities	645	308
Deferred tax liabilities	811	921

In addition to deferred tax assets recognized for tax loss carryforwards, deferred tax assets and liabilities are also recognized for temporary differences in respect of the items shown below:

	Deferred tax assets		Deferred tax liabilities	
€ million	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020
Tax loss carryforwards	17	14		
Loans and advances to banks and customers	74	86	816	965
Financial assets and liabilities held for trading, hedging instruments (positive and negative fair values)	719	809	4	89
Investments	12	15	666	1,150
Loss allowances	205	229	-	2
Investments held by insurance companies	140	109	1,086	1,248
Property, plant and equipment, investment property, and right-of-use assets	14	24	213	197
Deposits from banks and customers	669	917	136	158
Debt certificates issued including bonds	80	210	23	-
Provisions for employee benefits and for share-based payment transactions	722	727	61	70
Other provisions	220	202	31	29
Insurance liabilities	83	74	52	49
Other balance sheet items	271	291	167	140
Total (gross)	3,224	3,707	3,255	4,098
Netting of deferred tax assets and deferred tax liabilities	-2,444	-3,177	-2,444	-3,177
Total (net)	**780**	**531**	**811**	**921**

Deferred tax assets for temporary differences and tax loss carryforwards are only recognized if it is sufficiently probable that the asset can be recovered in the future. No deferred tax assets have been recognized for corporation tax loss carryforwards amounting to €261 million (December 31, 2020: €332 million), which can be carried forward indefinitely, or for trade tax loss carryforwards amounting to €211 million (December 31, 2020: €211 million). There remained foreign loss carryforwards of €672 million (December 31, 2020: €1,043 million) for which no deferred tax assets are recognized. Of this total, €320 million will expire by 2031 and €352 million can be used indefinitely.

Overall, there was a net deferred tax liability recognized through other comprehensive income of €337 million (December 31, 2020: €717 million).

Deferred tax assets of €243 million (December 31, 2020: €254 million) and deferred tax liabilities of €254 million (December 31, 2020: €487 million) are expected to be realized only after a period of 12 months.

As at December 31, 2021, no deferred tax liabilities were recognized for temporary differences of €243 million (December 31, 2020: €307 million) relating to long-term equity investments in subsidiaries.

» 60 Other assets

€ million	Dec. 31, 2021	Dec. 31, 2020
Other assets held by insurance companies	4,481	3,416
Goodwill	155	140
Other intangible assets	522	546
of which software	419	442
of which acquired customer relationships	63	65
Other loans and advances	459	360
Residual other assets	874	1,054
Total	**6,490**	**5,516**

Other intangible assets include internally generated intangible assets amounting to €23 million (December 31, 2020: €14 million).

The breakdown of other assets held by insurance companies is as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
Intangible assets	**151**	**157**
Reinsurers' share of insurance liabilities	**782**	**149**
Provision for unearned premiums	2	12
Benefit reserve	37	39
Provision for claims outstanding	743	98
Receivables	**1,703**	**1,604**
Receivables arising out of direct insurance operations	467	428
Receivables arising out of reinsurance operations	384	294
Other receivables	851	882
Credit balances with banks, checks and cash on hand	**702**	**357**
Property, plant and equipment	**408**	**427**
Land and buildings	277	297
Office furniture and equipment	62	64
Right-of-use assets held by insurance companies	69	66
Residual other assets	**736**	**724**
Prepaid expenses	64	82
Remaining assets held by insurance companies	673	642
Loss allowances	**-2**	**-2**
Total	**4,481**	**3,416**

The intangible assets in the other assets held by insurance companies include internally generated intangible assets amounting to €16 million (December 31, 2020: €8 million).

Trustee's blocking notes have been entered in the land register for land and buildings held by companies offering personal insurance of €153 million (December 31, 2020: €165 million).

The following tables show the reinsurers' share of the changes in insurance liabilities:

REINSURERS' SHARE OF THE CHANGES IN THE PROVISION FOR UNEARNED PREMIUMS

€ million	2021	2020
Balance as at Jan. 1	12	11
Additions	9	18
Utilizations/reversals	-19	-17
Balance as at Dec. 31	**2**	**12**

REINSURERS' SHARE OF THE CHANGES IN THE BENEFIT RESERVE

€ million	2021	2020
Balance as at Jan. 1	39	38
Additions	2	2
Utilizations/reversals	-4	-1
Balance as at Dec. 31	**37**	**39**

REINSURERS' SHARE OF THE CHANGES IN THE PROVISION FOR CLAIMS OUTSTANDING

€ million	2021	2020
Balance as at Jan. 1	98	81
Claims expenses	833	72
less payments	-188	-55
Balance as at Dec. 31	**743**	**98**

The breakdown of maturities for the reinsurers' share of insurance liabilities is shown in the following tables:

AS AT DECEMBER 31, 2021

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	1	-	1	-
Benefit reserve	-	2	15	20
Provision for claims outstanding	156	478	109	-
Total	**157**	**480**	**125**	**20**

AS AT DECEMBER 31, 2020

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	8	2	2	-
Benefit reserve	-	2	13	24
Provision for claims outstanding	40	28	30	-
Total	**48**	**32**	**45**	**24**

» 61 Loss allowances

Loss allowances for loans and advances to banks and for loans and advances to customers also comprise the loss allowances recognized for finance lease receivables.

The following table shows the changes in loss allowances, which are reported on the assets side of the balance sheet, broken down by individual balance sheet item:

	Cash and cash equivalents	Loans and advances to banks			Loans and advances to customers			
€ million	Stage 1	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	POCI assets
Balance as at Jan. 1, 2020	1	7	-	5	202	203	1,807	1
Additions	8	22	5	3	314	732	1,355	16
Utilizations	-	-	-	-	-	-1	-604	-1
Reversals	-9	-15	-1	-2	-412	-350	-977	-16
Other changes	-	-	-1	-	142	-248	80	7
Balance as at Dec. 31, 2020	-	14	3	6	246	336	1,661	7
Additions	-	24	1	7	281	697	1,113	19
Utilizations	-	-	-	-	-	-1	-438	-
Reversals	-	-24	-3	-5	-455	-413	-1,202	-16
Other changes	-	-	-	-	192	-254	134	3
Balance as at Dec. 31, 2021	**-**	**14**	**2**	**8**	**264**	**364**	**1,267**	**13**

	Investments			Other assets	Total
€ million	Stage 1	Stage 2	Stage 3	Stage 1	
Balance as at Jan. 1, 2020	6	26	18	1	2,277
Additions	4	21	4	1	2,485
Utilizations	-	-	-	-	-606
Reversals	-15	-12	-5	-	-1,814
Other changes	11	-13	-	-	-22
Balance as at Dec. 31, 2020	6	22	17	2	2,320
Additions	6	14	-	-	2,162
Utilizations	-	-	-1	-	-440
Reversals	-24	-8	-12	-	-2,162
Other changes	14	-14	1	-	76
Balance as at Dec. 31, 2021	**4**	**13**	**5**	**2**	**1,956**

» 62 Changes in non-current assets

The following table shows the changes in investment property included in the investments held by insurance companies, the changes in property, plant and equipment, and investment property, and the changes in intangible assets included in other assets:

	Investments held by insurance companies
€ million	Investment property
Carrying amounts as at Jan. 1, 2020	3,558
Cost as at Jan. 1, 2020	4,124
Additions	393
Additions in respect of borrowing costs eligible for capitalization	1
Reclassifications	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-9
Disposals	-3
Changes attributable to currency translation	-
Changes in scope of consolidation	-
Cost as at Dec. 31, 2020	**4,506**
Reversals of impairment losses as at Jan. 1, 2020	26
Additions	1
Disposals	-
Reversals of impairment losses as at Dec. 31, 2020	**27**
Depreciation/amortization and impairment losses as at Jan. 1, 2020	-592
Depreciation/amortization expense for the year	-78
Impairment losses for the year	-29
Reclassifications	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-
Disposals	1
Changes attributable to currency translation	-
Changes in scope of consolidation	-
Depreciation/amortization and impairment losses as at Dec. 31, 2020	**-698**
Carrying amounts as at Dec. 31, 2020	3,835
Cost as at Jan. 1, 2021	4,506
Additions	63
Additions in respect of borrowing costs eligible for capitalization	1
Reclassifications	4
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-
Disposals	-3
Changes attributable to currency translation	-
Changes in scope of consolidation	-
Cost as at Dec. 31, 2021	**4,571**
Reversals of impairment losses as at Jan. 1, 2021	27
Additions	-
Disposals	-
Reversals of impairment losses as at Dec. 31, 2021	**27**
Depreciation/amortization and impairment losses as at Jan. 1, 2021	-698
Depreciation/amortization expense for the year	-85
Impairment losses for the year	-
Reclassifications	-3
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-
Disposals	1
Changes attributable to currency translation	-
Changes in scope of consolidation	-
Depreciation/amortization and impairment losses as at Dec. 31, 2021	**-785**
Carrying amounts as at Dec. 31, 2021	3,813

	Property, plant and equipment, and investment property				Other assets	
	Land and buildings	Office furniture and equipment	Assets subject to operating leases	Investment property	Goodwill	Other intangible assets
	917	182	17	238	41	462
	1,326	539	74	266	269	1,811
	31	56	-	2	-	151
	-	-	-	-	-	-
	1	-	-	-1	-	-
	-72	-3	-	-	-	-
	-6	-46	-61	-	-	-15
	-	-2	3	-	-	-3
	-	4	-	-	99	66
	1,280	**548**	**16**	**267**	**368**	**2,010**
	13	-	81	5	-	5
	-	-	-	-	-	1
	-	-	-	-	-	-5
	13	**-**	**81**	**5**	**-**	**1**
	-422	-357	-138	-33	-228	-1,354
	-24	-56	-5	-4	-	-127
	-	-	-1	-	-	-
	-	-	-	-	-	-
	31	2	-	-	-	-
	6	43	49	-	-	16
	-	1	-2	-	-	1
	-	-2	-	-	-	-1
	-409	**-369**	**-97**	**-37**	**-228**	**-1,465**
	884	179	-	235	140	546
	1,280	548	16	267	368	2,010
	27	57	-	52	-	112
	-	-	-	-	-	-
	1	-	-	-	-	-
	-	-	-	-	-	-
	-3	-33	-	-	-	-46
	-	-	-	-	-	-
	-	-1	-	-	17	2
	1,305	**571**	**16**	**319**	**385**	**2,078**
	13	-	81	5	-	1
	-	-	-	-	-	3
	-	-	-	-	-	-
	13	**-**	**81**	**5**	**-**	**4**
	-409	-369	-97	-37	-228	-1,465
	-25	-56	-	-5	-	-137
	-	-	-	-2	-2	-1
	1	-	-	-1	-	-
	-	-	-	-	-	-
	3	31	-	-	-	44
	-	-	-	-	-	-1
	-	1	-	-	-	-
	-430	**-393**	**-97**	**-45**	**-230**	**-1,560**
	888	**178**	**-**	**279**	**155**	**522**

€ million	Other assets of which other assets held by insurance companies Land and buildings	Office furniture and equipment	Intangible assets
Carrying amounts as at Jan. 1, 2020	308	61	157
Cost as at Jan. 1, 2020	523	183	675
Additions	1	24	45
Additions in respect of borrowing costs eligible for capitalization	-	-	-
Reclassifications	-	-	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-	-	-
Disposals	-	-10	-3
Changes attributable to currency translation	-	-	-
Changes in scope of consolidation	-	-	-
Cost as at Dec. 31, 2020	**523**	**196**	**717**
Reversals of impairment losses as at Jan. 1, 2020	10	-	-
Additions	-	-	-
Disposals	-	-	-
Reversals of impairment losses as at Dec. 31, 2020	**10**	**-**	**-**
Depreciation/amortization and impairment losses as at Jan. 1, 2020	-225	-122	-518
Depreciation/amortization expense for the year	-11	-20	-44
Impairment losses for the year	-	-	-
Reclassifications	-	-	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-	-	-
Disposals	-	10	2
Changes attributable to currency translation	-	-	-
Changes in scope of consolidation	-	-	-
Depreciation/amortization and impairment losses as at Dec. 31, 2020	**-236**	**-132**	**-560**
Carrying amounts as at Dec. 31, 2020	297	64	157
Cost as at Jan. 1, 2021	523	196	717
Additions	3	19	38
Additions in respect of borrowing costs eligible for capitalization	-	-	-
Reclassifications	-4	-	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-22	-	-
Disposals	-	-6	-21
Changes attributable to currency translation	-	-	-
Changes in scope of consolidation	-	-	-
Cost as at Dec. 31, 2021	**500**	**209**	**734**
Reversals of impairment losses as at Jan. 1, 2021	10	-	-
Additions	-	-	-
Disposals	-	-	-
Reversals of impairment losses as at Dec. 31, 2021	**10**	**-**	**-**
Depreciation/amortization and impairment losses as at Jan. 1, 2021	-236	-132	-560
Depreciation/amortization expense for the year	-11	-21	-44
Impairment losses for the year	-	-	-
Reclassifications	3	-	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	12	-	-
Disposals	-	5	21
Changes attributable to currency translation	-	-	-
Changes in scope of consolidation	-	-	-
Depreciation/amortization and impairment losses as at Dec. 31, 2021	**-233**	**-148**	**-583**
Carrying amounts as at Dec. 31, 2021	**277**	**62**	**151**

In 2021, the useful life of the assets ranged from 4 to 59 years for buildings (2020: 2 to 60 years) and from 1 to 25 years for office furniture and equipment (2020: 1 to 25 years). The useful life for investment property was 2 to 80 years (2020: 3 to 80 years). Software included in other intangible assets was amortized over a useful life of 1 to 12 years (2020: 1 to 12 years) while acquired customer relationships were amortized over 10 to 20 years (2020: 10 to 20 years). Depreciation and amortization are recognized on a straight-line basis over the useful life of the asset.

The assets subject to an operating lease comprised office furniture and equipment.

Payments in advance are allocated to the relevant item of property, plant and equipment.

In 2021, borrowing costs relating to investment property held by insurance companies were capitalized in an amount of €1 million (2020: €1 million). The capitalization rate used for borrowing costs was 1.06 percent for investment property held by insurance companies (2020: 1.33 percent).

Disclosures regarding the changes in goodwill are included in note 94.

Other intangible assets include acquired customer relationships amounting to €63 million (December 31, 2020: €65 million). The associated amortization expense came to €4 million (2020: €1 million).

The changes in right-of-use assets are described in note 95.

» 63 Non-current assets and disposal groups classified as held for sale

The non-current assets and disposal groups classified as held for sale include assets and liabilities from disposal groups not qualifying as discontinued operations, as described below. Gains and losses arising from the classification of assets and disposal groups as held for sale are reported under other net operating income.

At the level of the DVB subgroup, minor parts of the credit portfolio of the aviation finance business, which had previously constituted a disposal group not qualifying as a discontinued operation, were sold in 2021. The disposal gave rise to a net gain of €15 million, which was recognized under other net operating income. The impairment loss requirement of €5 million identified for this disposal group was also recognized under other net operating income. As at December 31, 2021, assets of €8 million were still recognized in this disposal group. The disposal of the remaining assets is expected to take place in 2022.

In addition, a previously fully consolidated subsidiary was classified as a disposal group not qualifying as a discontinued operation in 2021. Assets of €131 million and liabilities of €2 million are recognized in this disposal group. The sale of this disposal group is expected to take place in 2022.

The disposal group not qualifying as a discontinued operation, which had been classified as such since 2019, and consisted of associates, joint ventures, and fully consolidated subsidiaries of the DVB subgroup, was sold in 2021. The disposal gave rise to a net gain of €13 million, which was recognized under other net operating income.

Furthermore, a receivable that had been recognized as an individual asset classified as held for sale in the DVB subgroup as at December 31, 2020 was sold. The gain on disposal of €6 million was reported under other net operating income.

Another disposal group not qualifying as a discontinued operation contains receivables and an associate. The sale of this disposal group is expected to take place in 2022.

The individual non-current assets classified as held for sale as at December 31, 2020 were sold in 2021. The resulting gain of €49 million was reported under other net operating income.

» 64 Deposits from banks

	Repayable on demand		With agreed maturity or notice period		Total	
€ million	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020
Domestic banks	**56,372**	59,958	**131,426**	109,573	**187,798**	169,531
Affiliated banks	52,196	56,001	22,254	21,285	74,450	77,286
Other banks	4,176	3,957	109,172	88,288	113,348	92,245
Foreign banks	**3,290**	2,974	**5,474**	5,347	**8,764**	8,321
Total	**59,662**	**62,932**	**136,900**	**114,920**	**196,562**	**177,852**

The following table shows the breakdown of deposits from banks by type of business:

€ million	Dec. 31, 2021	Dec. 31, 2020
Home savings deposits	1,567	1,576
Money market deposits	49,072	34,140
Other deposits	145,923	142,136
Total	**196,562**	**177,852**

» 65 Deposits from customers

	Repayable on demand		With agreed maturity or notice period		Total	
€ million	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020
Domestic customers	24,628	21,522	91,030	94,680	115,658	116,202
Foreign customers	13,262	11,563	10,055	6,160	23,317	17,723
Total	**37,889**	**33,085**	**101,086**	**100,840**	**138,975**	**133,925**

The following table shows the breakdown of deposits from customers by type of business:

€ million	Dec. 31, 2021	Dec. 31, 2020
Home savings deposits	66,194	64,673
Money market deposits	14,886	13,407
Other deposits	57,895	55,845
Total	**138,975**	**133,925**

» 66 Debt certificates issued including bonds

€ million	Dec. 31, 2021	Dec. 31, 2020
Bonds issued	**67,086**	**62,838**
Mortgage Pfandbriefe	27,472	25,364
Public-sector Pfandbriefe	1,657	1,764
Other bonds	37,957	35,710
Other debt certificates issued	**12,566**	**7,662**
Total	**79,652**	**70,500**

As was the case a year earlier, all other debt certificates issued are commercial paper.

» 67 Hedging instruments (negative fair values)

Hedging instruments (negative fair values) amounted to €1,678 million (December 31, 2020: €2,638 million) and, as had been the case a year earlier, resulted solely from derivatives used as fair value hedges.

» 68 Financial liabilities held for trading

€ million	Dec. 31, 2021	Dec. 31, 2020
DERIVATIVES (NEGATIVE FAIR VALUES)	**15,402**	**20,144**
Interest-linked contracts	11,911	16,506
Currency-linked contracts	1,682	1,806
Share-/index-linked contracts	1,577	1,550
Other contracts	150	188
Credit derivatives	82	94
SHORT POSITIONS	**1,548**	**604**
BONDS ISSUED	**22,245**	**22,224**
DEPOSITS	**4,216**	**7,438**
of which from affiliated banks	3,412	3,660
of which from other banks	613	3,516
Money market deposits	**4,031**	**7,279**
from banks	3,934	7,078
from customers	97	201
Promissory notes and registered bonds issued	**185**	**159**
to banks	91	98
to customers	94	61
Total	**43,411**	**50,410**

As was the case a year earlier, bonds issued mainly comprise share certificates and index-linked certificates.

» 69 Provisions

€ million	Dec. 31, 2021	Dec. 31, 2020
Provisions for employee benefits	**1,772**	**1,835**
Provisions for defined benefit plans	1,251	1,321
Provisions for other long-term employee benefits	206	186
of which for semi-retirement schemes	59	43
Provisions for termination benefits	276	295
of which for early retirement schemes	27	19
of which for restructuring	201	224
Provisions for short-term employee benefits	38	33
Provisions for share-based payment transactions	**42**	**46**
Other provisions	**2,178**	**2,122**
Provisions for onerous contracts	25	10
Provisions for restructuring	41	14
Provisions for loan commitments	125	107
Provisions for financial guarantee contracts	88	123
Other provisions for loans and advances	38	37
Provisions relating to building society operations	1,398	1,444
Residual provisions	462	387
Total	**3,992**	**4,003**

Provisions for defined benefit plans

The provisions for defined benefit plans predominantly result from pension plans that no further employees can join (closed plans). There are also defined benefit pension plans for members of boards of managing directors. Until now, new employees in Germany were predominantly offered defined contribution pension plans, for which it is not generally necessary to recognize a provision. After December 31, 2021, the majority of pension plans will be defined benefit pension plans, for which a provision has to be recognized. Outside Germany, there continue to be both defined contribution and defined benefit plans that are open to new employees. The proportion of the group's total obligations accounted for by obligations outside Germany is not material. The expense for defined contribution pension plans came to €21 million in 2021 (2020: €20 million).

As part of the cooperative financial network, group companies also manage pension commitments under occupational pensions through R+V Pensionsversicherung a.G. and other pension providers. R+V Pensionsversicherung a.G., which is not included in the consolidated financial statements, constitutes a related party pursuant to IAS 24.9.b.v.

With interest rates remaining low, R+V Pensionsversicherung a.G. has set up an extended initial fund pursuant to section 178 (5) VAG in which companies of the DZ BANK Group and other companies are involved. For the pension commitments treated as a defined contribution plan pursuant to IAS 19.46, the probability of drawdown by the pension providers on the basis of their subsidiary liability has been reassessed in view of the phase of low interest rates and the related granting of the initial fund loan. This probability is no longer regarded as remote, which means that the pension commitments are now accounted for as defined benefit plans and, in accordance with IDW AcP HFA 50 – IAS 19 – M1, were recognized in other comprehensive income as at December 31, 2021.

R+V Pensionsversicherung a.G. also has plan assets that are netted with the present value of the defined benefit obligations in accordance with IAS 19.57 (a) (iii). The plan assets include assets with a total fair value of €2,136 million, which exceeds the present value of the defined benefit obligations by €141 million. Because the plan assets generally cannot flow back to the extended initial fund's sponsor entities and the accounting treatment of the performance obligation involves uncertainties, the notional surplus is not recognized as an asset and instead is limited to €0 as part of the asset ceiling. Initial recognition as a defined benefit plan therefore had no impact on equity.

A pro rata present value of the defined benefit obligations of €325 million and plan assets of €348 million, of which €23 million is limited, is attributable to the group companies excluding R+V. A pro rata present value of the defined benefit obligations of €1,670 million and plan assets of €1,788 million, of which €118 million is limited, is attributable to the R+V subgroup.

Disclosures on the provisions for defined benefit plans of the companies in the R+V subgroup can be found in note 71.

Present value of defined benefit obligations

The present value of the defined benefit obligations is broken down by risk category as follows:

	Germany		Other countries		Total	
€ million	**Dec. 31, 2021**	Dec. 31, 2020	**Dec. 31, 2021**	Dec. 31, 2020	**Dec. 31, 2021**	Dec. 31, 2020
Final-salary-dependent plans	**2,676**	2,792	**136**	129	**2,812**	2,921
Defined benefit contributory plans	**966**	605	**262**	256	**1,228**	861
Accessorial plans	**77**	74	**-**	-	**77**	74
Total	**3,719**	**3,471**	**398**	**385**	**4,117**	**3,856**

The change in the present value of the defined benefit obligations in the risk category of defined benefit contributory plans in Germany was essentially due to the initial recognition of the pension commitments managed through R+V Pensionsversicherung a.G. as defined benefit pension plans.

The level of market interest rates for investment-grade fixed-income corporate bonds is a significant risk factor for all plans of the group entities because the discount rate determined from these rates affects the amount of the obligations.

Final-salary-dependent plans are pension obligations to employees, the amount of which depends on the employee's final salary before the pension trigger event occurs and that, for the most part, can be assumed to constitute a life-long payment obligation. Section 16 (1) of the German Occupational Pensions Act (BetrAVG) requires employers in Germany to review every 3 years whether the pension amount needs to be adjusted to reflect the change in consumer prices or net wages (adjustment review obligation). The main risk factors in the measurement of final-salary-dependent pension plans are longevity, changes in salary, inflation risk, and the discount rate. Longevity, changes in salary, and inflation risk affect the amount of benefits.

The majority of defined benefit contributory plans comprise obligations to pay fixed capital amounts or amounts at fixed interest rates. An annuitization option exists for around half of the obligations. As a result, there may be lifelong payment obligations as well as lump-sum payments and installments. For most obligations, the contributions are linked to remuneration. The majority of these plans are closed.

Accessorial plans are when the employer commits to a benefit that essentially corresponds to the benefit that is provided when an insured event occurs if the contributions are invested in a financial product of a third-party pension provider or insurer. The amount of the pension benefits therefore depends on the pension plan of the third-party pension provider, which is directly exposed to the risk factors longevity, changes in salary, and market interest-rate risk. Provided that economic conditions remain favorable, accessorial plans are almost risk free for the employer.

The pension plans agreed in Germany are not subject to minimum funding requirements. Minimum funding is required for some pension plans outside Germany owing to local regulations.

The changes in the present value of the defined benefit obligations were as follows:

€ million	2021	2020
Present value of defined benefit obligations as at Jan. 1	3,856	3,663
Current service cost	65	63
Interest expense	29	37
Employee contributions	6	6
Pension benefits paid including plan settlements	-123	-123
of which relating to plan settlements	-4	-7
Past service cost	-1	2
Actuarial gains (-)/losses (+)	268	207
of which due to changes in demographic assumptions	-3	40
of which due to changes in financial assumptions	205	153
of which experience-based	66	14
Plan takeovers	4	6
Changes attributable to currency translation	12	-5
Present value of defined benefit obligations as at Dec. 31	**4,117**	**3,856**

Of the actuarial losses from the change in financial assumptions, €325 million resulted from the initial recognition of the pension commitments managed through R+V Pensionsversicherung a.G. as defined benefit pension plans and around €69 million resulted from adjustment of the annuity trend. The actuarial losses were partly offset by actuarial gains of €190 million resulting from the increase in the underlying discount rate from 0.75 percent as at December 31, 2020 to 1.10 percent as at December 31, 2021.

Since June 30, 2021, the discount rate used to measure the defined benefit obligations has been rounded to 10 basis points instead of 25 basis points as was previously the case. If the original rounding method had been used, the discount rate would have been 0.1 percentage points lower at 1.00 percent. The provisions for defined benefit plans would therefore have been approximately €62 million higher as at December 31, 2021. Furthermore, all German companies in the group that do not calculate a different annuity trend themselves, adjusted the annuity trend from 1.60 percent as at December 31, 2020 to 1.80 percent as at December 31, 2021.

In addition to the 2018 G mortality tables published by Professor Dr. Klaus Heubeck, which are used to estimate average life expectancy, the following actuarial assumptions are used to measure the defined benefit obligations:

%	Dec. 31, 2021	Dec. 31, 2020
Discount rate	1.10	0.75
Weighted salary increases	2.03	1.98
Weighted pension increases	1.84	1.67

Sensitivity analysis

The following table shows the sensitivity of the present value of the defined benefit obligations to changes in the actuarial parameters. The effects shown are based on an isolated change to one parameter, with the other parameters remaining constant. Correlation effects between individual parameters are not considered.

	Dec. 31, 2021		Dec. 31, 2020	
	€ million	%	€ million	%
Change in the present value of defined benefit obligations as at balance sheet date if				
the discount rate were 50 basis points higher	-278	-6.75	-270	-7.00
the discount rate were 50 basis points lower	319	7.75	305	7.91
the future salary increase were 50 basis points higher	35	0.85	39	1.01
the future salary increase were 50 basis points lower	-33	-0.80	-38	-0.99
the future pension increase were 25 basis points higher	88	2.14	89	2.31
the future pension increase were 25 basis points lower	-84	-2.04	-87	-2.26
the life expectancy of a 65-year-old man were 1 year higher	152	3.69	158	4.10
the life expectancy of a 65-year-old man were 1 year lower	-147	-3.57	-150	-3.89

The duration of the defined benefit obligations as at December 31, 2021 was 15.11 years (December 31, 2020: 15.50 years).

Plan assets

Defined benefit obligations are offset by plan assets. €1,886 million of the plan assets (December 31, 2020: €1,952 million) are attributable to contractual trust arrangements (CTAs) at DZ BANK and BSH, and are managed as trust assets by DZ BANK Pension Trust e.V., Frankfurt am Main. The relevant CTA investment committee defines the investment policy and strategy for the asset management company. Plan assets relating to obligations in the United States and United Kingdom are also managed by independent trusts. In Luxembourg, the assets were transferred to a pension fund and, in Switzerland, to a foundation. Trustees/administrators are responsible for the administration and management of the pension plans and for compliance with regulatory requirements.

The increase in plan assets is essentially related to the initial recognition of the pension commitments managed through R+V Pensionsversicherung a.G. as defined benefit pension plans. The plan assets include assets with a fair value of €348 million, which exceeds the present value of the defined benefit obligations by €23 million. The notional surplus is not recognized as an asset and instead is limited to €0 as part of the asset ceiling.

The changes in the funding status of the defined benefit obligations were as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
Present value of defined benefit obligations funded by plan assets	3,469	3,188
Present value of defined benefit obligations not funded by plan assets	647	668
Present value of defined benefit obligations	**4,117**	**3,856**
less fair value of plan assets	-2,891	-2,535
Asset ceiling	23	-
Defined benefit obligations (net)	1,248	1,321
Recognized surplus	3	-
Provisions for defined benefit plans	**1,251**	**1,321**
Reimbursement rights recognized as assets	4	3

The asset ceiling affects the plan assets resulting from the initial recognition of the pension commitments managed through R+V Pensionsversicherung a.G. as defined benefit pension plans. Application of the asset ceiling resulted in actuarial losses of €23 million.

The following table shows the changes in plan assets:

€ million	2021	2020
Fair value of plan assets as at Jan. 1	2,535	2,466
Interest income	19	25
Return on (+)/expenses from (-) plan assets (excluding interest income)	369	95
Contributions to plan assets	30	23
of which contributions by employer	24	17
of which employee contributions	6	6
Pension benefits paid	-75	-73
Changes attributable to the takeover of defined benefit obligations	3	6
Changes attributable to currency translation	10	-7
Reclassifications	1	-
Fair value of plan assets as at Dec. 31	**2,891**	**2,535**

The remeasurement effects recognized in other comprehensive income that are attributable to plan assets are shown under return on/expenses from plan assets (excluding interest income). Of this total amount, €348 million relates to gains to be recognized in other comprehensive income resulting from the initial recognition of the pension commitments managed through R+V Pensionsversicherung a.G. as defined benefit pension plans.

Contributions to plan assets of €72 million are expected for 2022 (2021: €21 million).

The fair value of the plan assets is broken down by asset class as follows:

€ million	Dec. 31, 2021 With quoted market price in an active market	Dec. 31, 2021 Without quoted market price in an active market	Dec. 31, 2021 Total	Dec. 31, 2020 With quoted market price in an active market	Dec. 31, 2020 Without quoted market price in an active market	Dec. 31, 2020 Total
Cash and money market investments	-	46	46	-	47	47
Bonds and other fixed-income securities	1,466	-	1,466	1,563	-	1,563
Shares	183	-	183	158	-	158
Investment fund units	237	291	528	210	250	460
Other shareholdings	-	28	28	-	29	29
Derivatives	-1	-	-1	1	-	1
Land and buildings	-	5	5	-	5	5
Entitlements arising from insurance policies	-	162	162	-	160	160
Other assets	-	474	474	-	112	112
Total	**1,885**	**1,006**	**2,891**	**1,932**	**603**	**2,535**

The additions to plan assets of €348 million resulting from the initial recognition of R+V Pensionsversicherung a.G. are shown under other assets. They are predominantly fixed-income assets.

Of the total plan assets, 51 percent were accounted for by bonds and other fixed-income securities (December 31, 2020: 62 percent). If market interest rates rise, the prices of the fixed-income assets fall; if the interest rates fall, the prices of the fixed-income assets fall. This reflects the direction of interest-rate sensitivity of the defined benefit obligations and reduces risk to a certain extent. The fixed-income investments in the form of Pfandbriefe, government bonds, and corporate bonds are generally of high quality. A small proportion of non-investment-grade corporate bonds are held. The bulk of the investments (particularly Pfandbriefe and government bonds) are of prime quality (AAA to AA). The defined benefit obligations and the plan assets are largely in the euro, US dollar, and pound sterling currency areas. If the defined benefit obligations and the plan assets are in different currencies, derivative hedges are entered into in order to hedge the currency risk. As at December 31, 2021, the plan assets included €227 million of the group’s own, transferable financial instruments (December 31, 2020: €248 million). The real estate and other assets contained in the plan assets are not used by the companies themselves. The other investments are predominantly floating-rate securities (equities and investment fund units) from around the world, plus entitlements arising from insurance policies, short-term investments, and real estate assets.

Obligations under defined benefit plans (net)

The following table shows the changes in the obligations under defined benefit plans (net), comprising the present value of the defined benefit obligations, plan assets, and changes in the asset ceiling:

€ million	2021	2020
Obligations under defined benefit plans (net) as at Jan. 1	1,321	1,197
Current service cost	65	63
Net interest expense	10	12
Past service cost	-1	2
less return on/expenses from plan assets (excluding interest income)	-369	-95
Actuarial gains (-)/losses (+)	268	207
Changes in the asset ceiling	23	-
Employee contributions	6	6
Contributions to plan assets	-30	-23
Pension benefits paid	-48	-50
Plan takeovers	1	-
Changes attributable to currency translation	2	2
Reclassifications	-1	-
Obligations under defined benefit plans (net) as at Dec. 31	**1,248**	**1,321**

Multi-employer plans

Along with other financial institutions in Germany, group entities are members of BVV Versicherungsverein des Bankgewerbes a.G., Berlin, (BVV), BVV Versorgungskasse des Bankgewerbes e.V., Berlin, (BVVeV), and Versorgungskasse genossenschaftlich orientierter Unternehmen VGU e.V., Wiesbaden, (VGUeV). These pension providers provide retirement benefits to eligible employees in Germany. These include plans into which both employers and employees make regular contributions that are usually calculated by applying a contribution rate (as a percentage) to the monthly gross income of the active employees. The tariffs of the pension providers cover both fixed annuity payments with policyholder participation and capital payments. The assets in question and the defined benefit obligations relating to current and former employees are not allocated to the individual member companies. This is mainly because the pension providers do not fully allocate their investments to either the beneficiaries or the member companies. The group entities therefore classify these plans as multi-employer defined benefit plans but treat them as defined contribution plans for accounting purposes.

Other provisions

The following table shows the changes in other provisions in 2021:

€ million	Provisions for onerous contracts	Provisions for restruc-turing	Provisions for loan commit-ments	Provisions for financial guarantee contracts	Other provisions for loans and advances	Provisions relating to building society operations	Residual provisions	**Total**
Balance as at Jan. 1, 2021	10	14	107	123	37	1,444	387	2,122
Additions	18	43	414	79	26	210	382	1,173
Utilizations	-	-14	-	-	-	-254	-277	-546
Reversals	-2	-4	-396	-98	-26	-1	-35	-563
Interest expense/changes in discount rate	-	-	-	1	1	-	-	1
Other changes	-	1	-	-16	-	-	4	-11
Balance as at Dec. 31, 2021	**25**	**41**	**125**	**88**	**38**	**1,398**	**462**	**2,178**

The residual provisions include provisions totaling €71 million for litigation risk (December 31, 2020: €28 million). These relate to capital market and lending products and to general banking operations, for example legal action in connection with services in these areas of business (total amount in dispute of less than €0.3 billion). The plaintiffs claim that obligations resulting from the underlying legal relationships have been breached. It is assumed that the DZ BANK Group can largely defend itself against the claims raised. The other disclosures that would normally be required under IAS 37 are not provided because it is likely that such disclosures would seriously harm the outcome of the legal disputes.

The expected maturities of other provisions are shown in the tables below.

AS AT DECEMBER 31, 2021

€ million	≤ 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provisions for onerous contracts	-	-	-	25	-
Provisions for restructuring	-	5	37	-	-
Provisions for loan commitments	13	14	69	24	6
Provisions for financial guarantee contracts	10	15	53	10	-
Other provisions for loans and advances	-	31	5	1	-
Provisions relating to building society operations	6	331	551	510	-
Residual provisions	78	205	102	68	9
Total	**107**	**601**	**816**	**639**	**15**

AS AT DECEMBER 31, 2020

€ million	≤ 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provisions for onerous contracts	-	-	-	10	-
Provisions for restructuring	-	5	9	-	-
Provisions for loan commitments	5	14	63	22	3
Provisions for financial guarantee contracts	24	7	80	12	-
Other provisions for loans and advances	-	34	1	2	-
Provisions relating to building society operations	5	950	426	63	-
Residual provisions	51	150	65	108	13
Total	**85**	**1,160**	**644**	**217**	**16**

The changes in loss allowances recognized under provisions for loan commitments and provisions for financial guarantee contracts were as follows:

	Loss allowances for loan commitments				Loss allowances for financial guarantee contracts			Total
€ million	Stage 1	Stage 2	Stage 3	POCI assets	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2020	40	8	23	-	5	2	117	195
Additions	119	68	66	4	15	11	61	344
Reversals	-105	-48	-65	-3	-9	-3	-71	-304
Other changes	-	-2	2	-	-2	1	-4	-5
Balance as at Dec. 31, 2020	54	26	26	1	9	11	103	230
Additions	159	201	52	2	10	11	57	492
Reversals	-179	-173	-41	-3	-12	-12	-74	-494
Other changes	23	-24	1	-	-	-2	-14	-16
Balance as at Dec. 31, 2021	**56**	**31**	**38**	**1**	**7**	**9**	**72**	**213**

» 70 Insurance liabilities

€ million	Dec. 31, 2021	Dec. 31, 2020
Provision for unearned premiums	1,179	1,194
Benefit reserve	74,167	70,470
Provision for claims outstanding	16,429	14,627
Provision for premium refunds	11,237	12,569
Other insurance liabilities	53	50
Reserve for unit-linked insurance contracts	15,799	12,303
Total	**118,863**	**111,213**

CHANGES IN THE PROVISION FOR UNEARNED PREMIUMS

€ million	2021	2020
Balance as at Jan. 1	1,194	1,188
Additions	1,238	1,253
Utilizations/reversals	-1,259	-1,239
Changes attributable to currency translation	6	-8
Balance as at Dec. 31	**1,179**	**1,194**

CHANGES IN THE BENEFIT RESERVE

€ million	2021	2020
Balance as at Jan. 1	70,470	65,502
Additions	7,268	8,093
Interest component	918	982
Utilizations/reversals	-4,516	-4,106
Other changes in measurement	6	-
Changes attributable to currency translation	1	-1
Changes in scope of consolidation	20	-
Balance as at Dec. 31	**74,167**	**70,470**

Supplementary change-in-discount-rate reserves totaling €5,451 million have been recognized for policies with a discount rate in excess of the reference rate specified in the DeckRV (December 31, 2020: €4,698 million).

CHANGES IN THE PROVISION FOR CLAIMS OUTSTANDING

€ million	2021	2020
Balance as at Jan. 1	14,627	13,415
Claims expenses	8,424	7,821
less payments	-6,847	-6,427
Changes attributable to currency translation	225	-182
Balance as at Dec. 31	**16,429**	**14,627**

CHANGES IN THE PROVISION FOR PREMIUM REFUNDS

€ million	2021	2020
Balance as at Jan. 1	12,569	12,149
Additions	599	516
Utilizations/reversals	-820	-759
Other changes in measurement	1,767	-
Changes resulting from unrealized gains and losses on investments (through other comprehensive income)	-2,947	919
Changes resulting from other remeasurements (through profit or loss)	49	-233
Changes attributable to currency translation	20	-23
Balance as at Dec. 31	**11,237**	**12,569**

The breakdown of maturities for insurance liabilities is shown in the following tables:

AS AT DECEMBER 31, 2021

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	967	164	48	-
Benefit reserve	1,624	5,144	13,366	54,033
Provision for claims outstanding	5,986	6,378	4,065	-
Provision for premium refunds	911	686	637	9,003
Other insurance liabilities	26	10	14	3
Total	**9,514**	**12,382**	**18,130**	**63,039**

AS AT DECEMBER 31, 2020

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	967	182	45	-
Benefit reserve	2,040	5,205	13,917	49,308
Provision for claims outstanding	5,262	5,437	3,928	-
Provision for premium refunds	857	664	649	10,399
Other insurance liabilities	29	6	11	4
Total	**9,155**	**11,494**	**18,550**	**59,711**

In connection with the COVID-19 pandemic, €2 million was added to the provisions for claims outstanding in respect of the direct insurance companies in the non-life insurance division (December 31, 2020: €215 million). All of this amount was attributable to claims already reported (December 31, 2020: €52 million). Of the provision of €163 million recognized as at December 31, 2020 for claims incurred but not reported (IBNR), €50 million was retained as loss allowances as at the reporting date. There are also partial provisions of €20 million for known claims.

In the reinsurance business, COVID-19 had no impact on earnings in 2021 because the COVID-19-related expenses arising in the reporting year were adequately covered by provisions recognized in 2020. As at December 31, 2021, the proportion of provisions for claims outstanding attributable to claims incurred in connection with the COVID-19 pandemic totaled €270 million.

» 71 Other liabilities

€ million	Dec. 31, 2021	Dec. 31, 2020
Other liabilities of insurance companies	7,796	7,472
Accruals	1,526	1,279
Other payables	170	226
Lease liabilities	547	454
Residual other liabilities	758	812
Total	**10,797**	**10,243**

The table below gives a breakdown of insurance companies' other liabilities.

€ million	Dec. 31, 2021	Dec. 31, 2020
Other provisions	**426**	**436**
Provisions for employee benefits	391	403
of which provisions for defined benefit plans	203	226
Provisions for share-based payment transactions	3	3
Other provisions	31	30
Payables and residual other liabilities	**7,371**	**7,036**
Subordinated capital	80	75
Deposits received from reinsurers	36	41
Payables arising out of direct insurance operations	1,398	1,525
Payables arising out of reinsurance operations	597	566
Debt certificates issued including bonds	31	31
Deposits from banks	563	606
Derivatives (negative fair values)	103	23
Liabilities from capitalization transactions	3,592	3,053
Insurance lease liabilities	86	68
Other payables	318	293
Residual other liabilities	567	755
Total	**7,796**	**7,472**

Provisions for defined benefit plans

The following table shows the provisions for defined benefit plans shown in other liabilities of insurance companies.

Changes in the provisions for defined benefit pension plans

€ million	2021	2020
Balance as at Jan. 1	226	231
Actuarial gains (-)/losses (+)	-13	7
of which return on plan assets	-2	-1
of which due to changes in demographic assumptions	-	10
of which due to changes in financial assumptions	-11	-2
Interest expense (+) and income (-)	2	2
Additions to provisions for pensions and other post-employment benefits less additions to plan assets	-3	-5
Payments made from the plan	-9	-9
Balance as at Dec. 31	**203**	**226**

Present value of vested entitlements under defined benefit pension plans

€ million	2021	2020
Balance as at Jan. 1	443	444
Transition due to reassessment of a defined benefit plan previously treated as a defined contribution plan	1,670	-
Actuarial gains (-)/losses (+)	-11	8
of which due to changes in demographic assumptions	-	10
of which due to changes in financial assumptions	-11	-2
Current service cost	6	6
Interest expense	3	5
Employee contributions to the pension plan	1	1
Payments made from the plan	-21	-21
Balance as at Dec. 31	**2,091**	**443**

The weighted average maturity of the performance obligations was 14 years (December 31, 2020: 15 years).

Maturities of vested entitlements under defined benefit pension plans

€ million	2021	2020
Residual maturity of 1–5 years	259	10
Residual maturity of 5 years or more	1,773	371
Total	**2,032**	**381**

The maturity disclosures relate only to employer-funded pension commitments.

Sensitivity analysis for defined benefit pension plans

€ million	2021	2020
Discount rate - 0.50%	2,216	409
Discount rate + 0.50%	1,871	356
Expected salary trend - 0.25%	2,031	380
Expected salary trend + 0.25%	2,033	382
Expected annuity trend - 0.25%	2,022	370
Expected annuity trend + 0.25%	2,042	392

The amounts disclosed here show the total present values of the vested entitlements under defined benefit, employer-funded pension plans and pension plans managed through R+V Pensionsversicherung a.G.

The same methods and assumptions are used for the calculation of the sensitivities as for the calculation of the present value of the vested entitlements under defined benefit pension plans.

The discount rate used to measure the defined benefit obligations has been rounded to 10 basis points instead of 25 basis points as was previously the case. If the discount rate was 1.0 percent instead of 1.1 percent, the provision would be €22 million higher.

Plan assets for defined benefit pension plans

€ million	2021	2020
Balance as at Jan. 1	217	213
Transition due to reassessment of a defined benefit plan previously treated as a defined contribution plan	1,670*	-
Actuarial gains (-)/losses (+)	2	2
Interest income	1	2
Employee contributions to the pension plan	10	12
Payments made from the plan	-12	-12
Balance as at Dec. 31	1,888	217
Present value of vested entitlements less plan assets	203	226
Carrying amount of provisions for pensions and other post-employment benefits as at Dec. 31	**203**	**226**

* after asset ceiling.

The actual return on plan assets is the balance of interest income and the actuarial gains and losses.

The planned additions to plan assets within the following reporting period amounted to €6 million (December 31, 2020: €5 million).

The plan assets consist of assets at pension providers and in reinsured pension schemes.

The plan assets of R+V Pensionsversicherung a.G. to be netted with the present value of the defined benefit obligations primarily consist of fixed-income securities.

As was the case a year earlier, reimbursement rights for defined benefit pension plans amounted to €3 million.

Funded status of defined benefit pension plans

€ million	2021	2020
1. Pension commitments funded with plan assets		
Present value of vested pension entitlements	2,031	381
Fair value of plan assets	-1,888	-217
Recognized net liability	143	164
2. Pension commitments funded with reimbursement rights		
Fair value of reimbursement rights	3	3
Funded status	140	161
3. Pension commitments not funded with external assets		
Present value of vested pension entitlements	60	62
Recognized net liability	60	62
of which total recognized net liability	**203**	**226**
Total	**200**	**223**

Amounts under defined benefit pension plans recognized in profit or loss in the financial year

€ million	2021	2020
Current service cost	-6	-6
Interest expense	-3	-5
Interest income from plan assets	1	2
Total	**-8**	**-9**

The disclosed amounts recognized in profit or loss are part of staff expenses and are thus included in the following items in the income statement: insurance business operating expenses, claims expenses, expenses in connection with investments held by insurance companies, and other expenses.

Actuarial assumptions

	2021	2020
Discount rate	1.10%	0.75%
Expected return on plan assets	1.10%	0.75%
Expected return on reimbursement rights	1.10%	0.75%
Expected changes in salary	2.25%	2.50%
Expected rate of increase in benefits (after benefits are initially drawn)	1.80%	1.60%
Projected employee turnover	0.00%	0.70%

Mortality and invalidity assumptions for the German group companies' defined benefit obligations are derived from the 2018 G mortality tables published by Professor Dr. Klaus Heubeck.

The expected return on plan assets and on reimbursement rights was calculated in accordance with IAS 19.125 by multiplying the fair value of the assets by the discount rate used.

Cumulative actuarial gains and losses amounted to a loss of €151 million (December 31, 2020: loss of €164 million). The year-on-year change was due to actuarial gains and losses during the reporting year.

Defined contribution pension plans

In the case of the defined contribution pension plans, R+V pays contributions to VGUeV and Condor Versorgungs- und Unterstützungskasse e.V. on the basis of contractual provisions and on a voluntary basis. An expense of €17 million was recognized in 2021 (2020: €25 million). Contributions of €9 million (2020: €10 million) were also paid to R+V Pensionsversicherung a.G. over the course of the year. However, this plan is accounted for as a defined benefit plan following a reassessment as at December 31, 2021 (see 'Accounting policies'). By paying the contributions to the pension providers and pension schemes, R+V has no other obligations.

The employer contributions to statutory pension insurance amounted to €88 million in 2021 (2020: €85 million).

Disclosures on the provisions for defined benefit plans of the other companies in the DZ BANK Group can be found in note 69.

» 72 Subordinated capital

€ million	Dec. 31, 2021	Dec. 31, 2020
Subordinated liabilities	3,062	3,077
Share capital repayable on demand	12	13
Total	**3,074**	**3,090**

» 73 Equity

Subscribed capital

The subscribed capital of DZ BANK consists of 1,791,344,757 registered non-par-value shares each with an imputed value of €2.75. All shares in issue are fully paid-up.

For the 2020 financial year, DZ BANK paid a dividend of €0.16 per share in 2021 on the basis of a resolution of the Annual General Meeting on May 19, 2021. This resolution was based on the ECB's recommendations that applied at that time regarding the limiting of dividend distributions during the COVID-19 pandemic. In a statement dated July 23, 2021, the ECB said that the banks under its supervision would be free to decide on their distribution policy as they see fit – taking account of their specific situation – from October 1, 2021 onward. Consequently, an Extraordinary General Meeting held on November 4, 2021 approved a resolution to distribute an additional dividend, also of €0.16. No dividend had been distributed in 2020. A dividend of €0.20 per share for 2021 will be proposed to the Annual General Meeting.

Authorized capital

The Board of Managing Directors of DZ BANK is authorized, subject to the approval of the Supervisory Board, to increase the share capital by June 30, 2026 on one or more occasions by up to a total of €200 million by way of issuing new registered non-par-value shares in return for cash or non-cash contributions. The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to exclude the subscription right of shareholders both in the case of capital increases in return for non-cash contributions and in the case of capital increases in return for cash contributions if the capital is increased for the purpose of
– issuing new shares to employees of the corporation (employee shares),
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 June 30, 2026 on one or more occasions by up to a total of €600 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 new shares issued on the basis of utilizing Authorized Capital I or Authorized Capital II can also be acquired by credit institutions determined by the Board of Managing Directors if aforesaid credit institutions agree to offer said shares to the shareholders (indirect subscription right).

The Board of Managing Directors did not make use of any of this authorized action in 2021.

Contingent capital

Under article 5b of the Articles of Association of DZ BANK AG, the share capital can be contingently raised by up to €52,859,413.75 by issuing up to 19,221,605 new, registered non-par-value shares (Contingent Capital). The increase in the Contingent Capital served to grant registered non-par-value shares (subscription shares) for the fulfillment of corresponding conversion rights and/or conversion obligations of creditors of convertible bonds or registered bonds, as the case may be, that were issued until June 24, 2015 in return for a cash contribution on the basis of the authorization resolution of the Annual General Meeting of WGZ BANK AG Westdeutsche Genossenschafts-Zentralbank of June 24, 2014.

The registered bond with a conversion right that was issued with a nominal value of €128 million was repaid on December 3, 2021. The conversion right was not exercised.

Disclosures on shareholders

At the end of 2021, 99.5 percent of shares were held by cooperative enterprises (December 31, 2020: 99.5 percent). These cooperative enterprises include the cooperative banks and other legal entities and trading companies economically associated with the cooperative movement or cooperative housing sector.

Capital reserve

The capital reserve comprises the amounts from the issue of DZ BANK shares in excess of the imputed par value of the shares.

Retained earnings

Retained earnings comprise earned, undistributed consolidated profit together with gains and losses arising from remeasurement of defined benefit plans after taking into account deferred taxes. Cumulative gains and losses arising from remeasurement of defined benefit plans amounted to a loss of €707 million (December 31, 2020: loss of €777 million).

Reserve from other comprehensive income

Reserve from equity instruments for which the fair value OCI option has been exercised

The reserve from equity instruments for which the fair value OCI option has been applied is used to report the changes in the fair value of equity instruments measured at fair value through other comprehensive income after taking into account deferred taxes. If the equity instruments are sold, the related reserve is reclassified to retained earnings.

At the end of 2021, no amount was attributable to the reserve from non-current assets and disposal groups classified as held for sale (December 31, 2020: €10 million).

Reserve from gains and losses on financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk

The portion of the changes in fair value of financial liabilities designated as at fair value through profit or loss attributable to changes in the DZ BANK Group's own credit risk is also recognized in the reserve from other comprehensive income. If the liabilities are derecognized, the cumulative gains and losses recognized through other comprehensive income are reclassified to retained earnings.

Reserve from debt instruments measured at fair value through other comprehensive income

The reserve from debt instruments measured at fair value through other comprehensive income is used to report the changes in fair value after taking into account deferred taxes. In the case of debt instruments, gains and losses are only recognized in profit or loss when the relevant asset is sold. Loss allowances are recognized for these assets in accordance with IFRS 9.

Currency translation reserve

The currency translation reserve is the result of the translation of financial statements of subsidiaries denominated in foreign currency into euros (the group reporting currency). It also includes the gains and losses on hedges of net investments in foreign operations and the change in the currency translation reserve for entities accounted for using the equity method.

Additional equity components

Additional Tier 1 notes

In previous years, DZ BANK had issued tranches of additional Tier 1 notes (AT1 bonds) in 2 placements with a total volume of €2,150 million. In both placements, the AT1 bonds are split into 4 types depending on their interest-rate arrangements (types A to D). All interest is payable annually; the date for the payment of interest has been specified as August 1 each year in both placements. Under the terms and conditions of the bonds, interest payments are 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 competent supervisory authority. Interest payments are not cumulative; canceled or reduced payments will not be made up in subsequent periods.

The bonds do not have any maturity date and are subject to the terms and conditions set out in the relevant prospectus. Among other things, the terms and conditions specify that DZ BANK may only call the bonds in their entirety, and not in part, provided that there are certain regulatory or tax reasons for doing so. In all instances, DZ BANK must obtain the consent of the competent supervisory authority in order to call the bonds.

The tranches of AT1 bonds issued are shown in the ‘Additional equity components’ sub-item. According to the provisions of IAS 32, the AT1 bonds have characteristics of equity. The AT1 bonds are unsecured, subordinated bearer bonds of DZ BANK.

Other hybrid capital

As a result of the merger of DZ BANK with WGZ BANK, the convertible bond issued by WGZ BANK was taken over by DZ BANK as the legal successor. Upon initial recognition when the convertible bond was taken over, the components had to be defined as a financial liability or an equity instrument. The portion of the convertible bond that was not classified as a component of equity was recognized under subordinated capital. The equity component of €95 million was included as an additional equity component within the equity of the DZ BANK Group and was repaid on December 3, 2021 because the conversion right was not exercised.

Non-controlling interests

Non-controlling interests comprise the equity of subsidiaries not attributable to DZ BANK.

There was a decrease in non-controlling interests in 2021, primarily due to the call and subsequent repayment in full of the bonds and the non-cumulative trust preferred securities issued by the entities that had been established in order to increase own funds in accordance with section 10a KWG.

Breakdown of changes in equity by component of other comprehensive income

2021

€ million	Equity earned by the group	Reserve from other compre-hensive income	Non-controlling interests
Gains and losses on debt instruments measured at fair value through other comprehensive income	-	-863	-78
Exchange differences on currency translation of foreign operations	-	-19	-
Gains and losses on hedges of net investments in foreign operations	-	5	-
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-	398	42
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	-	27	-
Gains and losses arising from remeasurement of defined benefit plans	70	-	3
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	14	-
Other comprehensive income/loss	**70**	**-438**	**-32**

2020

€ million	Equity earned by the group	Reserve from other compre-hensive income	Non-controlling interests
Gains and losses on debt instruments measured at fair value through other comprehensive income	-	710	71
Exchange differences on currency translation of foreign operations	-	-22	-7
Gains and losses on hedges of net investments in foreign operations	-	2	-
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-	-73	-15
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	-	-42	-
Gains and losses arising from remeasurement of defined benefit plans	-95	-	-2
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	-6	-
Other comprehensive income/loss	**-95**	**569**	**47**

The table below shows a breakdown of the reserve from other comprehensive income:

	Items not reclassified to the income statement		Items reclassified to the income statement	
€ million	Reserve from equity instruments for which the fair value OCI option has been exercised	Reserve from gains and losses on financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	Reserve from debt instruments measured at fair value through other compre-hensive income	Currency translation reserve
Equity as at Jan. 1, 2020	463	-42	1,180	85
Other comprehensive income/loss	-73	-42	710	-26
Total comprehensive income/loss	**-73**	**-42**	**710**	**-26**
Acquisition/disposal of non-controlling interests	-	-	-1	-
Reclassifications within equity	-50	8	-	-
Equity as at Dec. 31, 2020	340	-76	1,889	59
Other comprehensive income/loss	398	27	-863	-
Total comprehensive income/loss	**398**	**27**	**-863**	**-**
Acquisition/disposal of non-controlling interests	-	-	-1	-1
Reclassifications within equity	-117	-5	-	-
Equity as at Dec. 31, 2021	**621**	**-54**	**1,025**	**58**

The changes in loss allowances included in the reserve from other comprehensive income, broken down by individual balance sheet item, were as follows:

	Loans and advances to customers			Investments		
€ million	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
Balance as at Jan. 1, 2020	1	-	-	4	1	30
Additions	1	1	-	9	-	-
Utilizations	-	-	-	-1	-	-8
Reversals	-	-1	-	-3	-1	-
Other changes	-	-	-	-1	-	2
Balance as at Dec. 31, 2020	2	-	-	8	-	24
Additions	-	-	-	5	-	-
Utilizations	-	-	-	-	-	-
Reversals	-1	-1	-	-6	-	-
Other changes	-	-	-	-	-	-
Balance as at Dec. 31, 2021	**-**	**-**	**-**	**7**	**-**	**24**

	Investments held by insurance companies			Total
€ million	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2020	4	-	-	40
Additions	9	3	-	23
Utilizations	-	-	-	-9
Reversals	-4	-	-	-9
Other changes	1	-1	-	1
Balance as at Dec. 31, 2020	10	2	-	46
Additions	57	7	2	71
Utilizations	-	-	-1	-1
Reversals	-50	-2	-	-60
Other changes	1	-5	-	-4
Balance as at Dec. 31, 2021	**19**	**2**	**1**	**53**

Information on regulatory capital

The information on regulatory capital and on capital management pursuant to IAS 1.134-136, which also forms part of these IFRS consolidated financial statements, can be found in the group management report in chapter VII 'DZ BANK Group and DZ BANK risk report', section 7 'Capital adequacy'.

E Financial instruments and fair value disclosures

» 74 Classes, categories, and fair values of financial instruments

The following tables show the breakdown of net carrying amounts and fair values of financial assets and financial liabilities by class (in accordance with IFRS 7) and by category of financial instrument (in accordance with IFRS 9):

€ million	Dec. 31, 2021 Carrying amount	Dec. 31, 2021 Fair value	Dec. 31, 2020 Carrying amount	Dec. 31, 2020 Fair value
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**218,618**	**218,674**	**196,447**	**196,505**
Financial assets measured at fair value through profit or loss	**89,650**	**89,706**	**83,415**	**83,473**
Financial assets mandatorily measured at fair value through profit or loss	***80,935***	***80,991***	***73,945***	***74,003***
Loans and advances to customers	168	168	241	241
Hedging instruments (positive fair values)	389	389	161	161
Financial assets held for trading	47,321	47,378	42,788	42,846
Investments	3,129	3,129	2,720	2,720
Investments held by insurance companies	29,928	29,928	28,035	28,035
Financial assets designated as at fair value through profit or loss	***8,715***	***8,715***	***9,470***	***9,470***
Loans and advances to banks	1,854	1,854	1,967	1,967
Loans and advances to customers	1,033	1,033	1,213	1,213
Investments	5,829	5,829	6,290	6,290
Financial assets measured at fair value through other comprehensive income	**128,805**	**128,805**	**112,857**	**112,857**
Financial assets mandatorily measured at fair value through other comprehensive income	***122,068***	***122,068***	***106,935***	***106,935***
Loans and advances to banks	68	68	116	116
Loans and advances to customers	2,781	2,781	3,436	3,436
Investments	30,779	30,779	35,450	35,450
Investments held by insurance companies	88,439	88,439	67,933	67,933
Financial assets designated as at fair value through other comprehensive income	***6,737***	***6,737***	***5,922***	***5,922***
Investments	528	528	393	393
Investments held by insurance companies	6,209	6,209	5,529	5,529
Non-current assets and disposal groups classified as held for sale	**163**	**163**	**175**	**175**
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**395,328**	**398,831**	**385,370**	**394,481**
Cash and cash equivalents	85,763	85,763	68,148	68,148
Loans and advances to banks	105,713	107,307	100,913	104,646
Loans and advances to customers	189,044	191,230	182,079	185,968
Investments	11,733	12,387	14,894	15,838
Investments held by insurance companies	147	135	15,757	18,282
Other assets	2,009	2,009	1,595	1,595
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	920		1,980	
Non-current assets and disposal groups classified as held for sale	-	-	4	4
FINANCE LEASES	**731**	**736**	**1,076**	**1,091**
Loans and advances to banks	1	1	-	-
Loans and advances to customers	730	735	1,076	1,091

€ million	Dec. 31, 2021 Carrying amount	Dec. 31, 2021 Fair value	Dec. 31, 2020 Carrying amount	Dec. 31, 2020 Fair value
FINANCIAL LIABILITIES MEASURED AT FAIR VALUE	**74,519**	**74,505**	**84,974**	**84,968**
Financial liabilities mandatorily measured at fair value through profit or loss	**45,192**	**45,178**	**53,071**	**53,065**
Hedging instruments (negative fair values)	1,678	1,678	2,638	2,638
Financial liabilities held for trading	43,411	43,397	50,410	50,404
Other liabilities	103	103	23	23
Financial liabilities designated as at fair value through profit or loss	**29,327**	**29,327**	**31,903**	**31,903**
Deposits from banks	3,953	3,953	4,564	4,564
Deposits from customers	8,259	8,259	9,511	9,511
Debt certificates issued including bonds	16,975	16,975	17,589	17,589
Subordinated capital	140	140	239	239
FINANCIAL LIABILITIES MEASURED AT AMORTIZED COST	**391,013**	**394,457**	**355,644**	**363,304**
Deposits from banks	192,609	194,467	173,288	177,515
Deposits from customers	130,716	132,062	124,413	126,803
Debt certificates issued including bonds	62,677	62,995	52,911	54,117
Other liabilities	1,926	1,927	1,865	1,867
Subordinated capital	2,934	3,006	2,851	3,001
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	150		315	
Liabilities included in disposal groups classified as held for sale	-	-	1	1
LEASES	**632**	**632**	**522**	**522**
Other liabilities	632	632	522	522
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**213**	**213**	**230**	**230**
Financial guarantee contracts	**88**	**88**	**123**	**123**
Provisions	88	88	123	123
Loan commitments	**125**	**125**	**107**	**107**
Provisions	125	125	107	107

Given the complex structure of home savings contracts and the multitude of scales of rates and charges, there is currently no suitable method for calculating the fair value of an individual contract as at the balance sheet date. Consequently, the fair value pursuant to IFRS 7.25 cannot be determined using either comparable market prices or suitable option pricing models. The fair values of financial assets and financial liabilities resulting from building society operations are therefore shown in simplified form at their carrying amounts. On the basis of the models used for building society management, which comprise both collective and non-collective business including deposits, the overall amount for building society operations during the reporting period was positive.

The fair values of the investments held by insurance companies comprise both the proportion of the fair values that is attributable to the policyholders and the proportion attributable to the shareholders of the DZ BANK Group. The fair value attributable to the shareholders of the DZ BANK Group of investments held by insurance companies measured at amortized cost was €105 million (December 31, 2020: €16,505 million).

The differences between the carrying amount and the fair value of financial assets held for trading in the 'financial assets measured at fair value' class and of financial liabilities held for trading in the 'financial liabilities measured at fair value' class are due to the deferral of day-one profit or loss, which is based on unobservable measurement parameters.

A changed estimate resulting from a model adjustment meant that the fair value of loans and advances to customers measured at amortized cost decreased by €416 million.

» 75 Differences not recognized at the time of initial recognition

Differences that are not recognized at the time of initial recognition of financial instruments (day-one profit or loss) arise in the DZ BANK Group if the fair value of a financial instrument differs from its transaction price at the time of initial recognition and the calculation of the fair value is not substantiated by a price quoted in an active market for an identical asset or identical liability or is not based on a valuation technique that only uses data from observable markets. Such transactions are recognized at fair value on the balance sheet, adjusted for the deferred day-one profit or loss. The unrecognized difference is recognized in profit or loss over the term of the transaction. The following table shows the deferred, unrecognized differences in the DZ BANK Group, broken down by class pursuant to IFRS 7.

€ million	Measured at fair value: Financial assets	Measured at fair value: Financial liabilities
Balance as at Jan. 1, 2020	-	-
Restatements according to IAS 8	49	3
Additions as a result of transactions	13	2
Differences amortized to profit or loss	-5	-
Balance as at Dec. 31, 2020	57	5
Additions as a result of transactions	12	4
Differences amortized to profit or loss	-6	-1
Reclassifications	-7	7
Balance as at Dec. 31, 2021	**57**	**14**

» 76 Equity instruments designated as at fair value through other comprehensive income

Investments and investments held by insurance companies include shares and other variable-yield securities and investments in subsidiaries, joint ventures, and associates that the DZ BANK Group has elected to measure at fair value through other comprehensive income. These investments and investments held by insurance companies are not held for trading or to generate returns. The DZ BANK Group believes that it would be inappropriate to report gains and losses in profit or loss in this case.

€ million	**Dec. 31, 2021**	Dec. 31, 2020
Investments	**528**	393
Shares and other variable-yield securities	409	262
Investments in subsidiaries	116	131
Investments in associates	3	-
Investments held by insurance companies	**6,209**	5,529
Shares and other variable-yield securities	5,779	5,109
Investments in subsidiaries	408	402
Investments in joint ventures	21	18
Investments in associates	1	-
Total	**6,737**	**5,922**

Dividends of €83 million (2020: €74 million) were recognized in 2021 in respect of investments and investments held by insurance companies as at the reporting date for which the option of recognition at fair value through other comprehensive income has been exercised.

Investments and investments held by insurance companies with a carrying amount of €1,538 million, for which the option of recognition at fair value through other comprehensive income had been exercised, were derecognized in 2021 (2020: €576 million). The derecognition of these investments was attributable to capital repayments, liquidations, and disposals. No further current gains or losses are expected from these assets. These derecognitions resulted in cumulative net gains of €248 million (2020: €54 million), which were reclassified to retained earnings or the provision for premium refunds in the reporting year. In 2021, dividends of €109 million (2020: €80 million) were recognized in respect of investments and investments held by insurance companies that have been sold.

In addition, non-current assets and disposal groups classified as held for sale with a carrying amount of €60 million, which had been designated as at fair value through other comprehensive income, were sold in 2021 (2020: €0 million). Cumulative gains and losses amounting to a gain of €23 million (2020: €0 million) were reclassified to retained earnings.

» 77 Assets and liabilities measured at fair value on the balance sheet

Fair value hierarchy

The fair value measurements are assigned to the levels of the fair value hierarchy as follows:

	Level 1		Level 2		Level 3	
€ million	**Dec. 31, 2021**	Dec. 31, 2020	**Dec. 31, 2021**	Dec. 31, 2020	**Dec. 31, 2021**	Dec. 31, 2020
Assets	**92,040**	89,438	**101,882**	97,616	**24,753**	9,451
Loans and advances to banks	-	-	1,922	2,083	-	-
Loans and advances to customers	-	-	3,303	4,029	679	861
Hedging instruments (positive fair values)	-	-	389	161	-	-
Financial assets held for trading	2,477	2,032	44,256	40,045	645	769
Investments	19,466	20,421	18,898	22,726	1,900	1,705
Investments held by insurance companies	70,097	66,935	33,114	28,532	21,365	6,030
Non-current assets and disposal groups classified as held for sale	-	50	-	39	163	86
of which non-recurring measurement	-	50	-	-	7	2
Liabilities	**4,510**	4,451	**88,027**	94,466	**595**	774
Deposits from banks	-	-	3,953	4,564	-	-
Deposits from customers	-	-	8,259	9,511	-	-
Debt certificates issued including bonds	3,331	3,416	13,218	13,691	427	482
Hedging instruments (negative fair values)	-	-	1,678	2,638	-	-
Financial liabilities held for trading	1,178	1,032	42,071	49,101	148	271
Financial liabilities arising from unit-linked insurance products	-	-	18,627	14,722	-	-
Other liabilities	2	3	101	20	-	-
Subordinated capital	-	-	120	219	20	20

The investments held by insurance companies measured at fair value include assets related to unit-linked contracts. These are offset on the equity and liabilities side of the balance sheet by financial liabilities measured at fair value arising from unit-linked insurance products, which consist of the reserve for unit-linked insurance contracts and liabilities from capitalization transactions allocated to unit-linked life insurance.

Transfers

Assets and liabilities held at the balance sheet date and measured at fair value on a recurring basis were transferred as follows between Levels 1 and 2 of the fair value hierarchy:

	Transfers from Level 1 to Level 2		Transfers from Level 2 to Level 1	
€ million	**2021**	2020	**2021**	2020
Financial assets measured at fair value	**1,000**	603	**922**	1,947
Investments held by insurance companies	1,000	603	922	1,947

Transfers from Level 1 to Level 2 were due to quoted prices no longer being obtainable in active markets for identical assets or liabilities. Transfers from Level 2 to Level 1 were due to the availability of quoted prices in active markets that had previously not existed.

In the DZ BANK Group, transfers between Levels 1 and 2 take place when there is a change in the inputs that is relevant to categorization in the fair value hierarchy.

Fair value measurements within Levels 2 and 3

Fair value measurements within Level 2 of the fair value hierarchy either use prices available in active markets for similar, but not identical, financial instruments or use valuation techniques largely based on observable market data. If valuation techniques are used that include a significant valuation input that is not observable in the market, the relevant fair value measurements are categorized within Level 3 of the fair value hierarchy.

Generally, the discounted cash flow (DCF) method is used in the model-based measurement of the fair value of financial instruments without optionalities. Modeling of the yield curves is based on a multi-curve approach with collateral discounting. Simple products on which options exist are measured using customary standard models in which the inputs are quoted in active markets. For structured products on which options exist, a wide range of standard valuation techniques are used. Valuation models are calibrated to available market prices and validated regularly. The fair values of structured products can be measured by breaking these products into their constituent parts, which are then measured using the valuation methods described below.

The basis for measurement is the selection of an adequate yield curve for each specific instrument. The measurement is carried out by selecting appropriate tenor-specific forward curves for projecting variable cash flows. The nature and collateralization of the transactions determines how they are discounted using yield curves that can be adjusted on the basis of relevant spreads.

The DZ BANK Group uses prices in active markets (provided these prices are available) for the fair value measurement of loans and advances as well as unstructured bonds. Otherwise, it mainly uses the DCF method. Discounting is based on yield curves that are adjusted for liquidity-related and credit rating-related costs using spreads. Product-dependent funding spreads are added to the yield curve for liabilities attributable to registered creditors, debt certificates issued including bonds, and subordinated capital. Debt instruments held are adjusted using issuer-specific spreads or spreads derived from the issuer's internal and external credit rating, sector, and risk category. Customer-appropriate spreads and collateralization rates are taken into account for the measurement of loans when the DCF method is used. If significant unobservable inputs are used for measurement and there are no indications that the transaction price is not identical to the fair value at the time of first-time recognition on the balance sheet, the valuation method is calibrated in such a way that the model price at the time of acquisition corresponds to the transaction price. In exceptional cases, the nominal amount of the debt instrument in question provides the best evidence of fair value.

The fair value measurements of shares and other variable-yield securities and of long-term equity investments accounted for in accordance with IFRS 9 are determined by applying income capitalization approaches and observing transaction prices. The best indicator of fair value is deemed to be the transaction prices for recent transactions involving the relevant financial instruments, provided there have been any such transactions. Otherwise, the fair value is measured using income capitalization approaches in which future income and dividends – calculated on the basis of forecasts and estimates – are discounted, taking risk parameters into account.

The fair value measurements of investment fund units are determined using the pro rata net asset value. This is adjusted for any outstanding performance-related remuneration entitlements of fund managers; risk adjustments are also taken into account. Some long-term equity investments in real estate companies are also measured at net asset value. In this case, the liabilities are subtracted from the fair values of the real estate tied up in the company and the result is multiplied by the percentage of shareholding. The prices of units in real estate funds that are not managed by the DZ BANK Group are provided by the asset management company that manages these funds. These units are measured regularly at net asset value. Fair value measurements are also based on valuations, current values, and prices in recent transactions.

The fair value measurement of standardized derivatives traded in liquid markets is based on observable market prices and/or industry-standard models using observable inputs. To discount the cash flows of derivatives, a distinction is made between non-collateralized and collateralized transactions when using yield curves in order to take into account the specific funding costs. Moreover, calculation of the model prices for products on which options exist mostly requires the input of additional market data (e.g. volatilities, correlations, repo rates). As far as possible, this data is derived implicitly from quoted market prices that are available. If observable quoted market prices are not available, or only available to a limited extent, the DZ BANK Group uses customary interpolation and extrapolation mechanisms, historical time series analyses, and fundamentals analyses of economic variables to generate the required inputs. It also uses expert assessments on a small scale.

The fair value measurement of OTC financial derivatives applies the option in IFRS 13.48, which enables the total net amount to be measured. In the first step, credit risk is not taken into account. Counterparty-specific credit risk arising from derivatives is recognized after the total net amount has been determined. Credit valuation adjustments (CVAs) are recognized to take into account counterparty credit risk and debt valuation adjustments (DVAs) are recognized to take into account the group’s own credit risk. Their measurement also takes account of collateral and uses market-implied parameters with matching maturities or internal parameters with matching maturities for the probability of default and loss given default.

The measurement of financial instruments also involves carrying out measurement adjustments to a suitable degree. These include, among other things, model reserves that enable uncertainties regarding model selection, model parameters, and model configuration to be taken into account. The DZ BANK Group measures financial instruments at the price at which these financial instruments can be realized in the market. If this differs from the measurement of the individual instruments (e.g. measurement at middle rates), the bid/ask adjustments (close-out reserves) are determined on a net basis applying the option in IFRS 13.48. Measurement takes account of the group’s funding structure.

The following table shows the valuation techniques, the unobservable inputs, and the spreads of the unobservable inputs used for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2021.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Loans and advances to customers	Loans	455	DCF method	BVAL price adjustment	-4.0 to 5.3
		56	DCF method	Credit spread	0.0 to 0.2
	Profit-participation certificates	26	DCF method	Internal credit ratings	3.8 to 11.6
	Shareholders' loans	81	DCF method	Internal credit ratings	3.8 to 11.6
	Initial fund loans	13	DCF method	Probability of default	0.8
	Receivables arising from silent partnerships	48	DCF method	Internal credit ratings	3.8 to 11.6
Financial assets held for trading	ABSs	3	DCF method	Credit spread	6.7
	Equity/commodity basket products	2	Local volatility model	Correlation of the risk factors considered	17.3 to 91.0
	Loans and advances to issuers in default	3	DCF method	Recovery rate	-
	Collateralized loan obligations	104	Gaussian copula model	Liquidity spread	1.3 to 3.7
	Bearer securities	315	DCF method	BVAL price adjustment	0.2 to 1.5
	Registered securities	217	DCF method	BVAL price adjustment	-4.0 to 5.3
	Option in connection with acquisition of long-term equity investments	1	Black-Scholes model	Earnings indicators	-
Investments	ABSs	67	DCF method	Credit spread	0.5 to 7.9
	Other variable-yield securities	10	DCF method	Assumptions for measurement of risk parameters	10.0 to 12.5
	Investments in associates	3	Income capitalization approach	Future income	-
	Investments in subsidiaries	83	DCF method	Assumptions for measurement of risk parameters	10.0 to 12.5
		221	Income capitalization approach, net asset value method	Future income	-
	Collateralized loan obligations	1	Gaussian copula model	Liquidity spread	1.7 to 2.4
	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
	Bearer securities	308	DCF method	BVAL price adjustment	-0.5 to 134.1
	Investment fund units	15	Net asset value	-	-
	Mortgage-backed securities	251	DCF method	Duration	-
		16	DCF method	Recovery rate	0.0 to 73.0
	Other shareholdings	249	DCF method	Capitalization rate, growth factor	1.5 to 12.5
		243	Income capitalization approach, net asset value method	Future income	-
	VR Circle	427	DCF method	Multiple-year default probabilities	0.0 to 100.0

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Investments held by insurance companies	ABSs	1,533	Third-party pricing information	-	-
	Investments in subsidiaries, associates, and joint ventures, real estate funds, profit-participation certificates, and other long-term equity investments	3,975	Net asset value	-	-
	Investments in subsidiaries, associates, and joint ventures, other long-term equity investments, and shares in cooperatives	312	Income capitalization approach	Future income	7.6 to 7.8
	Fixed-income securities, convertible bonds, shares, investment fund units, and shares in cooperatives	755	Third-party pricing information	-	-
	Profit-participation certificates and promissory notes	14,708	DCF method	Credit spread	0.6 to 11.4
	Initial fund loans	69	DCF method	Probability of default	0.8
	Other shareholdings	13	Approximation	-	-
Non-current assets and disposal groups classified as held for sale	Loans	163	DCF method	Credit spread	0.0 to 23.9
Debt certificates issued including bonds	VR Circle	427	DCF method	Multiple-year default probabilities	0.0 to 100.0
Financial liabilities held for trading	Equity/commodity basket products	139	Local volatility model	Correlation of the risk factors considered	15.9 to 91.0
	Products with commodity volatility derived from comparable instruments	9	Local volatility model	Volatility	7.0 to 73.6
Subordinated capital	Loans	20	DCF method	Credit spread	0.3 to 0.6

The following table shows the valuation techniques, the unobservable inputs, and the spreads of the unobservable inputs used for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2020.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Loans and advances to customers	Loans	580	DCF method	BVAL price adjustment	-4.0 to 4.9
		79	DCF method	Credit spread	0.1 to 8.3
	Profit-participation certificates	28	DCF method	Internal credit ratings	4.0 to 24.2
	Shareholders' loans	112	DCF method	Internal credit ratings	4.0 to 24.2
	Receivables arising from silent partnerships	62	DCF method	Internal credit ratings	4.0 to 24.2
Financial assets held for trading	ABSs	4	DCF method	Credit spread	7.7
	Equity/commodity basket products	3	Local volatility model	Correlation of the risk factors considered	9.9 to 85.3
	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
	Collateralized loan obligations	121	Gaussian copula model	Liquidity spread	1.6 to 3.3
	Bearer securities	235	DCF method	BVAL price adjustment	0.2 to 2.6
	Registered securities	400	DCF method	BVAL price adjustment	-4.0 to 4.9
Investments	ABSs	93	DCF method	Credit spread	0.6 to 7.0
	Other variable-yield securities	10	DCF method	Assumptions for measurement of risk parameters	11.4 to 14.5
	Investments in subsidiaries	66	DCF method	Assumptions for measurement of risk parameters	11.4 to 14.5
		231	Income capitalization approach, net asset value method	Future income	-
	Collateralized loan obligations	3	Gaussian copula model	Liquidity spread	0.0 to 2.1
	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
	Bearer securities	164	DCF method	BVAL price adjustment	0.2 to 132.7
	Investment fund units	13	Net asset value	-	-
	Mortgage-backed securities	276	DCF method	Duration	-
		37	DCF method	Recovery rate	0.0 to 94.3
	Other shareholdings	88	DCF method	Capitalization rate, growth factor	1.0 to 10.3
		235	Income capitalization approach, net asset value method	Future income	-
	VR Circle	483	DCF method	Multiple-year default probabilities	0.0 to 100.0

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Investments held by insurance companies	ABSs	1,379	Third-party pricing information	-	-
	Investments in subsidiaries, associates, and joint ventures, real estate funds, profit-participation certificates, and other long-term equity investments	2,923	Net asset value	-	-
	Investments in subsidiaries, associates, and joint ventures, other long-term equity investments, and shares in cooperatives	309	Income capitalization approach	Future income	6.5 to 9.4
	Fixed-income securities, convertible bonds, shares, investment fund units, and shares in cooperatives	959	Third-party pricing information	-	-
	Profit-participation certificates and promissory notes	451	DCF method	Credit spread	5.0 to 6.8
	Other shareholdings	9	Approximation	-	-
Non-current assets and disposal groups classified as held for sale	Investments in corporations	29	Income capitalization approach	Future income	0.0 to 10.8
	Loans	57	DCF method	Credit spread	0.1 to 8.3
Debt certificates issued including bonds	VR Circle	482	DCF method	Multiple-year default probabilities	0.0 to 100.0
Financial liabilities held for trading	Equity/commodity basket products	254	Local volatility model	Correlation of the risk factors considered	9.9 to 85.3
	Products with commodity volatility derived from comparable instruments	17	Local volatility model	Volatility	7.0 to 72.1
Subordinated capital	Loans	20	DCF method	Credit spread	0.3 to 3.2

Fair value measurements within Level 3 of the fair value hierarchy

The table below shows the changes in the fair value measurements of assets within Level 3 of the fair value hierarchy:

€ million	Loans and advances to customers	Financial assets held for trading	Investments	Investments held by insurance companies	Non-current assets and disposal groups classified as held for sale
Balance as at Jan. 1, 2020	907	791	1,969	5,091	175
Additions (purchases)	71	762	101	1,216	-
Transfers	-	376	-150	85	-
from Level 3 to Levels 1 and 2	-	-106	-442	-201	-
from Levels 1 and 2 to Level 3	-	482	292	286	-
Disposals (sales)	-102	-1,155	-296	-292	-141
Changes resulting from measurement at fair value	-25	-7	32	-44	-27
through profit or loss	-29	-7	-10	-131	-27
through other comprehensive income	4	-	42	87	-
Other changes	9	2	49	-26	79
Balance as at Dec. 31, 2020	861	769	1,705	6,030	86
Additions (purchases)	67	288	99	4,343	-
Transfers	-11	445	128	-177	-
from Level 3 to Levels 1 and 2	-11	-67	-150	-264	-
from Levels 1 and 2 to Level 3	-	512	278	87	-
Disposals (sales)	-176	-845	-251	-2,157	-123
Changes resulting from measurement at fair value	-32	-14	207	-539	40
through profit or loss	-24	-14	52	276	40
through other comprehensive income	-8	-	155	-815	-
Other changes	-30	2	13	13,865	160
Balance as at Dec. 31, 2021	**679**	**645**	**1,900**	**21,365**	**163**

The table below shows the changes in the fair value measurements of liabilities within Level 3 of the fair value hierarchy:

€ million	Debt certificates issued including bonds	Financial liabilities held for trading	Other liabilities	Subordinated capital
Balance as at Jan. 1, 2020	608	515	5	44
Additions (issues)	-	86	-	-
Transfers	-101	-192	-	-
from Level 3 to Level 2	-101	-396	-	-
from Level 2 to Level 3	-	204	-	-
Disposals (settlements)	-18	-140	-5	-21
Changes resulting from measurement at fair value	-6	3	-	-2
through profit or loss	-5	3	-	-2
through other comprehensive income	-1	-	-	-
Other changes	-	-	-	-1
Balance as at Dec. 31, 2020	482	271	-	20
Additions (issues)	-	86	-	-
Transfers	-	-109	-	-
from Level 3 to Level 2	-	-164	-	-
from Level 2 to Level 3	-	55	-	-
Disposals (settlements)	-55	-104	-	-4
Changes resulting from measurement at fair value	-1	3	-	4
through profit or loss	-1	3	-	5
through other comprehensive income	-	-	-	-1
Balance as at Dec. 31, 2021	**427**	**148**	**-**	**20**

As part of the processes for fair value measurement, the DZ BANK Group reviews whether the valuation methods used for the measurement are typical and whether the valuation inputs used in the valuation methods are observable in the market. This review takes place at every balance sheet date, i.e. at least every 6 months. On the basis of this review, the fair value measurements are assigned to the levels of the fair value hierarchy. In the DZ BANK Group, transfers between the levels generally take place as soon as there is a change in the inputs that is relevant to categorization in the fair value hierarchy.

In each step of these processes, both the distinctive features of the particular product type and the distinctive features of the business models of the group entities are taken into consideration.

Transfers of fair values from Levels 1 and 2 to Level 3 of the fair value hierarchy during the financial year are largely attributable to a revised estimate of the market observability of the valuation inputs used in the valuation methods. Transfers from Level 3 to Levels 1 or 2 are essentially due to the availability of a price listed in an active market and to the inclusion in the valuation method of material valuation inputs observable in the market.

The amount of gains or losses recognized in profit or loss resulting from the recurring fair value measurements within Level 3 of assets and liabilities held at the balance sheet date constituted a net gain of €555 million during the year under review (2020: net loss of €149 million). The gains or losses are included in the line items net interest income, gains and losses on trading activities, other gains and losses on valuation of financial instruments, gains and losses on investments held by insurance companies and other insurance company gains and losses, loss allowances, and other net operating income.

For the fair values of investments held by insurance companies reported within Level 3, a rise in the interest rate of 1 percent would lead to the recognition of a €34 million loss in the income statement (2020: loss of €37 million) and a loss of €1,409 million under other comprehensive income/loss (2020: loss of €1 million). The year-on-year change is due to reclassification of financial assets and a related rise in the fair values reported within Level 3.

Credit rating sensitivities were calculated separately for the fair values of investments held by insurance companies for the first time as at the reporting date. For these fair values, a worsening in the credit rating of 1 percent would lead to the recognition of a €40 million loss in the income statement and a €1,438 million loss under other comprehensive income/loss.
In the case of the fair values of loans and advances to customers, a worsening in the credit rating or a rise in the interest rate of 1 percent would lead to the recognition of a €6 million loss in the income statement (2020: loss of €11 million). For the fair values of investments, there would be a €56 million loss under other comprehensive income/loss (2020: loss of €19 million) and a €31 million loss in the income statement (2020: loss of €20 million). The fair values of non-current assets and disposal groups classified as held for sale would decrease by €1 million, the decrease being recognized in the income statement. There would have been no changes in 2020.

The fair values of bonds without liquid markets that are reported within financial assets held for trading, investments, and loans and advances to customers are given an individual adjustment spread or are measured using Bloomberg Valuation Service prices, which are observable in the market. All other things being equal, an increase in the pertinent measurement assumptions of 1 percent would lead to the recognition of a €13 million loss in the income statement (2020: loss of €24 million) and a loss of €12 million under other comprehensive income/loss (2020: loss of €16 million). Historical spreads are used for bonds recognized under subordinated capital whose spread components are no longer observable in the market. All other things being equal, an increase in the spread of 1 percent would not lead to any material change in fair value. In 2020, there would have been a €1 million increase in fair value that would have been recognized in the income statement.

An alternative assumption about the credit spreads used could lead to a significant change in the fair values of some of the ABSs reported under financial assets held for trading and under investments. All other things being equal, an increase of 1 percent in these spreads would lead to the recognition of a €1 million loss under other comprehensive income/loss (2020: loss of €2 million). A loss of €1 million would also have been recognized in the income statement in 2020.

An alternative assumption about the liquidity spreads used could lead to a significant change in respect of collateralized loan obligations reported under investments and under financial assets held for trading. All other things being equal, a rise in the liquidity spread assumptions by 1 percent would lead to a €4 million decrease in the fair values of these financial assets that would be recognized in the income statement (2020: decrease of €4 million).

Sensitivity analysis is used to calculate the aforementioned changes in the fair value measurements. Non-performing exposures, strategically held investments in subsidiaries and other shareholdings, and long-term equity investments in real estate funds whose fair values are calculated using an income capitalization approach or the net asset value are not included in the sensitivity analysis.

Exercise of option pursuant to IFRS 13.48

The option offered by IFRS 13.48 of measuring a net risk position for financial assets and financial liabilities is used for portfolios whose components are recognized under the balance sheet items loans and advances to banks, loans and advances to customers, financial assets held for trading, investments, and financial liabilities held for trading. If allocation of the portfolio-based valuation adjustments to the assets and liabilities is required, it is generally carried out in proportion to the nominal amounts of the financial instruments in question.

» 78 Assets and liabilities not measured at fair value on the balance sheet

Fair value hierarchy

Fair value measurements of assets and liabilities that are not recognized at fair value on the balance sheet, but whose fair value must be disclosed, are assigned to the levels of the fair value hierarchy as follows:

	Level 1		Level 2		Level 3	
€ million	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020
Assets	**280**	486	**240,953**	226,890	**163,286**	172,600
Cash and cash equivalents	-	-	85,763	68,148	-	-
Loans and advances to banks	-	-	103,797	100,553	3,510	4,093
Loans and advances to customers	-	-	38,943	38,347	152,287	147,620
Investments	279	486	11,781	14,959	327	393
Investments held by insurance companies	-	-	60	4,369	5,416	19,091
Property, plant and equipment, investment property, and right-of-use assets	-	-	152	154	194	148
Other assets	-	-	458	359	1,552	1,236
Non-current assets and disposal groups classified as held for sale	-	-	-	-	-	19
Liabilities	**22,129**	20,443	**299,580**	271,567	**72,961**	71,523
Deposits from banks	-	-	192,871	175,854	1,596	1,661
Deposits from customers	-	-	65,535	61,727	66,527	65,076
Debt certificates issued including bonds	22,129	20,443	40,866	33,674	-	-
Provisions	-	-	37	39	177	191
Other liabilities	-	-	226	215	1,702	1,652
Subordinated capital	-	-	46	58	2,960	2,943
Liabilities included in disposal groups classified as held for sale	-	-	-	1	-	-

Fair value measurements within Levels 2 and 3

The fair value measurements of assets and liabilities that are not recognized at fair value on the balance sheet largely correspond to the fair value measurements of assets and liabilities that are recognized at fair value on the balance sheet.

The following table shows the valuation techniques and the unobservable inputs used in these techniques for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2021.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Loans and advances to banks	Loans	3,510	DCF method	Credit spread, recovery rate
Loans and advances to customers	Building loans	60,412	Amortized cost	-
	Loans	91,875	DCF method	Credit spread, recovery rate, internal spread
Investments	ABSs	45	DCF method	Credit spread
	Bonds with adjustment spread	282	DCF method	BVAL price adjustment
Investments held by insurance companies		73	Cost	Nominal amounts
	Investment property	5,269	DCF method	Future rent, reference prices in the market
	Loans and bank accounts	6	DCF method	Yield curves, credit spread
	Loans	68	Cost	Nominal amounts
Property, plant and equipment	Investment property	194	Valuation reports	-
Other assets	Credit balances with banks	702	Cost	Nominal amounts
	Other receivables	850	Cost	Nominal amounts
Deposits from banks	Home savings deposits	1,567	Cost	-
	Loans	29	DCF method	Credit spread
Deposits from customers	Home savings deposits	66,184	Cost	-
	Loans	321	DCF method	Credit spread
	Overpayments on consumer finance loans	22	Cost	-
Provisions	Provisions for loan commitments	177	Settlement amount	-
Other liabilities	Loans	564	Cost	Nominal amounts
	Non-controlling interests in special funds	178	Cost	Nominal amounts
	Subordinated liabilities	22	DCF method	Yield curves, credit spread
	Registered securities	31	Cost	Nominal amounts
	Other payables	140	Cost	Nominal amounts
	Liabilities arising from rented software	4	Carrying amount	Assumptions regarding the exercise of extension or termination options
	Liabilities from capitalization transactions	763	Cost	Nominal amounts
Subordinated capital	Bonds with adjustment spread	2,960	DCF method	Credit spread

The following table shows the valuation techniques and the unobservable inputs used in these techniques for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2020.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Loans and advances to banks	Loans	4,093	DCF method	Credit spread, recovery rate
Loans and advances to customers	Building loans	55,517	Amortized cost	-
	Loans	92,103	DCF method	Credit spread, recovery rate, internal spread
Investments	ABSs	94	DCF method	Credit spread
	Bonds with adjustment spread	299	DCF method	BVAL price adjustment
Investments held by insurance companies		160	Cost	Nominal amounts
	Investment property	5,018	DCF method	Future rent, reference prices in the market
	Loans and bank accounts	13,848	DCF method	Yield curves, credit spread
	Loans	65	Cost	Nominal amounts
Property, plant and equipment	Investment property	148	Valuation reports	-
Other assets	Credit balances with banks	356	Cost	Nominal amounts
	Other receivables	880	Cost	Nominal amounts
Non-current assets and disposal groups classified as held for sale	Loans	4	DCF method	Credit spread
	Property, plant and equipment, investment property, and right-of-use assets	15	Cost	Nominal amounts
Deposits from banks	Home savings deposits	1,576	Cost	-
	Loans	85	DCF method	Credit spread
Deposits from customers	Home savings deposits	64,673	Cost	-
	Loans	365	DCF method	Credit spread
	Overpayments on consumer finance loans	15	Cost	-
	Other deposits	23	Cost	-
Provisions	Provisions for loan commitments	191	Settlement amount	-
Other liabilities	Bonds with adjustment spread	68	DCF method	Credit spread
	Loans	605	Cost	Nominal amounts
	Non-controlling interests in special funds	153	Cost	Nominal amounts
	Subordinated liabilities	14	DCF method	Yield curves, credit spread
	Registered securities	31	Cost	Nominal amounts
	Other payables	141	Cost	Nominal amounts
	Liabilities arising from rented software	6	Carrying amount	Assumptions regarding the exercise of extension or termination options
	Liabilities from capitalization transactions	634	Cost	Nominal amounts
Subordinated capital	Bonds with adjustment spread	2,943	DCF method	Credit spread

» 79 Financial liabilities designated as at fair value through profit or loss

A residual value method is used to determine changes in fair value attributable to changes in the DZ BANK Group’s own credit risk. In this method, the measurement effect caused by changes in own credit risk is determined by deducting the measurement effect caused by factors other than the change in own credit risk from the overall change in fair value. The cumulative changes in fair value resulting from changes in own credit risk amounted to a loss of €73 million in 2021 (2020: loss of €109 million). The use of this method ensures that the changes in fair value attributable to changes in own credit risk are not distorted by other effects caused by changes in market risk.

The following overview compares fair values with the amounts contractually required to be paid at maturity to the creditors concerned for liabilities designated as at fair value through profit or loss, but whose changes in fair value attributable to own credit risk are reported in other comprehensive income:

€ million	Fair value		Repayment amount	
	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020
Deposits from banks	3,953	4,564	3,891	4,441
Deposits from customers	8,259	9,511	7,892	8,965
Debt certificates issued including bonds	16,975	17,589	16,912	17,161
Subordinated capital	140	239	134	230
Total	**29,327**	**31,903**	**28,829**	**30,797**

In the course of the year under review, a gain of €5 million – previously reported in other comprehensive income/loss – was realized upon derecognition of financial liabilities as a result of measurement effects in connection with changes in the DZ BANK Group's own credit risk (2020: loss of €3 million). This amount was reclassified to retained earnings within equity once the financial liabilities had been derecognized. In 2020, a loss of €8 million had been reclassified to retained earnings.

» 80 Reclassification

On January 1, 2021, financial assets categorized as 'financial assets measured at amortized cost' and 'financial assets measured at fair value through profit or loss' were reclassified prospectively as 'financial assets measured at fair value through other comprehensive income' due to a change to the business model.

The change to the business model was attributable to the R+V-wide strategic program known as 'Wachstum durch Wandel' (growth through change), the key pillars of which include profitable growth. To achieve this objective, R+V decided to realign and optimize its strategic asset allocation, resulting in a comprehensive change to the management of its investments. Under the changes that have been introduced, the strategy and management used for the investment of financial instruments have been realigned, which means that they will be assigned to the 'hold to collect and sell' business model in future and no longer to the 'hold to collect' and 'other' business models.

When the financial assets measured at amortized cost of €15,606 million were reclassified, hidden reserves of €2,524 million were identified for the first time and recognized in the reserve from debt instruments measured at fair value through other comprehensive income. The loss allowances of €23 million previously recognized for these holdings were also reclassified to this reserve.

Furthermore, assets of €3,139 million that were previously categorized as 'measured at fair value through profit or loss' were reclassified to 'financial assets measured at fair value through other comprehensive income'. Loss allowances of €26 million were recognized for the affected assets for the first time in the reserve from debt instruments measured at fair value through other comprehensive income. At the time of reclassification, the reclassified assets had an average effective interest rate of 2.25 percent. As at December 31, 2021, the fair value of the reclassified assets still held was €2,079 million. In 2021, interest income of €91 million was attributable to these assets. If the assets had not been reclassified, decreases in fair value of €116 million would have been recognized in the income statement.

» 81 Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities reference standard master agreements, such as ISDA Master Agreements and German Master Agreements for Financial Futures. However, these standard master agreements do not generally satisfy the offsetting criteria in IAS 32.42 because the legal right to set off the amounts under these agreements is contingent on the occurrence of a future event.

The following tables show financial assets that were offset or that were subject to a legally enforceable global netting agreement or a similar arrangement:

AS AT DECEMBER 31, 2021

€ million	Gross amount of financial assets before offsetting	Gross amount of offset financial liabilities	Net amount of financial assets (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral received	
Derivatives	35,047	17,788	17,259	11,859	2,992	2,408
Reverse repos/securities borrowing	18,191	-	18,191	18,104	-	87
Total	**53,238**	**17,788**	**35,450**	**29,963**	**2,992**	**2,495**

AS AT DECEMBER 31, 2020

€ million	Gross amount of financial assets before offsetting	Gross amount of offset financial liabilities	Net amount of financial assets (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral received	
Derivatives	49,889	26,358	23,531	15,617	4,267	3,647
Reverse repos/securities borrowing	8,453	-	8,453	8,424	-	29
Total	**58,342**	**26,358**	**31,984**	**24,041**	**4,267**	**3,676**

The following tables show financial liabilities that were offset or that were subject to a legally enforceable global netting agreement or a similar arrangement:

AS AT DECEMBER 31, 2021

€ million	Gross amount of financial liabilities before offsetting	Gross amount of offset financial assets	Net amount of financial liabilities (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral furnished	
Derivatives	36,123	19,389	16,734	11,478	4,786	470
Repos/securities lending	977	-	977	795	28	154
Other financial instruments	209	209	-	-	-	-
Total	**37,309**	**19,598**	**17,711**	**12,273**	**4,814**	**624**

AS AT DECEMBER 31, 2020

€ million	Gross amount of financial liabilities before offsetting	Gross amount of offset financial assets	Net amount of financial liabilities (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral furnished	
Derivatives	51,897	29,906	21,991	14,633	7,045	313
Repos/securities lending	4,198	-	4,198	4,176	8	14
Other financial instruments	143	143	-	-	-	-
Total	**56,238**	**30,049**	**26,189**	**18,809**	**7,053**	**327**

» 82 Sale and repurchase agreements, securities lending

Transfers of financial assets

In 2021, the only transfers carried out by the DZ BANK Group in which the transferred assets remained on the balance sheet in their entirety were transfers under sale and repurchase agreements (repos), in which the DZ BANK Group was the original seller, and transfers as part of securities lending transactions.

Sale and repurchase agreements

The entities in the DZ BANK Group enter into sale and repurchase agreements using standard banking industry master agreements, notably the Global Master Repurchase Agreement (GMRA) and the master agreement provided by the International Securities Market Association (ISMA). Under these agreements, the buyer of the securities is permitted to make use of the securities without restriction (with no requirement for a prior counterparty default) and return securities of the same type. If the fair value of the securities received or transferred in such transactions increases or decreases, the entity concerned may be required to furnish additional collateral or may demand additional collateral.

As at the balance sheet date, the sale and repurchase agreements entered into by companies in the DZ BANK Group were exclusively genuine sale and repurchase agreements, i.e. the buyer is obliged to sell back the securities.

Sale and repurchase agreements in which DZ BANK acts as a seller (repos)

Under sale and repurchase agreements, bonds and other fixed-income securities classified as financial assets measured at fair value and financial assets measured at amortized cost are temporarily transferred to another party. As at the balance sheet date, the carrying amounts of securities subject to such sale and repurchase agreements were:

€ million	Dec. 31, 2021	Dec. 31, 2020
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**100**	**544**
Financial assets measured at fair value through profit or loss	100	400
Financial assets mandatorily measured at fair value through profit or loss	*100*	*400*
Financial assets held for trading	100	400
Financial assets measured at fair value through other comprehensive income	-	144
Financial assets mandatorily measured at fair value through other comprehensive income	-	*52*
Investments	-	52
Financial assets designated as at fair value through other comprehensive income	-	*92*
Investments	-	92
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**772**	**1,266**
Investments	772	1,266
Total	**872**	**1,810**

As at the balance sheet date, additional collateral with a carrying amount of €262 million had been furnished in connection with repos (December 31, 2020: €70 million). This collateral is recognized under financial assets held for trading and may be sold or repledged by the recipient even if the provider is not in default.

The carrying amounts of liabilities arising from sale and repurchase agreements were as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT FAIR VALUE	**100**	**538**
Liabilities associated with financial assets measured at fair value through profit or loss	100	400
Liabilities associated with financial assets mandatorily measured at fair value through profit or loss	*100*	*400*
Liabilities associated with financial assets held for trading	100	400
Liabilities associated with financial assets measured at fair value through other comprehensive income	-	138
Liabilities associated with financial assets mandatorily measured at fair value through other comprehensive income	-	*45*
Liabilities associated with investments	-	45
Liabilities associated with financial assets designated as at fair value through other comprehensive income	-	*93*
Liabilities associated with investments	-	93
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**791**	**1,273**
Liabilities associated with investments	791	1,273
Total	**891**	**1,811**

Sale and repurchase agreements in which DZ BANK acts as the buyer (reverse repos)

In reverse repo transactions, bonds and other fixed-income securities are bought on a temporary basis. As at December 31, 2021, the fair value of securities involved in such transactions was €18,165 million (December 31, 2020: €8,585 million).

The receivables arising from these reverse repo transactions and reported under financial assets held for trading and under loans and advances to banks amounted to €18,028 million as at the balance sheet date (December 31, 2020: €8,580 million). As part of the collateral management requirements, the original seller provides the DZ BANK Group with additional collateral for reverse repo transactions in which the fair value of the securities purchased is less than the amounts receivable from the seller.

Securities lending

Securities lending transactions are undertaken on the basis of the Global Master Securities Lending Agreement (GMSLA) or on the basis of individual contractual arrangements. Under these agreements, the borrower of the securities is permitted to make use of the securities without restriction and return securities of the same type. If the fair value of the securities received or transferred in such transactions increases or decreases, the entity concerned may be required to furnish additional collateral or may demand additional collateral.

Securities lending

In securities lending transactions, shares and other variable-yield securities and/or bonds and other fixed-income securities classified as financial assets measured at fair value are temporarily transferred to another party. As at the balance sheet date, the carrying amounts of securities lent under securities lending arrangements were as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**3,812**	**2,336**
Financial assets measured at fair value through profit or loss	**1,178**	**897**
Financial assets mandatorily measured at fair value through profit or loss	***1,178***	***897***
Financial assets held for trading	1,178	897
Financial assets measured at fair value through other comprehensive income	**2,634**	**1,439**
Financial assets mandatorily measured at fair value through other comprehensive income	***2,634***	***1,439***
Investments held by insurance companies	2,634	1,439
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**-**	**3**
Investments held by insurance companies	-	3
Total	**3,812**	**2,339**

Collateral is provided or received as part of collateral management arrangements in connection with financial assets held for trading and investments held by insurance companies that are lent under securities lending agreements. In this process, all positions with the counterparty concerned are netted to determine the collateral to be provided or received.

As at the balance sheet date, additional collateral with a carrying amount of €24 million had been furnished in connection with securities lending (December 31, 2020: €19 million). This collateral is recognized under financial assets held for trading and may be sold or repledged by the recipient even if the provider is not in default.

Securities borrowing

The fair value of borrowed securities as at the balance sheet date was as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
Bonds and other fixed-income securities	2,305	1,916
Shares and other variable-yield securities	26	27
Total	**2,331**	**1,943**

In addition to securities subject to sale and repurchase agreements or that have been borrowed, bonds and other fixed-income securities and shares and other variable-yield securities are accepted as additional collateral. These may be sold or repledged as collateral by the recipient, even if there is no default. As at December 31, 2021, the fair value of the additional collateral received was €65 million (December 31, 2020: €36 million).

Securities subject to a sale and repurchase or lending agreement that the recipient may sell or repledge as collateral with no requirement for a prior counterparty default

All securities transferred to another party by entities in the DZ BANK Group under sale and repurchase agreements or securities lending agreements may be sold or repledged as collateral by the recipient without restriction.

The carrying amounts of the individual balance sheet items concerned are as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
Financial assets held for trading	1,278	1,297
Investments	772	1,410
Investments held by insurance companies	2,634	1,442
Total	**4,684**	**4,149**

» 83 Collateral

The breakdown of the carrying amount of financial assets pledged as collateral for liabilities is as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
Loans and advances to banks	73,156	65,692
Loans and advances to customers	189	247
Financial assets held for trading	9,543	14,811
Investments	29,175	14,851
Investments held by insurance companies	1,290	1,311
Total	**113,354**	**96,912**

Of the total financial assets pledged as collateral for liabilities, financial assets held for trading and investments with a carrying amount of €4,999 million (December 31, 2020: €5,229 million) may be sold or repledged as collateral by the recipient, even if the relevant entity in the DZ BANK Group is not in default.

Funds received from German federal and state development banks that are to be specifically used for the purposes of development program loans are mainly passed on to affiliated banks. The corresponding loans and advances to affiliated banks serve as collateral with the German federal and state development banks.

The loans and advances to customers pledged as collateral predominantly consist of building loans issued as part of KfW development program loans. The amounts due to Germany's KfW development bank are secured by assigning to KfW the receivables arising from the forwarding of the development loans together with the collateral furnished by the borrowers.

Securities and money market placements recognized as financial assets held for trading are pledged as collateral for exchange-traded forward transactions, non-exchange-traded derivatives and for forward forex transactions. These arrangements are governed by standard industry collateral agreements.

The investments pledged as collateral comprise securities furnished as collateral for open-market operations with Deutsche Bundesbank.

The investments held by insurance companies are predominantly securities pledged as collateral as part of the reinsurance business; this collateral may only be sold or pledged by the recipient in the event of default by the provider.

» 84 Items of income, expense, gains, and losses

Net gains and losses

The breakdown of net gains or net losses on financial instruments by IFRS 9 category for financial assets and financial liabilities is as follows:

€ million	2021	2020
Financial instruments measured at fair value through profit or loss	**492**	1,571
Financial instruments mandatorily measured at fair value through profit or loss	195	1,520
Financial instruments designated as at fair value through profit or loss	298	51
Financial assets measured at fair value through other comprehensive income	**1,862**	3,573
Financial assets mandatorily measured at fair value through other comprehensive income	1,194	3,517
of which gains and losses recognized in profit or loss	2,156	1,878
of which gains and losses recognized in other comprehensive income	-1,175	1,391
of which gains and losses reclassified on derecognition from cumulative other comprehensive income to profit or loss	213	248
Financial assets designated as at fair value through other comprehensive income	668	56
Financial assets measured at amortized cost	**4,287**	4,432
Financial liabilities measured at amortized cost	**-1,331**	-2,224

Net gains or net losses comprise gains and losses on fair value measurement, impairment losses and reversals of impairment losses, and gains and losses on the sale or early repayment of the financial instruments concerned. These items also include interest income and interest expense, current income, income from profit-pooling, profit-transfer agreements, partial profit-transfer agreements, and expenses from the transfer of losses.

In connection with financial liabilities designated as at fair value through profit or loss, a gain of €39 million (2020: loss of €60 million) was recognized in other comprehensive income/loss and a gain of €514 million (2020: loss of €475 million) in profit or loss.

Interest income and expense

The following total interest income and expense arose in connection with financial assets and financial liabilities that are not measured at fair value through profit or loss:

€ million	2021	2020
Interest income	**5,925**	6,413
From financial assets measured at amortized cost including finance leases	4,199	5,115
From financial assets measured at fair value through other comprehensive income	1,726	1,298
Interest expense	**-1,335**	-2,228

Fee and commission income and expenses

The table below shows the changes in fee and commission income and expenses:

€ million	2021	2020
Fee and commission income		
From financial assets and financial liabilities not at fair value through profit or loss	172	169
From trust and other fiduciary activities	4,834	3,618
Fee and commission expenses		
For financial assets and financial liabilities not at fair value through profit or loss	-219	-240
For trust and other fiduciary activities	-2,076	-1,647

» 85 Derivatives

Derivatives are used primarily to hedge against market risk as well as for trading purposes. As at the balance sheet date, the breakdown of the portfolio of derivatives was as follows:

	Nominal amount					Fair value			
	Time to maturity			Total amount		Positive		Negative	
€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020
INTEREST-LINKED CONTRACTS	222,062	438,962	636,466	1,297,491	1,110,340	13,998	19,986	13,615	19,146
OTC products									
Forward rate agreements	31,006	-	-	31,006	22,515	-	-	-	-
Interest-rate swaps	169,302	394,824	609,751	1,173,877	998,500	12,777	17,916	11,710	15,853
Interest-rate options – bought	6,504	17,708	11,333	35,546	38,758	844	1,462	86	77
Interest-rate options – written	6,455	24,502	15,383	46,339	45,170	251	234	1,794	3,214
Other interest-rate contracts	647	270	-	917	1,291	126	374	24	1
Exchange-traded products									
Interest-rate futures	8,141	1,658	-	9,800	4,105	-	-	-	-
Interest-rate options	6	-	-	6	-	-	-	-	-
CURRENCY-LINKED CONTRACTS	106,680	27,461	7,952	142,093	126,597	1,495	1,891	1,757	1,823
OTC products									
Cross-currency swaps (excl. portfolio hedging)	8,323	16,899	7,868	33,090	32,714	391	653	743	668
Forward forex transactions	84,886	9,160	59	94,105	75,657	1,011	1,024	944	1,003
Forex options – bought	5,803	170	-	5,973	8,144	27	68	19	42
Forex options – written	7,445	1,232	4	8,681	9,845	65	146	50	106
Exchange-traded products									
Forex futures	163	-	-	163	138	1	-	-	-
Forex options	60	-	22	81	100	-	-	1	4
SHARE-/INDEX-LINKED CONTRACTS	19,298	11,747	2,558	33,603	32,464	900	744	1,578	1,553
OTC products									
Share/index options – bought	2,983	26	-	3,009	3,309	44	29	-	-
Share/index options – written	345	193	-	538	319	-	-	22	18
Other share/index contracts	534	3,229	2,043	5,805	6,096	53	56	246	378
Exchange-traded products									
Share/index futures	1,164	92	1	1,257	2,016	-	-	-	-
Share/index options	14,272	8,208	514	22,994	20,724	802	660	1,311	1,157
OTHER CONTRACTS	2,885	3,144	11,712	17,740	17,099	2	1	150	188
OTC products									
Precious metal contracts (excl. gold derivatives)	-	1	-	1	-	-	-	-	-
Commodities contracts	-	-	-	-	9	-	-	-	1
Other contracts	2,704	3,136	11,681	17,521	16,870	1	-	141	180
Exchange-traded products									
Futures	80	1	-	81	108	1	-	1	-
Options	101	6	31	138	112	-	1	8	7
CREDIT DERIVATIVES	2,399	10,442	4,774	17,614	17,474	380	337	82	94
Protection buyer									
Credit default swaps	581	1,919	370	2,870	3,366	4	6	58	63
Protection seller									
Credit default swaps	1,807	8,499	4,397	14,702	14,069	377	331	23	28
Total return swaps	11	24	7	42	38	-	-	-	3
Total	353,323	491,756	663,462	1,508,541	1,303,973	16,775	22,960	17,182	22,804

The derivatives held at the balance sheet date involved the following counterparties:

	Fair value			
	Positive		Negative	
€ million	**Dec. 31, 2021**	Dec. 31, 2020	**Dec. 31, 2021**	Dec. 31, 2020
OECD central governments	**45**	60	**106**	13
OECD banks	**13,753**	19,282	**14,480**	18,900
OECD financial services institutions	**228**	392	**237**	917
Other companies, private individuals	**2,715**	3,170	**2,256**	2,864
Non-OECD banks	**33**	57	**103**	110
Total	**16,775**	**22,960**	**17,182**	**22,804**

The Union Investment Group has capital preservation commitments under section 1 (1) no. 3 of the German Personal Pension Plan Certification Act (AltZertG) amounting to €17,157 million (December 31, 2020: €16,113 million). These commitments are the total amount of the pension contributions paid by investors into the individual variants of the *UniProfiRente* and *UniProfiRente Select* products, which represent the minimum amount that must be made available at the start of the payout phase under statutory provisions, and the guaranteed payout amounts for existing contracts that are already in the portfolio payout phase. The group also has minimum payment commitments of €363 million (December 31, 2020: €757 million) in connection with genuine guarantee funds launched by fund management companies in the group.

» 86 Hedge accounting

Risk management strategy

Fair value hedges are used as part of the risk management strategy to eliminate or reduce accounting mismatches.

Hedged items

Fair value hedges are used in the hedging of interest-rate risk. In this context, interest-rate risk refers to the risk of an adverse change in the fair value of fixed-income financial instruments caused by a change in market interest rates. The hedged financial assets are loans and advances to banks, loans and advances to customers, and investments that are categorized as ‘financial assets measured at amortized cost’ or ‘financial assets measured at fair value through other comprehensive income’. Hedged financial liabilities are deposits from banks and customers, debt certificates issued including bonds, and subordinated liabilities, all of which are measured at amortized cost. Interest-rate risk portfolios under both assets and liabilities are identified and designated as hedged items in portfolio hedges.

Hedging instruments

Swaps and swaptions are designated as hedging instruments in fair value hedges of financial assets and financial liabilities. In the DZ BANK Group, hedging instruments are reported under hedging instruments (positive fair values) and hedging instruments (negative fair values).

Assessment of hedge effectiveness

The prerequisite for recognizing a hedge is that the hedge must be highly effective on both a prospective and retrospective basis. Highly effective in this case means that the changes in fair value of the hedged items must be almost fully offset by the changes in fair value of the hedging instruments. In the case of the individual hedges entered into by the DZ BANK Group, this is achieved by ensuring that the main features of hedged items that influence their value match those of the hedging instruments and that there is a hedging ratio of 100 percent (1:1 hedging). In portfolio hedges, there is no direct economic relationship between hedged item and hedging instrument. An individual hedging ratio based on the sensitivities of the hedged items and hedging instruments is used to ensure that the respective changes in fair value more or less balance each other out. Hedge effectiveness must be assessed and documented at every balance sheet date as a minimum.

For individual hedges accounted for in application of the rules under IFRS 9, any hedge ineffectiveness is quantified retrospectively and recognized in profit or loss. IFRS 9 does not define effectiveness in terms of a mandatory range of values. If a hedge no longer satisfies the effectiveness criterion in relation to the hedge ratio, the hedge ratio must be adjusted (recalibration). If it is no longer possible to adjust the hedge ratio or if the risk management objective for the hedge has changed, the hedge must be de-designated.

Portfolio hedges that continue to be accounted for in application of the rules under IAS 39 are deemed to be a highly effective if the changes in the fair value of the hedged items are offset by the changes in the fair value of the hedging instruments within the range of 80 percent to 125 percent specified by IAS 39. If this assessment identifies that a hedge has not achieved the required effectiveness, the hedge must be reversed retrospectively to the balance sheet date of the last assessment in which the hedge was found to be effective.

In the case of fair value hedges, prospective effectiveness is assessed by using sensitivity analyses (based on the basis point value method) and linear regression analysis; it is also assessed qualitatively with the critical-terms-match method. Retrospective effectiveness is assessed primarily by using the dollar offset method, a noise threshold value, and regression analysis. In these methods, the cumulative changes in the fair value of the hedged items attributable to the hedged risk are compared with the changes in the fair value of the hedging instruments.

Gains and losses and hedge ineffectiveness from hedge accounting

In hedge accounting, hedge ineffectiveness arises when the changes in the fair value of hedging instruments do not fully offset the changes in the fair value of the hedged items. The ineffective portions of hedges are recognized in profit or loss under other gains and losses on valuation of financial instruments.

Hedge ineffectiveness can arise in fair value hedges of interest-rate risk. Some of the ways in which this can occur are where the changes in the fair values of hedged items and hedging instruments do not balance each other out in full because of differences in maturities, cash flows, and/or discount rates.

Extent of risks managed by the use of hedges

The table below presents information on the volume of hedged items and hedging instruments designated as hedges for the purposes of hedging interest-rate risk:

AS AT DECEMBER 31, 2021

€ million	Carrying amount	Nominal amount of hedging instruments	Fair value hedge adjustments included in carrying amount of hedged items: Existing hedges	Fair value hedge adjustments included in carrying amount of hedged items: Terminated hedges	Fair value changes as basis for measuring hedge ineffective-ness for the period
Assets	**59,863**	**33,337**	**534**	**654**	**-1,139**
Loans and advances to banks	7		-	-	-
Loans and advances to customers	1,579		70	72	-106
Investments	2,521		12	18	-56
Portfolio hedges of interest-rate risk	55,367		452	564	-1,299
Hedging instruments (positive fair values)	389	33,337			322
Liabilities	**12,084**	**34,247**	**171**	**115**	**1,159**
Deposits from banks	356		11	8	12
Deposits from customers	2,320		96	13	80
Debt certificates issued including bonds	251		3	4	10
Subordinated capital	10		-	-	-
Portfolio hedges of interest-rate risk	7,468		60	90	117
Hedging instruments (negative fair values)	1,678	34,247			941

AS AT DECEMBER 31, 2020

€ million	Carrying amount	Nominal amount of hedging instruments	Fair value hedge adjustments included in carrying amount of hedged items: Existing hedges	Fair value hedge adjustments included in carrying amount of hedged items: Terminated hedges	Fair value changes as basis for measuring hedge ineffective-ness for the period
Assets	**53,390**	**8,628**	**2,079**	**917**	**1,552**
Loans and advances to banks	41		-	-	-1
Loans and advances to customers	1,855		176	80	105
Investments	2,485		71	30	14
Non-current assets and disposal groups classified as held for sale	4		-	-	-
Portfolio hedges of interest-rate risk	48,844		1,832	807	1,429
Hedging instruments (positive fair values)	161	8,628			5
Liabilities	**10,622**	**51,769**	**264**	**324**	**-1,511**
Deposits from banks	509		22	10	-4
Deposits from customers	3,351		171	14	31
Debt certificates issued including bonds	371		49	7	-10
Subordinated capital	10		-	-	-
Portfolio hedges of interest-rate risk	3,743		22	293	-122
Hedging instruments (negative fair values)	2,638	51,769			-1,406

Effects of hedging instruments on cash flows

The residual maturities of the hedging instruments entered into by the DZ BANK Group to hedge interest-rate risk are as follows:

AS AT DECEMBER 31, 2021

	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years
Nominal amount (€ million)	56	1,967	8,085	33,986	23,491
Average hedged interest rate (%)	0.62	-0.23	0.08	0.75	1.24

AS AT DECEMBER 31, 2020

	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years
Nominal amount (€ million)	170	354	3,567	28,913	27,391
Average hedged interest rate (%)	1.42	1.48	1.48	0.81	1.24

Reconciliation of hedge accounting effects to equity components by type of risk

The following table shows a reconciliation of the effects from hedge accounting to corresponding components of equity. The relevant effects were those from hedges of net investments in foreign operations. These types of hedge were used only in connection with hedging the exposure to currency risk.

€ million	**2021**	2020
Reserve from hedges of net investments in foreign operations as at Jan. 1	-4	-7
Gains arising during the reporting period	-	4
Gains reclassified to the income statement because the hedged item impacted the income statement	5	-
Income taxes	-	-1
Reserve from hedges of net investments in foreign operations as at Dec. 31	**-**	**-4**

Investments in foreign operations that were previously designated as hedges of net investments in foreign operations were sold in 2021. Consequently, the reserve from hedges of net investments in foreign operations that was still remaining after the hedging relationship ended was reclassified to the income statement. In 2020, the reserve had resulted solely from hedges that had expired.

» 87 Reform of interest-rate benchmarks

The German and European banking industry is currently working on the replacement of the existing interest-rate benchmarks with (virtually) risk-free interest-rate benchmarks in implementation of the EU Benchmark Regulation and in view of international market developments. Euribor has been reformed and will be retained in its current form as an interest-rate benchmark for the foreseeable future. EONIA and the Libor settings in Swiss francs, pound sterling, Japanese yen, and euros were published for the final time for December 31, 2021. The changeover for USD Libor is scheduled for June 30, 2023. Until then, it can be used for existing business.

As it did in 2020, the DZ BANK Group is applying the temporary exceptions provided for hedge accounting resulting from the provisions in phase 1 of the reform of interest-rate benchmarks. The first step in the projects carried out was an assessment of the extent to which fair value hedges of financial instruments were subject to uncertainties as a result of the reform of interest-rate benchmarks. These uncertainties stemmed from market participants’ expectations regarding implementation of the transition to the alternative interest-rate benchmarks. Over the course of 2021, the hedging instruments were switched over from the interest-rate benchmarks published for the final time at the end of 2021 to virtually risk-free interest-rate benchmarks. The hedging instruments that have not yet been switched over are pegged almost exclusively to USD Libor. They are due to mature after the likely date on which USD Libor will cease to apply, thereby creating uncertainty in respect of these hedges. The DZ BANK Group intends to switch over these financial instruments in the same way as used for the successful transition of the financial instruments that previously referenced GBP Libor and CHF Libor. The current assumption is that the USD Libor changeover will also not lead to dedesignation of existing hedges.

The Libor-related risk attaching to the hedges can be seen from the nominal amounts of the hedging instruments shown below:

AS AT DECEMBER 31, 2021

	CHF Libor 3M	CHF Libor 6M	USD Libor 3M	USD Libor 6M
Nominal amount (€ million)	97	-	1,985	-
Weighted average maturity (years)	0.5	-	6.5	-

AS AT DECEMBER 31, 2020

	CHF Libor 3M	CHF Libor 6M	USD Libor 3M	USD Libor 6M
Nominal amount (€ million)	93	10	2,841	19
Weighted average maturity (years)	1.5	7.0	7.3	3.8

Alongside the exceptions for phase 1, Interest Rate Benchmark Reform – Phase 2 (Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4, and IFRS 16) are applied from 2021 onward (an explanation of the amendments to the standards can be found in note 2). In the DZ BANK Group, the outstanding switch of USD Libor to SOFR is particularly significant, as was the switch (now completed) of the EONIA and Libor interest-rate benchmarks. The transition phase before the planned replacement of USD Libor involves numerous uncertainties and risks, concerning not only new market practices – some of which are still to be developed – and the establishment of the alternative interest-rate benchmarks in the markets but also the risks described below.

If the bilateral negotiations with counterparties do not reach a successful conclusion before USD Libor is discontinued, interest-rate basis risk may arise. There may be uncertainties about the interest-rate benchmark to be used that were not foreseeable at the time that the contracts were entered into. Litigation risk may occur if no agreement is reached on implementing the IBOR reform in existing contracts. This may potentially lead to legal disputes.

If IT system upgrades and the changeover of the relevant contracts are not completed by the specified deadlines, there is a risk that the available courses of action in respect of the transactions concerned may be restricted. This could give rise to business risks (such as withdrawal from profitable areas of business), legal risks (such as compensation claims), and reputational risks.

Further risks could arise if the transition from USD Libor to SOFR for certain contracts does not permit application of the exemptions introduced in phase 2. This could result in the discontinuation of hedges and thus lead to increased earnings volatility.

Strategies for minimizing interest-rate basis risk and litigation risk are the early initiation of contact with counterparties and achieving a fair balance between the interests of issuers and lenders in the course of the transition (based on the market standards that are becoming established). External legal support and efforts to reach agreement on contractual amendments in line with the phase 2 rules should also help to reduce the aforementioned risks.

Significant progress with switching over the interest-rate benchmarks was achieved in 2021. The transition from EONIA to €STR and the changeover of the Libor interest-rate benchmarks (with the exception of USD Libor and selected financial instruments) were implemented. In order to manage the scope and complexity of the transition and the resulting risks, the DZ BANK Group set up projects involving collaboration between different divisions in which the technical and process-related foundations were laid and the specific business changes were planned and implemented. These projects followed a risk-based approach so that any risks arising could be identified and resolved as quickly as possible. This was done, for example, by testing the affected IT systems, closely monitoring implementation progress, and rigorously applying mitigation strategies. All relevant stakeholders were kept up to date on progress. Detailed plans and processes continue to be drawn up to ensure that the transition of the USD Libor transactions is in line with official expectations and adheres to the milestones specified for the banking sector.

The DZ BANK Group is represented in currency-area-specific working groups so that it can support an orderly transition by the relevant deadlines. The group also applies the ISDA 2020 IBOR Fallbacks Protocol and the German Master Agreement for Financial Futures of the Bundesverband deutscher Banken (BdB) [Association of German Banks].

The aforementioned risks for the USD Libor transition and the measures taken to reduce them also applied to the financial instruments that have now been successfully switched up to the point at which they were switched.

The table below shows the carrying amounts of the non-derivative financial instruments and the nominal amounts of the derivatives for which the switch to alternative interest-rate benchmarks had not yet taken place as at the reporting date. Financial instruments that will expire before any potential transition are not included.

AS AT DECEMBER 31, 2021

€ million	Non-derivative financial assets	Non-derivative financial liabilities	Derivatives
USD Libor	5,442	761	86,748
GBP Libor	822	23	265
CHF Libor	4	-	228
Other Libor	60	-	-

The financial instruments that do not reference USD Libor primarily relate to existing business that is difficult to switch, known as the ‘tough legacy’. As a temporary solution for 2022, the Financial Conduct Authority has decided to publish a synthetic (non-representative) GBP Libor for existing business that references GBP Libor. The EU has introduced a transitional regulation for CHF Libor that specifies compounded SARON with different spread adjustments in the various tenors as a replacement interest rate. The ISDA 2020 IBOR Fallbacks Protocol applies to most of the derivatives held by the DZ BANK Group as at the balance sheet date that reference CHF Libor.

» 88 Nature and extent of risks arising from financial instruments and insurance contracts

With the exception of the qualitative and quantitative disclosures pursuant to IFRS 7.35F(a)-36(b), the disclosures on the nature and extent of risks arising from financial instruments (IFRS 7.31-42) and insurance contracts (IFRS 4.38-39A) are included in the group management report in chapter VII 'Risk report', sections 5 'Liquidity adequacy' and 7 'Credit risk', section 9 'Market risk' for the Bank sector, and sections 15 'Actuarial risk' and 16 'Market risk' for the Insurance sector. The disclosures pursuant to IFRS 7.35F(a)-36(b) can be found in this note in the notes to the consolidated financial statements. Disclosures on the maturity analysis in accordance with IFRS 7.39(a) and (b) and IFRS 4.39(d)(i), together with disclosures on the claims rate trend for direct non-life insurance business and for the inward reinsurance business in accordance with IFRS 4.39(c)(iii), can be found within the notes to the consolidated financial statements in notes 42 and 89.

Credit risk management practices

The rules for recognizing loss allowances are based on the calculation of expected losses in the lending business, on investments, on investments held by insurance companies, and on other assets. The impairment rules are applied only to those financial assets that are not measured at fair value through profit or loss. These are:

– Financial assets measured at amortized cost and
– Debt instruments held as financial assets measured at fair value through other comprehensive income.

The impairment rules are also applied to:

– Financial guarantee contracts and loan commitments that fall within the scope of IFRS 9 and are not recognized at fair value through profit or loss,
– Lease receivables, and
– Trade receivables and contract assets pursuant to IFRS 15.

In accordance with IFRS 9, the three-stage approach is used, additionally taking POCI assets into account, to determine the expected losses:

– Stage 1: For financial assets whose credit risk has not increased significantly since initial recognition that were not impaired upon initial recognition, the 12-month credit loss is recognized. Interest is recognized on the basis of the gross carrying amount.
– Stage 2: For financial assets whose credit risk has increased significantly since initial recognition, the loss allowances are determined in the amount of the assets' lifetime expected credit losses. Interest is recognized on the basis of the gross carrying amount.
– Stage 3: Financial assets are classified as impaired and thus assigned to stage 3 if they are deemed to be in default pursuant to article 178 of the Capital Requirements Regulation (CRR) as operationalized in the DZ BANK Group's definition of default. Because the indicators and events deemed to be stage 3 criteria under IFRS 9 cover the same scope and, at the same time, lead to default pursuant to article 178 CRR, there is a correlation between these two classifications. Therefore, if the financial assets are in default, they are also classified as impaired and assigned to stage 3. Here too, loss allowances are recognized in the amount of the lifetime expected credit losses. Interest income is calculated on the amortized cost after loss allowances using the effective interest method.
– POCI assets: Financial assets that are already deemed impaired upon initial recognition are not assigned to the 3-stage model and are reported separately. Credit-impaired financial assets are initially recognized at fair value rather than at their gross carrying amount. Consequently, interest is recognized for these assets using a risk-adjusted effective interest rate.

The review of whether the credit risk of financial assets, financial guarantee contracts, and loan commitments has increased significantly since initial recognition is carried out on an ongoing basis. The assessment is conducted both for individual financial assets and for portfolios of assets using quantitative and qualitative analysis. As a rule, quantitative analysis looks at the expected credit risk over the entire residual life of the financial instruments in question. Macroeconomic information is also factored in by transferring these inputs to shift factors for determining the default probability. For the quantitative transfer criterion, the credit risk as at the balance sheet date for the residual life is compared with the assets' credit risk over the same maturity period estimated at the time of initial recognition. The thresholds that indicate a significant increase in credit risk are determined for each portfolio separately relative to the portfolio's past migrations of default probability. Internal risk measurement systems, external credit ratings, and risk forecasts are also used to assess the credit risk of financial assets. In 2021, the quantitative transfer criterion was adjusted in order to set a maximum value for these thresholds of 200 percent of the increase in credit risk.

There are also 3 qualitative transfer criteria. Assets for which forbearance measures have been agreed, assets where the counterparty has been put on the watchlist for the early identification of risk, and assets where payments are more than 30 days past due also have significantly increased credit risk and are assigned to stage 2. Payments being more than 30 days past due is deemed a backstop criterion because, as a rule, the other transfer criteria mean that financial assets are allocated to stage 2 well before payments become more than 30 days past due.

Assets with low credit risk and/or an investment-grade credit rating are also monitored for increases in credit risk and for credit rating changes. If the quantitative transfer threshold is exceeded, however, these assets are not transferred to stage 2 due to the low credit risk exemption. The assets are transferred to stage 2 only if a non-investment-grade credit rating is awarded or if a qualitative transfer criterion applies. The scope of the low credit risk exemption was expanded in 2021 and now also applies to loans and advances, undrawn loan commitments, and financial guarantee contracts, having previously applied exclusively to securities.

If, on the balance sheet date, it is found that there is no longer a significant increase in credit risk compared with previous balance sheet dates, the financial assets in question are transferred back to stage 1 and the loss allowances are brought back down to the level of the 12-month expected credit loss. If a financial instrument in stage 3 recovers, the difference between the interest income determined for the period of credit impairment on the basis of amortized cost and the actual interest income recognized in respect of the financial instrument for the period concerned is reported as a reversal of an impairment loss or a reversal of loss allowances. A transfer back from stage 3 is carried out if there are no longer indicators of credit impairment. At the same time, the regulatory default status is revoked and specified cure periods are taken into account.

Expected losses are calculated as the probability-weighted present value of the expected defaults over the estimated residual life from default events within the next 12 months for assets assigned to stage 1 of the impairment model and from default events over the entire residual life for assets assigned to stage 2. The expected losses are discounted with their original effective interest rate. This calculation uses the regulatory model (probability of default, loss given default, and expected loan amount at the time of default), with adjustments to satisfy the requirements of IFRS 9. The estimated probability of default incorporates both historical and forward-looking default information. This is applied when loss allowances are determined, in the form of shifts in the default probabilities calculated using statistical methods (known as shift factors). Depending on the portfolio, the calculation of the expected loss for specific exposures in stage 3 also uses this type of parameter-based approach or draws on individual expert appraisals of the achievable cash flows and probability-weighted scenarios at individual transaction level.

Loss histories, adjusted to reflect forecast future defaults, serve as the basis for determining expected losses. As at the reporting date, 3 macroeconomic scenarios based on empirical estimates were factored in. These scenarios specifically look at future trends in the labor market, interest rates in the money market, changes in gross domestic product, inflation, and real estate prices. To ensure that the expected loss is not distorted, the

DZ BANK Group uses a number of scenarios when determining the risk parameters, which are then factored into the calculation of the level of the loss allowance with a probability weighting. The methods and assumptions, including the forecasts, are validated regularly.

For the purpose of calculating loss allowances for portfolios, the portfolios are grouped according to shared credit risk characteristics, e.g. credit rating, date of origination, residual life, industry and origin of the borrower, and type of asset.

Directly recognized impairment losses reduce the carrying amounts of assets directly. Unlike loss allowances, which are estimates, directly recognized impairment losses are specified in an exact amount if this is justified because the receivable is not collectible (e.g. as a result of the notification of an insolvency ratio). Impairment losses can be recognized directly by writing down the asset value and/or by using existing loss allowances. As a rule, asset values are written down directly after all recovery and enforcement measures have been completed. Directly recognized impairment losses are also applied to insignificant amounts.

For various input parameters in the loss allowance model, it is assumed that developments observable in the past are no longer representative of future developments. In the consumer finance business, post-model adjustments totaling €105 million were therefore carried out in addition to the adjustment of the model-driven default probability profiles (referred to as shift factors) as at the reporting date. This helps to ensure that expectations regarding customer behavior in the face of new legal requirements, the ongoing unique circumstances created by the COVID-19 pandemic, and a number of other risk drivers are reflected that are not yet factored into the models, including the shift factors. The intention is to factor the changes into the risk models directly as soon as meaningful data is available. Until then, the post-model adjustments will be validated regularly and, if necessary, adapted to changed circumstances.

Impact of COVID-19

During the COVID-19 pandemic, the established models and processes for calculating expected losses in accordance with IFRS 9 have generally been retained.

Current economic conditions against the backdrop of COVID-19 are mainly taken into consideration by updating the shift factors. On the basis of consultation with relevant experts, the shift factors determined using statistical methods were overridden in the case of portfolio segments affected by the pandemic. This was due to the unchanged macroeconomic uncertainties, which have not been seen on this scale before, and because of the extensive government support measures. This ensures that the shift factors used are in line both with experts' expectations and with the forecast changes in macroeconomic factors for the calculation of expected losses.

The expected macroeconomic conditions are thus taken into account, primarily by adjusting the model-based default probability profiles used in economic and regulatory risk management (known as shift factors). The shift factors are used to include current economic conditions (known as a point-in-time focus) and forecasts of future economic conditions for the years covered by the macroeconomic forecast period in the determination of loss allowances. These shift factors are derived from macroeconomic inputs for various levels of default probability using stress test models that already existed or that were developed for IFRS 9. The basis for the shift factors applied as at the balance sheet date are the macroeconomic forecasts provided by the internal Economic Roundtable in November 2021. As at the balance sheet date, 3 macroeconomic scenarios (baseline scenario, risk scenario I, and risk scenario II) were taken into account with a weighting of 65 percent (baseline scenario), 15 percent (risk scenario I), and 20 percent (risk scenario II).

The baseline scenario is based on the assumption of an increasingly rapid recovery in consumer spending, capital expenditure, and foreign trade. In subsequent years, it is assumed that national economies will return to their trend growth rates.

Risk scenario I ('resurgence of COVID-19 pandemic, global weakening of demand') is based on the assumption that the COVID-19 pandemic flares up again. In this scenario, new, more aggressive mutations of the virus are possible against which the existing vaccines are not effective. Once again, there is a sharp increase in case numbers and in hospital bed occupancy, even in countries with high vaccination rates. In this scenario, eurozone countries again have to impose very strict restrictions on public life. This causes a temporary slump in economic output in 2022. Concerns about the emergence of new virus variants again create sustained uncertainty among companies and consumers. There is a lasting decline in demand, which causes a marked slowdown in the global economic recovery in subsequent years. Inflation is noticeably lower than in the baseline scenario.

In risk scenario II ('overheating of the US economy, inflation becomes entrenched globally'), the economic recovery in the US causes the economy to overheat. A persistent, unexpectedly sharp rise in demand is triggered by the extensive fiscal programs or by households spending the savings they have accumulated during the pandemic. Companies try to satisfy the surge in demand by increasing capacity, but the labor market cannot keep up. This results in a considerable shortage of skilled workers, leading to large wage rises. A wage-price spiral sets in and the inflation rate rises rapidly. The overheating effect spills over to Europe. The rate of exports to the US increases sharply, commodity prices jump, and the euro/dollar exchange rate weakens significantly. Consequently, inflationary pressure grows markedly in Europe too. Unlike in the baseline scenario, however, the increase in inflation lasts longer in risk scenario II. Elevated inflation continues to become entrenched in subsequent years. The central banks initially assume that the increase in inflation is temporary, react too slowly to developments in the real economy, and then have to take more intensive measures. The key interest rates of the US Federal Reserve and the ECB are raised in unexpectedly large increments, with a much stronger increase in money market rates in the US. The financial markets are not ready for this, resulting in turmoil. This creates adverse effects in the financial markets. Yields on government bonds in the US and Europe rise sharply, and equity markets experience a brief slump.

The main macroeconomic forecasts for 2022 to 2025 used to calculate the expected loss as at the balance sheet date were as follows.

		2022			2023			2024			2025		
		Baseline	Risk I	Risk II	Baseline	Risk I	Risk II	Baseline	Risk I	Risk II	Baseline	Risk I	Risk II
DAX 30, Germany	Index	16,540	12,720	15,900	17,370	13,990	14,310	18,240	14,550	15,740	18,970	15,130	16,530
EURO STOXX 50, EU	Index	4,370	3,360	4,200	4,550	3,700	3,780	4,730	3,850	4,160	4,870	4,000	4,370
Unemployment rate, Germany	%	5.25	6.50	4.50	5.00	6.25	4.25	4.75	6.00	4.00	4.50	5.75	3.75
Harmonized unemployment rates, EU	%	6.75	8.50	6.50	6.50	7.75	6.00	6.25	7.25	5.75	6.00	7.00	5.50
Real GDP growth, Germany (seasonally and calendar-adjusted)	Compared with prior year (%)	4.50	0.00	5.00	1.75	1.50	3.00	1.25	2.00	2.50	1.00	1.50	1.00
Real GDP growth, EU (seasonally and calendar-adjusted)	Compared with prior year (%)	4.75	0.00	5.00	2.25	1.50	3.00	1.50	2.50	2.00	1.25	2.00	1.25

The need to override the shift factors was evaluated in consultation with experts. Different group entities are responsible for this task depending on the shift segment, which constitutes the aggregation of the rating segments. The need to override the shift factors for the shift segments particularly affected by the COVID-19 pandemic was ascertained in groupwide consultation because the models cannot fully take account of government support measures or the current market situation.

The methodology for the process of overriding the model shift factors at group level was unchanged compared with December 31, 2020.

To mitigate the impact of COVID-19, borrowers and the entities in the DZ BANK Group have been agreeing on individual support measures since the start of the pandemic, including the temporary deferral of capital repayments. Besides these individual measures, other measures were taken in the context of legislative and non-legislative moratoria on repayments. These measures in the context of moratoria on repayments had largely expired as at the balance sheet date, with the exception of the legislative moratoria in Hungary, which were extended on a smaller scale until June 30, 2022. In accordance with the EBA Guidelines on legislative and non-legislative moratoria on loan repayments applied in the light of the COVID-19 crisis in the event of financial difficulties on the part of borrowers, the general legislative and non-legislative moratoria were, as a rule, not classified as forbearance measures and therefore did not lead to a forbearance-related transfer between stages within the impairment model. A transfer between stages still took place if other transfer criteria were met.

No material deterioration in the value of collateral held in the form of mortgages on real estate is currently observable in connection with the COVID-19 pandemic. The COVID-19 pandemic is particularly affecting real estate in the hotel sector and the non-food segment of the retail sector, e.g. department stores and shopping malls, because they have been hit disproportionately hard by the pandemic as a result of having to close during the lockdowns. The impact of the pandemic on the value of the real estate held as collateral can currently be offset by, for example, low interest rates, low vacancy rates, and a conservative finance structure. Any potential write-down of the value of real estate held as collateral is monitored on an ongoing basis, taking account of how the pandemic continues to unfold. In addition, the pandemic has an impact on the collateral furnished in connection with shipping finance. The pandemic has also led to a significant shift in demand from services to goods. Demand for goods will be sustained due to the economic stimulus packages introduced in response to the crisis. At the same time, logistics processes are faced with considerable disruption, for example because ships are not permitted to dock if crew members have COVID-19 or because of outbreaks of the virus among port workers. Consequently, the general capacity utilization of ships is very high and charter rates have reached very elevated levels. The carrying amounts of the collateral are updated regularly using independent market data to ensure that the consequences of the pandemic have also been factored in. These updated collateral values were incorporated into the calculation of loss allowances for expected losses in the reporting period.

As was also the case in 2020, the COVID-19 pandemic resulted in transfers between the stages of the impairment model in the case of the gross carrying amounts of the financial instruments in the classes 'financial assets measured at fair value', 'financial assets measured at amortized cost', and 'finance leases' and in the case of the nominal amounts in the class 'financial guarantee contracts and loan commitments'. The transfers were largely the result of taking account of expected macroeconomic conditions, primarily by adjusting the model-based default probability profiles. A qualitative stage 2 transfer was also carried out at sectoral level. This affected commercial real estate finance transactions in which the main asset is in the shopping mall sector.

The reversal of loss allowances in 2021 for the classes 'financial assets measured at fair value', 'financial assets measured at amortized cost', 'finance leases', and 'financial guarantee contracts and loan commitments' in connection with the COVID-19 pandemic is the result of taking account of expected macroeconomic conditions, primarily by adjusting the model-based default probability profiles. This updating has a direct effect on the probability of default of the financial instruments, which affects both the transfer between stages and the reversal of loss allowances within the stages. In 2020, taking account of expected macroeconomic conditions in connection with the COVID-19 pandemic had resulted in an addition to loss allowances.

Loss allowances and gross carrying amounts

In the DZ BANK Group, loss allowances are recognized for the classes 'financial assets measured at fair value', 'financial assets measured at amortized cost', 'finance leases', and 'financial guarantee contracts and loan commitments' in the amount of the expected credit losses. Trade receivables and contract assets that fall within the scope of IFRS 15 are assigned to the 'financial assets measured at amortized cost' class.

Financial assets measured at fair value

€ million	Stage 1 Loss allowances	Stage 1 Fair value	Stage 2 Loss allowances	Stage 2 Fair value	Stage 3 Loss allowances	Stage 3 Fair value
Balance as at Jan. 1, 2020	9	95,779	1	59	30	19
Addition/increase in loan drawdowns	4	21,832	-	32	-	-
Change to financial assets due to transfer between stages	1	-641	-1	641	-	-
Transfer from stage 1	-	-759	-	759	-	-
Transfer from stage 2	1	118	-1	-118	-	-
Use of loss allowances/directly recognized impairment losses	-1	-	-	-	-8	-
Derecognitions and repayments	-2	-13,222	-	-45	-	-10
Changes to models/risk parameters	10	-	3	-	-	-
Additions	15	-	5	-	-	-
Reversals	-5	-	-2	-	-	-
Amortization, fair value changes, and other changes in measurement	-	2,546	-	14	-	9
Exchange differences and other changes	-	-78	-	-	-1	-
Deferred taxes	-2	-	-	-	3	-
Balance as at Dec. 31, 2020	19	106,216	3	701	24	18
Addition/increase in loan drawdowns	42	44,214	1	171	-	15
Change to financial assets due to transfer between stages	5	53	-5	-68	-	15
Transfer from stage 1	-	-404	-	401	-	3
Transfer from stage 2	5	457	-5	-471	-	14
Transfer from stage 3	-	-	-	2	-	-2
Use of loss allowances/directly recognized impairment losses	-	-	-	-	-1	-4
Derecognitions and repayments	-9	-23,324	-1	-120	-	-10
Changes to models/risk parameters	-27	-	5	-	2	-
Additions	21	-	7	-	2	-
Reversals	-48	-	-2	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-5,937	-	-12	-	-1
Exchange differences and other changes	-	137	-	2	-	1
Deferred taxes	-4	-	-	-	-	-
Balance as at Dec. 31, 2021	**26**	**121,359**	**3**	**674**	**25**	**34**

Financial assets measured at amortized cost

	Stage 1		Stage 2		Stage 3		POCI assets	
€ million	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount
Balance as at Jan. 1, 2020	218	348,217	224	8,229	1,823	3,885	1	31
Addition/increase in loan drawdowns	180	7,541,364	92	14,385	618	1,989	7	70
Change to financial assets due to transfer between stages	155	-7,833	-254	6,588	103	1,239	-	-
Transfer from stage 1	-71	-12,762	68	12,140	3	622	-	-
Transfer from stage 2	211	4,810	-357	-5,707	146	891	-	-
Transfer from stage 3	15	119	35	155	-46	-274	-	-
Use of loss allowances/directly recognized impairment losses	-	-1	-1	-	-604	-37	-1	-4
Reclassifications to non-current assets and disposal groups classified as held for sale	-	-51	-	-	-	-	-	-
Derecognitions and repayments	-141	-7,511,144	-120	-15,324	-557	-3,013	-11	-56
Changes to models/risk parameters	-122	-	423	-	309	-	4	-
Additions	185	-	656	-	729	-	9	-
Reversals	-307	-	-233	-	-420	-	-5	-
Modifications	-	-6	-1	-2	-	-	-	-
Modification losses	-	-6	-1	-2	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-1,347	-	-92	-	-297	-	-
Positive change in fair value of POCI assets								26
Exchange differences and other changes	-4	-1,559	-4	430	-20	-19	7	2
Changes in the scope of consolidation	-	37	-	3	-	-	-	-
Addition of subsidiaries	1	186	-	3	5	5	-	-
Derecognition of subsidiaries	-1	-149	-	-	-5	-5	-	-
Balance as at Dec. 31, 2020	286	367,677	359	14,217	1,672	3,747	7	69
Addition/increase in loan drawdowns	170	15,652,720	81	29,831	696	2,234	1	71
Change to financial assets due to transfer between stages	205	-3,371	-272	2,870	71	501	-	-
Transfer from stage 1	-57	-10,526	55	10,450	2	76	-	-
Transfer from stage 2	249	7,087	-359	-7,785	110	698	-	-
Transfer from stage 3	13	68	32	205	-41	-273	-	-
Use of loss allowances/directly recognized impairment losses	-	-	-1	-	-440	-33	-	-5
Reclassifications to liabilities included in disposal groups classified as held for sale	-	-124	-	-	-	-15	-	-
Derecognitions and repayments	-186	-15,641,523	-159	-29,961	-829	-3,478	-10	-96
Changes to models/risk parameters	-193	-	363	-	27	-	12	-
Additions	139	-	623	-	398	-	18	-
Reversals	-332	-	-260	-	-371	-	-6	-
Modifications	-	1	1	-1	-	-	-	-
Modification gains	-	2	1	2	-	-	-	-
Modification losses	-	-1	-	-3	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	340	-	38	-	-100	-	-
Positive change in fair value of POCI assets								49
Exchange differences and other changes	-	489	2	-51	70	14	3	2
Changes in the scope of consolidation	-	-	-	233	-	-	-	-
Addition of subsidiaries	-	-	-	233	-	-	-	-
Balance as at Dec. 31, 2021	**282**	**376,209**	**374**	**17,176**	**1,267**	**2,870**	**13**	**90**

The undiscounted expected credit losses on purchased or originated credit-impaired assets that were recognized for the first time during the reporting period totaled €120 million (2020: €99 million).

Non-current assets and disposal groups classified as held for sale that were previously recognized as financial assets measured at amortized cost

€ million	Stage 1 Loss allowances	Stage 1 Gross carrying amount	Stage 2 Loss allowances	Stage 2 Gross carrying amount	Stage 3 Loss allowances	Stage 3 Gross carrying amount
Balance as at Jan. 1, 2020	-	194	-	-	3	7
Addition/increase in loan drawdowns	-	24	-	-	-	16
Derecognitions and repayments	-	-215	-	-	-	-11
Changes to models/risk parameters	-	-	-	-	-	-
Additions	-	-	-	-	1	-
Reversals	-	-	-	-	-1	-
Amortization, fair value changes, and other changes in measurement	-	-	-	-	-	-204
Exchange differences and other changes	-	1	-	-	-3	192
Balance as at Dec. 31, 2020	-	4	-	-	-	-
Derecognitions and repayments	-	-4	-	-	-	-
Balance as at Dec. 31, 2021	**-**	**-**	**-**	**-**	**-**	**-**

Finance leases

€ million	Stage 1 Loss allowances	Stage 1 Gross carrying amount	Stage 2 Loss allowances	Stage 2 Gross carrying amount	Stage 3 Loss allowances	Stage 3 Gross carrying amount
Balance as at Jan. 1, 2020	3	1,374	5	148	8	25
Addition/increase in loan drawdowns	2	133	13	6	15	2
Change to finance leases due to transfer between stages	3	-234	-3	204	-4	36
Transfer from stage 1	-2	-398	2	382	-	16
Transfer from stage 2	4	159	-9	-192	5	39
Transfer from stage 3	1	5	4	14	-9	-19
Derecognitions and repayments	-6	-471	-10	-97	-7	-29
Changes to models/risk parameters	-	-	1	-	-	-
Additions	-	-	1	-	-	-
Balance as at Dec. 31, 2020	2	802	6	261	12	34
Addition/increase in loan drawdowns	3	109	8	6	26	2
Change to finance leases due to transfer between stages	2	-16	-	3	-6	13
Transfer from stage 1	-1	-162	1	157	-	5
Transfer from stage 2	2	142	-4	-165	2	23
Transfer from stage 3	1	4	3	11	-8	-15
Derecognitions and repayments	-5	-347	-8	-94	-18	-20
Balance as at Dec. 31, 2021	**2**	**548**	**6**	**176**	**14**	**29**

Financial guarantee contracts and loan commitments

	Stage 1		Stage 2		Stage 3		POCI assets	
€ million	Loss allowances	Nominal amount	Loss allowances	Nominal amount	Loss allowances	Nominal amount	Loss allowances	Nominal amount
Balance as at Jan. 1, 2020	45	64,937	10	575	140	282	-	-
Addition/increase in loan drawdowns	92	78,042	25	2,175	54	279	4	27
Change to financial guarantee contracts and loan commitments due to transfer between stages	-2	-1,993	-	1,853	2	140	-	-
Transfer from stage 1	-10	-2,257	10	2,139	-	118	-	-
Transfer from stage 2	8	262	-11	-294	3	32	-	-
Transfer from stage 3	-	2	1	8	-1	-10	-	-
Derecognitions and repayments	-65	-65,755	-30	-2,539	-73	-443	-3	-18
Changes to models/risk parameters	-8	-	33	-	10	-	-	-
Additions	42	-	54	-	73	-	-	-
Reversals	-50	-	-21	-	-63	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-179	-	-1	-	-	-	-
Exchange differences and other changes	-	-493	-	382	-4	2	-	-
Balance as at Dec. 31, 2020	62	74,559	38	2,445	129	260	1	9
Addition/increase in loan drawdowns	133	90,732	157	3,777	51	228	1	58
Change to financial guarantee contracts and loan commitments due to transfer between stages	22	-930	-25	828	3	102	-	-
Transfer from stage 1	-6	-1,742	6	1,738	-	4	-	-
Transfer from stage 2	27	805	-32	-928	5	123	-	-
Transfer from stage 3	1	7	1	18	-2	-25	-	-
Derecognitions and repayments	-88	-85,334	-49	-3,927	-72	-320	-1	-65
Changes to models/risk parameters	-66	-	-82	-	15	-	-	-
Additions	36	-	54	-	58	-	1	-
Reversals	-102	-	-136	-	-43	-	-1	-
Amortization, fair value changes, and other changes in measurement	-	176	-	8	-	1	-	-
Exchange differences and other changes	-	-27	-	24	-16	-	-	-
Balance as at Dec. 31, 2021	**63**	**79,176**	**39**	**3,155**	**110**	**271**	**1**	**2**

Contractual modifications and derecognitions

The negotiation or modification of contractually agreed cash flows relating to a financial asset leads to a modified asset. The modification of contractually agreed cash flows can lead to the derecognition of the existing financial asset and the recognition of a new one. In the case of modifications that do not lead to the derecognition of the financial asset (non-substantial contractual modifications), the modifications of the contractually agreed cash flows are recognized as a modification gain or loss in the amount of the difference between the originally agreed cash flows and the modified cash flows discounted with the original effective interest rate. If substantial modifications are made to the contract for a financial asset, the asset is derecognized and then recognized as a new asset. The POCI asset rules apply to impaired assets (stage 3). If contractual modifications for a financial asset do not have a substantial impact, the asset is reviewed to ascertain whether credit risk has increased significantly since initial recognition. The assessment to determine whether there has been a significant deterioration in the credit quality of modified assets compares the probability of default based on the modified cash flows and on the residual maturity as at the reporting date against the probability of default based on the original cash flows and residual maturity on initial recognition.

In 2021, contractually agreed payments in relation to financial assets allocated to stages 2 and 3 of the impairment model with an amortized cost of €636 million (December 31, 2020: €323 million) were modified to take account of changes in contractual cash flows. The modifications resulted in a modification loss of €2 million (2020: €2 million).

The gross carrying amount of financial assets whose contractually agreed cash flows were modified and that had been allocated to stage 2 in the impairment model but were transferred to stage 1 during the reporting period amounted to €36 million (2020: €1 million).

Maximum exposure to credit risk

The DZ BANK Group is exposed to credit risk from financial instruments. The maximum exposure to credit risk is represented by the fair value, amortized cost, or nominal amount of financial instruments. The following collateral is held to reduce the exposure to this maximum credit risk:

AS AT DECEMBER 31, 2021

€ million	Maximum exposure to credit risk	
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**189,490**	
Financial assets measured at fair value through profit or loss	**67,422**	
Financial assets mandatorily measured at fair value through profit or loss	58,707	
Financial assets designated as at fair value through profit or loss	8,715	
Financial assets measured at fair value through other comprehensive income	**122,068**	
Financial assets mandatorily measured at fair value through other comprehensive income	122,068	
of which credit-impaired		
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**395,328**	
of which credit-impaired		
FINANCE LEASES	**731**	
of which credit-impaired		
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**83,123**	
of which credit-impaired		

AS AT DECEMBER 31, 2021

€ million	Maximum exposure to credit risk	
Non-current assets and disposal groups classified as held for sale from financial assets measured at fair value	132	

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	438	**1**	**13,178**	**310**	**3,000**	**926**
	376	**1**	**20**	**21**	**217**	**56**
	207	1	19	21	217	-
	169	-	1	-	-	56
	62	**-**	**13,158**	**289**	**2,783**	**870**
	62	-	13,158	289	2,783	870
	-	-	46	-	-	-
	7,667	**3,269**	**108,872**	**1,381**	**8,884**	**4,403**
	113	228	585	100	79	128
	6	**-**	**-**	**2**	**-**	**-**
	-	-	-	1	-	-
	255	**1,658**	**5,857**	**690**	**10**	**56**
	2	4	11	15	-	18

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	-	-	-	-	-	131

AS AT DECEMBER 31, 2020

€ million	Maximum exposure to credit risk	
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**172,163**	
Financial assets measured at fair value through profit or loss	**65,228**	
Financial assets mandatorily measured at fair value through profit or loss	55,758	
Financial assets designated as at fair value through profit or loss	9,470	
Financial assets measured at fair value through other comprehensive income	**106,935**	
Financial assets mandatorily measured at fair value through other comprehensive income	106,935	
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**385,366**	
of which credit-impaired		
FINANCE LEASES	**1,076**	
of which credit-impaired		
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**77,747**	
of which credit-impaired		

AS AT DECEMBER 31, 2020

€ million	Maximum exposure to credit risk	
Non-current assets and disposal groups classified as held for sale from financial assets measured at fair value	95	
Non-current assets and disposal groups classified as held for sale from financial assets measured at amortized cost	4	

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	834	**2**	**206**	**331**	**2,756**	**825**
	566	**2**	**24**	**26**	**1,297**	**79**
	364	2	23	26	1,296	39
	202	-	1	-	1	40
	268	**-**	**182**	**305**	**1,459**	**746**
	268	-	182	305	1,459	746
	6,894	**2,729**	**113,950**	**2,343**	**8,265**	**6,283**
	71	265	1,344	126	151	398
	10	**-**	**-**	**5**	**-**	**1**
	-	-	-	4	-	1
	389	**1,450**	**5,972**	**786**	**2**	**56**
	3	6	2	11	-	12

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	-	-	-	-	-	55
	-	-	-	-	-	-

A range of different collateral is held in the traditional lending business to reduce the exposure to the maximum credit risk. Specifically, this collateral includes mortgages on residential and commercial real estate, registered ship and aircraft mortgages, guarantees (including indemnities and credit insurance), financial security (e.g. certain fixed-income securities, shares, and investment fund units), blanket and individual assignments of trade receivables, and various types of physical collateral. Generally, cash collateral, high-quality government bonds, and Pfandbriefe are held in the trading business in accordance with the collateral policy to reduce the risk attaching to OTC derivatives. Some financial instruments in stage 3 are not written down because they are fully covered by collateral.

A residual value method is used to determine changes in fair value attributable to changes in credit risk. As a result of changes in credit risk, the fair value of financial assets designated as at fair value through profit or loss had increased by €137 million at the end of 2021 (December 31, 2020: €47 million). The cumulative gains/losses resulting from the change in fair values attributable to changes in credit risk amounted to a net gain of €54 million (December 31, 2020: net loss of €82 million).

The credit risk associated with financial assets designated as at fair value through profit or loss was mitigated as at the reporting date by financial guarantee contracts with a value of €139 million (December 31, 2020: €163 million) furnished by affiliated banks.

Credit risk concentrations

The credit risk from financial instruments to which the DZ BANK Group is exposed is broken down by sector using the Deutsche Bundesbank industry codes and by geographic region using the annually updated country groups published by the International Monetary Fund (IMF). Volumes, measured on the basis of fair values and gross carrying amounts of financial assets and the credit risk from financial guarantee contracts and loan commitments, are broken down using the following credit rating classes:

– Investment grade: equates to internal rating classes 1A–3A
– Non-investment grade: equates to internal rating classes 3B–4E
– Default: equates to internal rating classes 5A–5E
– Not rated: no rating necessary or not classified

‘Not rated’ comprises counterparties for which a rating classification is not required.

AS AT DECEMBER 31, 2021

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Investment grade							
Fair value	Stage 1	53,483	31,829	17,332	12,098	1,851	977
	Stage 2	265	6	127	-	-	-
Gross carrying amount	Stage 1	196,936	16,121	59,828	54,451	7,385	30
	Stage 2	383	7	72	1,380	7,379	-
Nominal amount	Stage 1	29,134	166	22,450	6,725	2,953	-
	Stage 2	-	-	283	3	11	-
Non-investment grade							
Fair value	Stage 1	81	1,040	652	203	-	187
	Stage 2	20	146	86	23	1	-
Gross carrying amount	Stage 1	1,694	135	12,244	14,575	18	-
	Stage 2	231	143	3,079	2,415	32	-
	Stage 3	-	-	-	7	-	-
Nominal amount	Stage 1	645	399	6,810	3,068	-	-
	Stage 2	172	-	2,222	44	57	-

AS AT DECEMBER 31, 2020

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Investment grade							
Fair value	Stage 1	52,952	33,115	15,413	-	1,682	267
	Stage 2	169	-	423	-	-	-
Gross carrying amount	Stage 1	178,638	19,976	60,614	36,695	7,188	480
	Stage 2	105	13	282	467	3,744	-
Nominal amount	Stage 1	27,499	186	21,971	8,133	2,501	-
	Stage 2	5	-	331	-	100	-
Non-investment grade							
Fair value	Stage 1	176	262	94	-	-	-
	Stage 2	18	73	17	-	1	-
Gross carrying amount	Stage 1	1,517	120	12,203	36,190	57	-
	Stage 2	298	139	3,361	3,830	22	-
	Stage 3	-	-	1	5	-	-
Nominal amount	Stage 1	447	255	7,840	176	-	-
	Stage 2	95	-	1,749	2	53	-

AS AT DECEMBER 31, 2021

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Default							
Fair value	Stage 3	16	-	11	7	-	-
Gross carrying amount	Stage 2	-	-	1	-	-	-
	Stage 3	210	7	1,537	724	102	-
	POCI assets	-	-	30	-	-	-
Nominal amount	Stage 2	-	-	3	-	-	-
	Stage 3	15	-	240	15	-	-
	POCI assets	-	-	2	-	-	-
Not rated							
Fair value	Stage 1	918	454	19	1	232	2
Gross carrying amount	Stage 1	1,639	325	2,085	8,136	1,155	-
	Stage 2	829	42	240	832	258	28
	Stage 3	-	-	7	305	-	-
	POCI assets	-	-	5	55	-	-
Nominal amount	Stage 1	1,216	9	1,493	2,751	1,356	-
	Stage 2	257	-	41	52	10	-
	Stage 3	-	-	-	1	-	-

AS AT DECEMBER 31, 2020

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Default							
Fair value	Stage 3	17	-	-	-	-	-
Gross carrying amount	Stage 2	-	-	1	-	-	-
	Stage 3	265	7	2,228	737	119	-
	POCI assets	-	-	38	-	-	-
Nominal amount	Stage 3	-	-	257	2	-	-
	POCI assets	-	-	8	-	-	-
Not rated							
Fair value	Stage 1	850	1,117	70	-	217	-
Gross carrying amount	Stage 1	2,051	619	2,533	8,090	1,508	-
	Stage 2	447	42	738	713	245	30
	Stage 3	1	-	99	319	-	-
	POCI assets	-	-	3	29	-	-
Nominal amount	Stage 1	1,116	9	1,136	2,290	998	-
	Stage 2	3	-	58	22	27	-

AS AT DECEMBER 31, 2021

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Investment grade						
Fair value	Stage 1	44,314	62,837	1,480	3,943	4,996
	Stage 2	69	110	219	-	-
Gross carrying amount	Stage 1	299,115	32,459	944	1,531	702
	Stage 2	8,748	407	62	4	-
Nominal amount	Stage 1	54,283	6,511	115	519	-
	Stage 2	297	-	-	-	-
Non-investment grade						
Fair value	Stage 1	329	724	15	1,095	-
	Stage 2	69	144	-	63	-
Gross carrying amount	Stage 1	23,084	1,493	152	3,937	-
	Stage 2	4,427	904	99	470	-
	Stage 3	-	7	-	-	-
Nominal amount	Stage 1	8,826	535	242	1,319	-
	Stage 2	1,518	799	38	140	-

AS AT DECEMBER 31, 2020

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Investment grade						
Fair value	Stage 1	32,823	61,883	1,398	3,061	4,264
	Stage 2	98	325	169	-	-
Gross carrying amount	Stage 1	273,595	26,591	922	1,622	861
	Stage 2	4,401	178	1	31	-
Nominal amount	Stage 1	53,711	6,068	118	394	-
	Stage 2	338	88	-	10	-
Non-investment grade						
Fair value	Stage 1	88	281	-	163	-
	Stage 2	3	106	-	-	-
Gross carrying amount	Stage 1	43,393	2,476	291	3,927	-
	Stage 2	6,179	628	73	770	-
	Stage 3	1	5	-	-	-
Nominal amount	Stage 1	6,490	1,035	47	1,147	-
	Stage 2	1,427	373	23	76	-

AS AT DECEMBER 31, 2021

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Default						
Fair value	Stage 3	7	27	-	-	-
Gross carrying amount	Stage 2	1	-	-	-	-
	Stage 3	1,678	415	75	412	-
	POCI assets	30	-	-	-	-
Nominal amount	Stage 2	3	-	-	-	-
	Stage 3	223	27	1	19	-
	POCI assets	2	-	-	-	-
Not rated						
Fair value	Stage 1	431	1,195	-	-	-
Gross carrying amount	Stage 1	10,863	2,007	3	432	35
	Stage 2	1,598	527	1	103	-
	Stage 3	273	39	-	-	-
	POCI assets	57	3	-	-	-
Nominal amount	Stage 1	5,885	746	-	194	-
	Stage 2	355	5	-	-	-
	Stage 3	1	-	-	-	-

AS AT DECEMBER 31, 2020

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Default						
Fair value	Stage 3	-	17	-	-	-
Gross carrying amount	Stage 2	1	-	-	-	-
	Stage 3	1,882	703	147	623	-
	POCI assets	38	-	-	-	-
Nominal amount	Stage 3	154	83	-	22	-
	POCI assets	8	-	-	-	-
Not rated						
Fair value	Stage 1	736	1,235	2	-	281
Gross carrying amount	Stage 1	12,542	1,852	3	269	136
	Stage 2	1,603	503	1	108	-
	Stage 3	358	61	-	-	-
	POCI assets	30	2	-	-	-
Nominal amount	Stage 1	4,598	772	-	179	-
	Stage 2	99	11	-	-	-

» 89 Maturity analysis

AS AT DECEMBER 31, 2021

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Financial assets	**124,578**	**23,023**	**40,711**	**162,820**	**252,739**	**26,074**
Cash and cash equivalents	85,763	-	-	-	-	-
Loans and advances to banks	9,818	4,338	12,259	42,689	41,453	-
Loans and advances to customers	17,338	6,349	19,507	74,420	91,707	18
Derivatives used for hedging (positive fair values)	1	11	75	182	201	-
Financial assets held for trading	7,505	10,230	1,545	7,012	18,916	3,182
of which non-derivative financial assets held for trading	7,157	9,856	436	2,847	7,669	3,182
of which derivatives (positive fair values)	348	374	1,109	4,165	11,247	-
Investments	887	1,043	4,345	19,798	26,115	2,866
Investments held by insurance companies	625	1,027	2,868	18,654	74,346	19,979
of which non-derivative investments held by insurance companies	470	1,026	2,852	18,642	74,345	19,978
of which derivatives (positive fair values)	155	1	16	12	1	1
Other assets	2,641	25	112	65	1	29
Financial liabilities	**-122,045**	**-17,568**	**-20,955**	**-131,240**	**-114,949**	**-71,895**
Deposits from banks	-67,303	-9,350	-8,256	-73,503	-38,772	-1,567
Deposits from customers	-45,293	-2,029	-2,443	-7,504	-19,429	-66,779
Debt certificates issued including bonds	-7,717	-4,269	-5,503	-28,975	-34,208	-
Derivatives used for hedging (negative fair values)	-18	-30	-153	-637	-857	-
Financial liabilities held for trading	-561	-1,393	-4,145	-18,071	-18,772	-502
of which non-derivative financial liabilities held for trading	-261	-919	-3,065	-13,115	-10,147	-502
of which derivatives (negative fair values)	-300	-474	-1,080	-4,956	-8,625	-
Other liabilities	-1,103	-437	-246	-1,483	-922	-3,022
of which non-derivative other liabilities	-1,079	-403	-213	-1,400	-846	-3,020
of which derivatives (negative fair values)	-24	-34	-33	-83	-76	-2
Subordinated capital	-50	-60	-209	-1,067	-1,989	-25
Financial guarantee contracts and loan commitments	**-78,212**	**-124**	**-481**	**-253**	**-23**	**-3,510**
Financial guarantee contracts	-9,548	-59	-9	-86	-21	-27
Loan commitments	-68,664	-65	-472	-167	-2	-3,483

AS AT DECEMBER 31, 2020

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Financial assets	**105,984**	**16,115**	**40,108**	**164,113**	**250,805**	**22,194**
Cash and cash equivalents	68,148	-	-	-	-	-
Loans and advances to banks	13,517	4,189	11,761	39,315	35,476	-
Loans and advances to customers	16,018	6,675	17,796	73,898	92,052	18
Derivatives used for hedging (positive fair values)	1	5	19	94	38	-
Financial assets held for trading	4,564	2,833	3,203	9,092	22,819	1,964
of which non-derivative financial assets held for trading	4,258	2,247	1,808	3,626	6,644	1,964
of which derivatives (positive fair values)	306	586	1,395	5,466	16,175	-
Investments	996	1,240	4,459	21,757	31,338	2,375
Investments held by insurance companies	631	1,147	2,799	19,853	69,081	17,802
of which non-derivative investments held by insurance companies	350	1,070	2,791	19,829	69,068	17,787
of which derivatives (positive fair values)	281	77	8	24	13	15
Other assets	2,109	26	71	104	1	35
Financial liabilities	**-117,376**	**-11,869**	**-24,899**	**-114,000**	**-114,877**	**-69,878**
Deposits from banks	-72,724	-3,556	-9,824	-56,314	-35,823	-1,576
Deposits from customers	-37,829	-2,172	-3,134	-7,523	-22,823	-64,761
Debt certificates issued including bonds	-2,524	-3,628	-6,753	-26,359	-32,180	-
Derivatives used for hedging (negative fair values)	-10	-32	-152	-883	-1,542	-
Financial liabilities held for trading	-2,982	-1,926	-4,622	-19,010	-20,774	-931
of which non-derivative financial liabilities held for trading	-2,801	-1,001	-2,413	-13,100	-10,020	-931
of which derivatives (negative fair values)	-181	-925	-2,209	-5,910	-10,754	-
Other liabilities	-1,207	-530	-235	-1,402	-1,094	-2,585
of which non-derivative other liabilities	-1,188	-504	-230	-1,300	-953	-2,579
of which derivatives (negative fair values)	-19	-26	-5	-102	-141	-6
Subordinated capital	-100	-25	-179	-2,509	-641	-25
Financial guarantee contracts and loan commitments	**-74,528**	**-85**	**-333**	**-241**	**-35**	**-2,050**
Financial guarantee contracts	-8,233	-53	-3	-146	-10	-52
Loan commitments	-66,295	-32	-330	-95	-25	-1,998

The maturity analysis shows contractually agreed cash inflows with a plus sign and contractually agreed cash outflows with a minus sign. In the case of financial guarantee contracts and loan commitments, the potential cash outflows are shown.

The contractual maturities do not match the estimated actual cash inflows and cash outflows, especially in the case of financial guarantee contracts and loan commitments. The management of liquidity risk based on expected and unexpected cash flows is described in section 5.2.5 of the risk report in the group management report.

The maturity analysis for lease liabilities in accordance with IFRS 16.58 is presented in note 95.

» 90 Issuance activity

The following table shows the new issues, early repurchases, and repayments upon maturity in connection with issuance activity for unregistered paper, broken down by line item.

€ million	2021 New issues	2021 Repur-chases	2021 Repayments	2020 New issues	2020 Repur-chases	2020 Repayments
DEBT CERTIFICATES ISSUED INCLUDING BONDS	**37,340**	**-3,973**	**-24,570**	**31,738**	**-1,563**	**-45,970**
Bonds issued	**12,958**	**-3,331**	**-5,714**	**21,252**	**-859**	**-10,282**
Mortgage Pfandbriefe	4,741	-1	-2,474	4,708	-12	-2,080
Public-sector Pfandbriefe	-	-10	-197	252	-	-786
Other bonds	8,217	-3,320	-3,043	16,292	-847	-7,416
Other debt certificates issued	**24,382**	**-642**	**-18,856**	**10,486**	**-704**	**-35,688**
FINANCIAL LIABILITIES HELD FOR TRADING	**9,690**	**-8,569**	**-1,178**	**7,014**	**-1,450**	**-5,544**
SUBORDINATED CAPITAL	**215**	**-353**	**-118**	**1,376**	**-22**	**-263**
Total	**47,245**	**-12,895**	**-25,866**	**40,128**	**-3,035**	**-51,777**

The transactions shown under other debt certificates issued all relate to commercial paper. The transactions presented under financial liabilities held for trading were carried out using bonds issued, including share certificates, index-linked certificates, and other debt certificates. The transactions under subordinated capital were carried out using subordinated liabilities.

F Other disclosures

» 91 Contingent liabilities

€ million	Dec. 31, 2021	Dec. 31, 2020
Contingent liabilities from placement and underwriting obligations	-	41
Contingent liabilities arising from contributions to the resolution fund for CRR credit institutions	111	88
Contingent liabilities in respect of litigation risk	22	39
Total	**134**	**168**

The contingent liabilities arising from contributions to the resolution fund for CRR credit institutions consist of irrevocable payment commitments (IPCs) that the Single Resolution Board (SRB) approved in response to applications that were made to furnish collateral in partial settlement of the contribution to the European bank levy.

The contingent liabilities in respect of litigation risk in the direct health business of the R+V subgroup essentially relate to the not improbable risk of an outflow of resources embodying economic benefits as a result of certain premium adjustments potentially being ineffective. In addition, the contingent liabilities in respect of litigation risk comprise a small number of court proceedings relating to different cases. Where provisions have been recognized for particular claims, no contingent liabilities are recognized.

The underwriting obligations disclosed as at December 31, 2020 in relation to an undertaking by DZ BANK AG in connection with its involvement in the funding of a power plant project as part of an initiative to support economic growth in less developed regions of Saudi Arabia have expired, so there were no longer any contingent liabilities from placement and underwriting obligations as at December 31, 2021.

» 92 Financial guarantee contracts and loan commitments

€ million	Dec. 31, 2021	Dec. 31, 2020
Financial guarantee contracts	**9,750**	**8,497**
Loan guarantees	4,776	4,681
Letters of credit	965	636
Other guarantees and warranties	4,010	3,180
Loan commitments	**72,854**	**68,775**
Credit facilities to banks	24,900	23,695
Credit facilities to customers	37,326	34,042
Guarantee credits	1,059	1,538
Letters of credit	147	145
Global limits	9,422	9,356
Total	**82,604**	**77,272**

The amounts shown for financial guarantee contracts and loan commitments are the nominal values of the commitment in each case.

» 93 Trust activities

Assets held and liabilities entered into as part of trust activities do not satisfy the criteria for recognition on the balance sheet. The following table shows the breakdown for trust activities:

€ million	Dec. 31, 2021	Dec. 31, 2020
Trust assets	**2,312**	**2,094**
Loans and advances to banks	2,049	1,570
Loans and advances to customers	10	12
Investments	252	512
Trust liabilities	**2,312**	**2,094**
Deposits from banks	2,031	1,530
Deposits from customers	281	564

Trust assets and trust liabilities each include trust loans amounting to €2,031 million (December 31, 2020: €1,530 million).

» 94 Business combinations

ZBI GmbH, Erlangen, (formerly ZBI Partnerschafts-Holding GmbH) and 3 of its subsidiaries were fully consolidated for the first time in 2020 following a business combination (ZBI Group). The consideration transferred for the ZBI Group totaled €199 million. The fair value of the net assets stood at €105 million on the acquisition date, of which €5 million was attributable to non-controlling interests. The difference of €99 million between the consideration transferred and the share of the remeasured net assets was recognized as goodwill.

ZBI Immobilienmanagement GmbH, Erlangen, (formerly ZBI Projektentwicklungs GmbH) was acquired along with the ZBI Group as part of the business combination. It had not been included in the scope of consolidation in 2020 as it was not material. As a result of internal restructuring, the company's importance to the DZ BANK Group has increased so it was subsequently included in the scope of consolidation at the start of 2021. First-time consolidation was carried out prospectively with effect from January 1, 2021; the prior-year figures were not restated. As part of a purchase price allocation, a customer base with a value of €2 million and related deferred tax liabilities were identified and recognized in addition to the assets that had been identified in 2020 as a result of the acquisition of the ZBI Group. Consolidation of the carrying amount of the investment based on the company's remeasured equity caused goodwill to increase by €17 million.

Goodwill is allocated to the DZ BANK Group's operating segments, each of which constitutes a cash-generating unit. As at the balance sheet date, goodwill of €155 million was allocated to the UMH subgroup operating segment (December 31, 2020: €138 million). No goodwill was allocated to the TeamBank operating segment (December 31, 2020: €2 million).

Goodwill is regularly tested for possible impairment in the last quarter of the financial year. If there are any indications of possible impairment, more frequent impairment tests are also carried out. In an impairment test, the carrying amount of the goodwill-bearing units is compared with the relevant recoverable amount. The carrying amount is equivalent to the equity attributable to the goodwill-bearing entity. For the purposes of the test, the goodwill is notionally increased by the amount attributable to non-controlling interests. If the recoverable amount exceeds the carrying amount, no impairment of the goodwill is recognized. The recoverable amount is determined as the value in use of the goodwill-bearing entity. Value in use is based on the DZ BANK Group's 4-year plan, from which estimated future cash flows can be derived.

The basic assumptions are determined using an overall assessment based on past experience, current market and economic conditions, and estimates of future market trends. The macroeconomic scenario used as the basis for the 4-year plan assumes that new and stricter COVID-19-related lockdowns in Germany lead to a further recession that gives way to an increasingly rapid recovery over the course of the year. The scenario also assumes that both the euro area and the US dollar area will initially be hit by rising inflation, although the ECB's target for the euro area of 2.0 percent is unlikely to be exceeded for very long but is above 2.0 percent in 2021. The US inflation rate will temporarily rise above the 2.0 percent mark but will not accelerate any further. The monetary policy of the US and European central banks will remain highly expansionary for the foreseeable future, so key interest rates are likely to remain at a very low level for a number of years. However, the ECB's COVID-19-related emergency measures will be gradually withdrawn. The scenario anticipates virtually unchanged spreads on government bonds issued by the peripheral countries of the eurozone.

Cash flows beyond the end of the 4-year period were estimated using a constant rate of growth of 0.5 percent (2020: 0.75 percent) for the following operating segments: UMH subgroup and TeamBank. The value in use for a goodwill-bearing entity is produced by discounting these cash flows back to the date of the impairment test. The discount rate (before taxes) used for the UMH subgroup operating segment in 2021, which was determined on the basis of the capital asset pricing model, was 13.38 percent (2020: 13.53 percent). A discount rate (before taxes) of 14.47 percent was used for the TeamBank operating segment (2020: 14.10 percent).

In the fourth quarter of 2021, there were indications that the goodwill allocated to the TeamBank operating segment might be impaired. The subsequent impairment test resulted in the recognition of an impairment loss of €2 million in respect of the goodwill. The impairment loss was recognized in other net operating income. There had been no impairment losses in the previous year.

Sensitivity analyses are also carried out in which parameters relevant to the calculation of value in use are modified within a plausible range of values. The parameters that are particularly relevant to the DZ BANK Group are the forecast cash flows and the discount rates. No impairment requirement would arise in the UMH subgroup operating segment in any of the scenarios.

» 95 Leases

DZ BANK Group as lessor

The underlying assets in leases in which the DZ BANK Group is the lessor can be subdivided into the following classes: land and buildings, office furniture and equipment, and intangible assets.

For the most part, the land and buildings asset class consists of commercial real estate, including parking areas. A smaller proportion is accounted for by residential real estate. Lease assets in the office furniture and equipment asset class are motor vehicles, IT and office equipment, production machinery, medical technology devices, and photovoltaic installations. Software is the most significant item under intangible assets.

Finance leases

Within the DZ BANK Group, the VR Smart Finanz subgroup is active as a lessor. The companies in the VR Smart Finanz subgroup enter into leases with customers for motor vehicles, production machinery, and photovoltaic installations. In addition to office equipment, software is also leased. Some of the leases include purchase, extension, or termination options; they have terms of 1 to 21 years for office furniture and equipment, and 2 to 7 years for intangible assets.

In addition to the actual underlying assets financed by the leases, further items of collateral such as guarantees, repurchase agreements, and residual value guarantees are contractually agreed in order to reduce the risk. Lease assets are also monitored, for example by means of on-site inspections.

€ million	Dec. 31, 2021	Dec. 31, 2020
Gross investment	**789**	**1,154**
Up to 1 year	314	431
More than 1 year and up to 2 years	207	308
More than 2 years and up to 3 years	125	195
More than 3 years and up to 4 years	68	110
More than 4 years and up to 5 years	40	53
More than 5 years	34	57
less unearned finance income	**-37**	**-58**
Net investment	752	1,096
less present value of unguaranteed residual values	**-17**	**-30**
Present value of minimum lease payment receivables	**735**	**1,066**

The change in the present value of the minimum lease payment receivables was largely attributable to expiring finance leases and partial repayments at the request of customers.

Gains on disposals of €3 million were recognized in 2021 (2020: €3 million). Losses on disposals amounted to €2 million (2020: €3 million). They are reported under interest income in note 34 together with the financial income derived from the net investment in the lease.

Operating leases

Leases are in place for commercial and residential real estate, including parking areas. The leases normally include extension options. A small number of leases are also entered into for office furniture and equipment.

The following table shows a breakdown by asset class of the carrying amounts of the underlying assets in the leases, comprising investment property and items of property, plant and equipment, as at the reporting date:

€ million	Dec. 31, 2021	Dec. 31, 2020
Land and buildings	3,808	3,790
Office furniture and equipment	9	8
Total	**3,817**	**3,798**

Income from operating leases amounted to €268 million in the reporting year (2020: €275 million), the bulk of which comprised rental income from investment property held by the insurance companies.

As at the reporting date, the breakdown of the total amount of minimum lease payments expected to be received from operating leases in the future was as follows:

€ million	Dec. 31, 2021	Dec. 31, 2020
Total future minimum lease payments under non-cancelable leases	**1,107**	**1,099**
Up to 1 year	237	241
More than 1 year and up to 2 years	147	141
More than 2 years and up to 3 years	123	123
More than 3 years and up to 4 years	111	108
More than 4 years and up to 5 years	98	96
More than 5 years	391	390

DZ BANK Group as lessee

The underlying assets in leases in which the DZ BANK Group is the lessee can be subdivided into the following classes: land and buildings, and office furniture and equipment.

Leases involving the land and buildings asset class in which the DZ BANK Group is the lessee relate to the leasing of offices and business premises (including parking) for the group's own business operations. Some of these leases include extension and termination options. The lease terms are up to 20 years. There are also a small number of leases for office furniture and equipment. These include leases for motor vehicles and workplace equipment. The lease terms are up to 5 years.

Rights to use underlying assets in leases are included under property, plant and equipment, investment property, and right-of-use assets, and under other assets. The following table shows the changes in the carrying amounts of the right-of-use assets, broken down by class of underlying asset:

€ million	Land and buildings	Office furniture and equipment
Carrying amounts as at Jan. 1, 2020	307	27
Additions	208	24
Revaluation	41	-
Depreciation	-75	-17
Disposals	-18	-3
Changes attributable to currency translation	-1	-
Changes in scope of consolidation	19	-
Carrying amounts as at Dec. 31, 2020	481	31
Additions	165	21
Revaluation	20	1
Depreciation	-86	-18
Disposals	-11	-1
Changes attributable to currency translation	3	-
Changes in scope of consolidation	1	-
Carrying amounts as at Dec. 31, 2021	**573**	**33**

Lease liabilities of €632 million were recognized under other liabilities and insurance companies' other liabilities (December 31, 2020: €522 million).

The interest expense for lease liabilities is disclosed in notes 34 and 41.

The following table shows a breakdown of the contractual maturities for lease liabilities:

€ million	Dec. 31, 2021	Dec. 31, 2020
Up to 1 year	93	80
More than 1 year and up to 3 years	160	133
More than 3 years and up to 5 years	140	115
More than 5 years	257	215

The total cash outflows for lease liabilities in 2021 amounted to €140 million (2020: €129 million).

The following income and expenses have been recognized in the income statement for rights to use underlying assets in leases:

€ million	2021	2020
Expenses relating to short-term leases	-2	-5
Expenses relating to leases for low-value assets	-20	-18
Expenses relating to variable lease payments not included in the lease liability	-8	-5
Income from subleasing right-of-use assets	11	10
Gains and losses on sale and leaseback transactions	22	4

The expenses relating to short-term leases relate primarily to leases for motor vehicles as well as real estate with lease terms between 2 and 12 months. Expenses relating to leases for low-value assets mainly relate to the office furniture and equipment asset class.

The lease commitments could give rise to potential future cash outflows as a result of variable lease payments, extension options, or termination options. These potential cash outflows have not been included in the measurement of the lease liability because, under current assessments, it is not possible to determine with a sufficient degree of reliability whether, and to what extent, the variable components will materialize or will be used. Within the DZ BANK Group, there are variable lease payments of this nature in connection with utilities related to real estate leases. The entities in the DZ BANK Group estimate that variable lease payments, extension options, and termination rights contractually provided for in leases could give rise to future cash outflows of €446 million (2020: €392 million).

As at the reporting date, there were also future commitments amounting to €1 million (2020: €189 million) arising from leases that had been signed by the entities in the DZ BANK Group but that had not yet commenced. As at December 31, 2020, most of these leases had been real estate leases for offices and ATM sites, for example.

In 2021, 2 sale-and-leaseback transactions were entered into for business premises. The term of the sale-and-leaseback transactions is 8 years and the contracts include an extension option. In 2020, a sale-and-leaseback transaction had been entered into for offices and business premises. The term of this sale-and-leaseback transaction is 10.5 years and the contract includes an extension option.

Taking account of the contractual term, the incremental borrowing rate of interest is mainly determined on the basis of observable risk-free yield curves, supplemented by liquidity spreads, credit spreads and, if applicable, a currency markup. The term to maturity of the lease liabilities is based on the initial contractual term of the lease. If leases contain termination or extension options, the probability of these options being exercised is assessed using objective criteria or on the basis of expert opinion.

» 96 Disclosures on revenue from contracts with customers

Effects in the income statement

Disclosures on revenue from contracts with customers, broken down by operating segment

2021

€ million	BSH	R+V	TeamBank	
Income type				
Fee and commission income from securities business	-	-	-	
Fee and commission income from asset management	-	-	-	
Fee and commission income from payments processing including card processing	-	-	-	
Fee and commission income from lending business and trust activities	-	-	4	
Fee and commission income from financial guarantee contracts and loan commitments	-	-	-	
Fee and commission income from international business	-	-	-	
Fee and commission income from building society operations	43	-	-	
Other fee and commission income	77	-	140	
Fee and commission income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	73	-	
Other income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	71	-	
Other operating income	-	-	8	
Total	**120**	**144**	**153**	
Main geographical markets				
Germany	110	144	153	
Rest of Europe	10	-	-	
Rest of World	-	-	-	
Total	**120**	**144**	**153**	
Type of revenue recognition				
At a point in time	120	7	153	
Over a period of time	-	137	-	
Total	**120**	**144**	**153**	

	UMH	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DVB	Other/ Consolidation	**Total**
	3,774	490	-	239	-	-	-93	4,410
	16	-	-	384	-	-	-6	394
	-	244	-	2	-	1	49	295
	-	82	7	-	-	10	25	128
	-	62	8	-	-	1	-4	67
	-	12	-	-	-	-	-	12
	-	-	-	-	-	-	-	43
	-	64	18	2	4	1	-144	162
	-	-	-	-	-	-	-	73
	-	-	-	-	-	-	-	71
	8	-	-	-	-	-	36	53
	3,799	**954**	**33**	**627**	**4**	**12**	**-137**	**5,708**
	2,906	954	33	258	4	2	-156	4,408
	893	-	-	365	-	10	19	1,297
	-	-	-	3	-	-	-	3
	3,799	**954**	**33**	**627**	**4**	**12**	**-137**	**5,708**
	559	343	29	165	4	2	-220	1,162
	3,239	611	4	462	-	10	83	4,546
	3,799	**954**	**33**	**627**	**4**	**12**	**-137**	**5,708**

2020

€ million	BSH	R+V	TeamBank	
Income type				
Fee and commission income from securities business	-	-	-	
Fee and commission income from asset management	-	-	-	
Fee and commission income from payments processing including card processing	-	-	-	
Fee and commission income from lending business and trust activities	-	-	4	
Fee and commission income from financial guarantee contracts and loan commitments	-	-	-	
Fee and commission income from international business	-	-	-	
Fee and commission income from building society operations	39	-	-	
Other fee and commission income	64	-	116	
Fee and commission income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	39	-	
Other income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	65	-	
Other operating income	-	-	10	
Total	**103**	**104**	**130**	
Main geographical markets				
Germany	94	104	130	
Rest of Europe	9	-	-	
Rest of World	-	-	-	
Total	**103**	**104**	**130**	
Type of revenue recognition				
At a point in time	103	2	130	
Over a period of time	-	102	-	
Total	**103**	**104**	**130**	

	UMH	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DVB	Other/ Consolidation	**Total**
	2,768	427	-	194	-	-	-83	3,306
	12	-	-	280	-	-	-5	287
	-	232	-	1	-	1	47	281
	-	69	8	-	-	22	22	125
	-	54	8	-	-	2	-4	60
	-	12	-	-	-	-	-	12
	-	-	-	-	-	-	-	39
	-	55	-	3	15	3	-108	148
	-	-	-	-	-	-	-	39
	-	-	-	-	-	-	-	65
	8	-	-	-	-	-	34	52
	2,788	**849**	**16**	**478**	**15**	**28**	**-97**	**4,414**
	2,147	849	16	143	15	3	-111	3,390
	641	-	-	333	-	23	14	1,020
	-	-	-	2	-	2	-	4
	2,788	**849**	**16**	**478**	**15**	**28**	**-97**	**4,414**
	448	306	12	186	15	5	-262	945
	2,340	543	4	292	-	23	165	3,469
	2,788	**849**	**16**	**478**	**15**	**28**	**-97**	**4,414**

In 2021, the DZ BANK Group recognized revenue from contracts with customers in an amount of €3 million that had been included in contract liabilities at the beginning of the year (2020: €4 million).

Effects on the balance sheet

Receivables, contract assets, and contract liabilities

Receivables from contracts with customers in which the recognized income is not subject to calculation using the effective interest method are accounted for in application of the rules in IFRS 15. Contract assets and contract liabilities are also recognized as a result of circumstances in which the fulfilment of the counter-performance is conditional on something other than the passage of time.

There were no contract liabilities as at the reporting date (December 31, 2020: €3 million). The contract liabilities recognized at the end of 2020 had arisen from the service business.

Changes in receivables, contract assets, and contract liabilities from contracts with customers

€ million	Loans and advances to banks	Loans and advances to customers	Other receivables (other assets)	Contract liabilities
Balance as at Jan. 1, 2020	4	137	168	19
Additions	48	427	2,358	3
Derecognitions	-46	-453	-2,349	-19
Other	-	1	1	-
Balance as at Dec. 31, 2020	6	112	178	3
Additions	95	527	3,366	-
Derecognitions	-88	-501	-3,313	-3
Other	-	1	-	-
Balance as at Dec. 31, 2021	**12**	**139**	**231**	**-**

Other disclosures on revenue from contracts with customers

Performance obligations

Performance obligations are satisfied predominantly over a period of time. Within any year, performance obligations over time are billed mainly on a monthly or quarterly basis. Performance obligations related to a point in time are satisfied when the service in question has been performed. The related fees are normally due after the service has been provided. In the property development business, the performance obligation is satisfied gradually with the completion of the individual stages of construction. The consideration does not vary for the most part.

If advance payments are received, this leads to the recognition of contract liabilities, which are then reversed again over the maturity of the contract.

» 97 Government grants

The ECB made additional liquidity available under the TLTRO III program in order to support lending to households and companies during the COVID-19 pandemic. The DZ BANK Group participated in the program with a total drawdown amount of €32,416 million (December 31, 2020: €17,837 million). The bidder group originally comprising DZ BANK AG and TeamBank was extended to include DZ HYP with effect from February 18, 2021. This extension applies to new business from tranche 7 onward of the TLTRO III program and also retrospectively with regard to checking compliance with the net lending volume required for receipt of the interest-rate advantage. The extended bidder group's total volume of €32,416 million was recognized under deposits from banks on the balance sheet. The term for each tranche is a maximum of 3 years. Early, voluntary partial or full repayment is possible at quarterly intervals from 12 months after disbursement.

In accordance with the rules of the TLTRO III program, the interest on the liquidity provided depends on the net lending volume in the specified comparative periods. The market-oriented basic interest rate in 2021 was minus 0.5 percent. It was accounted for in accordance with IFRS 9 and was recognized pro rata in net interest income in an amount of €149 million under interest expense for financial liabilities with a positive effective interest rate. A 0.5 percentage point lower interest rate was achieved in the period June 24, 2020 to June 23, 2021 because the net lending volume of the extended bidder group's eligible loans (loans to the non-financial sector in the eurozone, excluding consumer home finance) was positive in the period March 1, 2020 to March 31, 2021 and was thus higher than the required reference volume. Because the net lending volume of the bidder group was also higher than the required reference volume in the period October 1, 2020 to December 31, 2021, a 0.5 percentage point lower interest rate also applies in the period June 24, 2021 to June 23, 2022. Because both of these conditions were met, the interest rate for 2021 was minus 1.0 percent. As an additional interest-rate advantage has therefore been granted by the ECB, which is a government agency within the meaning of IAS 20.3, this additional interest-rate advantage achieved is accounted for as a government grant in accordance with IAS 20. As a result, additional income of €183 million was recognized in net interest income under interest expense for financial liabilities with a positive effective interest rate in the period under review. Of this sum, €35 million was attributable to the period June 24, 2020 to December 31, 2020 because there had not yet been reasonable assurance as at December 31, 2020 that the condition would be met and thus that the government grant could be recognized in profit or loss.

In addition to the TLTRO III program, government grants of €23 million were deducted from the carrying amount of investment property held by insurance companies (December 31, 2020: €17 million). The grants are non-interest-bearing, low-interest or forgivable loans. In addition, income subsidies of €1 million were recognized in profit or loss (2020: €0 million).

» 98 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., and in total for DZ HYP, that these companies are able to meet their contractual obligations. These entities are identified in the list of DZ BANK Group's shareholdings (note 107) as being covered by a letter of comfort. The 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, and the 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, were discontinued by means of a termination agreement in 2021.

» 99 Employees

Average number of employees by employee group:

	2021	2020
Female employees	**14,705**	**14,282**
Full-time employees	9,152	8,750
Part-time employees	5,552	5,532
Male employees	**17,566**	**17,128**
Full-time employees	16,405	15,962
Part-time employees	1,160	1,166
Total	**32,271**	**31,410**

» 100 Auditor fees

The total fees charged for 2021 by the independent auditors of the consolidated financial statements, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, (2020: Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart), broken down by type of service are as follows:

€ million	2021	2020
Auditing services	12.2	12.3
Other attestation services	0.6	0.8
Tax consultancy services	0.2	0.6
Other services	1.0	0.6
Total	**13.9**	**14.3**

The fees for auditing services comprise expenses relating to the audit of the consolidated financial statements and group management report of DZ BANK as well as the audits of the annual financial statements and management reports of DZ BANK and consolidated subsidiaries carried out by the auditors of the consolidated financial statements. The fees for auditing services also comprise expenses relating to the review by the auditor of the condensed interim consolidated financial statements and interim group management report. The fees for other attestation services comprise the fees charged for the audit in accordance with section 89 of the German Securities Trading Act (WpHG) and services for which the auditors' professional seal must or can be applied. The fees for other services predominantly include fees for consultancy services.

» 101 Remuneration for the Board of Managing Directors and Supervisory Board of DZ BANK

In 2021, overall remuneration for DZ BANK's Board of Managing Directors from the group in accordance with IAS 24.17 amounted to €14.6 million (2020: €14.1 million). This total is broken down into short-term employee benefits of €9.1 million (2020: €8.8 million), post-employment benefits of €3.8 million (2020: €3.6 million), and share-based payments of €1.7 million (2020: €1.7 million). The remuneration for the Board of Managing Directors in 2021 and 2020 included the total bonus awarded to the Board of Managing Directors for the year in question. Supervisory Board remuneration amounted to €1.0 million (2020: €1.1 million) and consisted of payments due in the short term.

The remuneration for the Board of Managing Directors included contributions of €0.3 million (2020: €0.3 million) to defined contribution pension plans. DZ BANK has defined benefit obligations for the members of the Board of Managing Directors amounting to €36.0 million (December 31, 2020: €38.2 million).

In 2021, the total remuneration for the Board of Managing Directors of DZ BANK for the performance of their duties in DZ BANK and its subsidiaries pursuant to section 314 (1) no. 6a HGB was €11.1 million (2020: €10.7 million), while the total remuneration for the Supervisory Board for the performance of these duties amounted to €1.0 million (2020: €1.1 million).

The total remuneration paid to former members of the Board of Managing Directors or their surviving dependants pursuant to section 314 (1) no. 6b HGB amounted to €9.9 million in 2021 (2020: €9.9 million). DZ BANK has defined benefit obligations for former members of the Board of Managing Directors or their surviving dependants amounting to €177.0 million (2020: €176.4 million).

» 102 Share-based payment transactions

The entities in the DZ BANK Group have entered into share-based payment agreements with the members of the Board of Managing Directors and with certain other salaried employees.

BSH has entered into agreements governing share-based variable remuneration with the members of its Board of Managing Directors, the managing directors of Schwäbisch Hall Kreditservice GmbH, the heads of division, and a group of selected managers (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. The parameters factored into the remuneration are management-related KPIs that are important to a building society. If the variable remuneration amounts to €50,000 or more, 20 percent of it is paid immediately in the following year and 20 percent after a one-year retention period. 60 percent of the bonus is deferred over a period of up to 5 years, with each payment made after a subsequent retention period of one year. All amounts earmarked for deferred payment are pegged to the change in the enterprise value of the building society. The enterprise value is determined each year by means of a business valuation. If the enterprise value falls, then the retained variable remuneration components are reduced according to specified bands. A rise in the value does not lead to an increase in the deferred remuneration. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals and at the end of the retention period, which may cause the variable remuneration to be reduced or not be paid.

The following table shows the changes in unpaid remuneration components at BSH:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2020	1.7	0.4
Remuneration granted	0.7	0.1
Payment of remuneration granted in 2019	-0.2	-
Payment of remuneration granted in previous years	-0.5	-0.2
Unpaid share-based payments as at Dec. 31, 2020	1.7	0.3
Remuneration granted	0.6	0.1
Payment of remuneration granted in 2020	-0.2	-
Payment of remuneration granted in previous years	-0.4	-0.1
Unpaid share-based payments as at Dec. 31, 2021	**1.7**	**0.3**

R+V has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors and a group of selected salaried employees (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. A proportion of 60 percent of the variable remuneration for members of the Board of Managing Directors, and 40 percent of that for the selected salaried employees, depends on the change in value of the shares in R+V Versicherung AG. In these arrangements, the share value equates to the fair market value of the unlisted shares in R+V Versicherung AG as at December 31 of the year in question. The portion of the bonus subject to payout restrictions will be paid out after 3 years without any reduction if the share value equates to more than 85 percent of the value at the end of the baseline year. If the share value is between 75 percent and 85 percent of this figure, the bonus portion subject to payout restrictions is reduced by half. If the share value falls below 75 percent, payment of the part of the bonus subject to payout restrictions is canceled in full.

The following table shows the changes in unpaid remuneration components at R+V:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2020	2.1	0.3
Remuneration granted	0.9	0.1
Payment of remuneration granted in previous years	-0.6	-0.1
Unpaid share-based payments as at Dec. 31, 2020	2.4	0.3
Remuneration granted	0.9	0.1
Payment of remuneration granted in previous years	-0.6	-0.1
Unpaid share-based payments as at Dec. 31, 2021	**2.7**	**0.3**

TeamBank has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors and risk takers. The amount of variable remuneration depends on the achievement of agreed targets. 20 percent of the variable remuneration is paid immediately in the following year after it has been set. Another 20 percent is subject to a retention period of one calendar year. 50 percent of both tranches depends on the long-term changes in the enterprise value of TeamBank. The remaining 60 percent is paid in 5 tranches, each of 12 percent, within 5 calendar years. The change in the enterprise value of TeamBank is used to measure long-term performance. The value is determined using the income capitalization approach.

The following table shows the changes in unpaid remuneration components at TeamBank:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2020	1.4	-
Remuneration granted	0.4	-
Payment of remuneration granted in 2019	-0.1	-
Payment of remuneration granted in previous years	-0.4	-
Unpaid share-based payments as at Dec. 31, 2020	1.3	-
Remuneration granted	0.3	0.1
Payment of remuneration granted in 2020	-0.1	-
Payment of remuneration granted in previous years	-0.3	-
Unpaid share-based payments as at Dec. 31, 2021	**1.2**	**0.1**

DZ BANK has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors, heads of division, and a group of selected salaried employees (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. In the case of members of the Board of Managing Directors and heads of division, 80 percent of the total variable remuneration is deferred over a period of up to 6 years from when the bonus is determined. For risk takers below the level of head of division with variable remuneration of more than €130,000, 80 percent of the total variable remuneration is deferred over a period of up to 4 years from when the bonus is determined. For risk takers below the level of head of division with variable remuneration of more than €50,000 and up to €130,000, 70 percent of the total variable remuneration is deferred over a period of up to 4 years from when the bonus is determined. Amounts are paid out after taking into account deferral or retention periods. The deferred portion of the variable remuneration may be reduced or even fully withdrawn if there is an adverse change in the value of DZ BANK shares or if there are negative contributions to profits from DZ BANK, individual divisions, or individual activities. A rise in the value of DZ BANK shares does not lead to an increase in the deferred remuneration. The value of the shares is determined each year by means of an independent business valuation. The deferred portion of the variable remuneration for members of the Board of Managing Directors is reduced by 50 percent if the share price falls by between 7.5 percent and 12.5 percent. If the share price drops by more than 12.5 percent, the deferred portion of the variable remuneration is canceled. In the case of heads of division and risk takers below the level of head of division, the deferred portion of the variable remuneration is reduced by 25 percent if the share price falls by between 15 percent and 20 percent. If the share price drops by between 20 percent and 25 percent, the deferred portion of the variable remuneration is reduced by 50 percent. If the share price drops by more than 25 percent, the deferred portion of the variable remuneration is canceled in full. If the change in the share price does not reach the specified threshold values, the deferred portion of the variable remuneration is not reduced as a result of the change in the share price. Based on a value per DZ BANK share of €8.65 from the business valuation as at December 31, 2017 (adjusted share value following the merger), a value per share of €8.65 as at December 31, 2018, a value per share of €8.35 as at December 31, 2019, a value per share of €8.05 as at December 31, 2020, and a value per share of €8.80 as at December 31, 2021, it can currently be assumed that the deferred remuneration will be paid in full. No options have been granted for these groups of employees. Share-based payments are granted in the year after they have been earned.

The following summary shows the change in unpaid share-based payment components at DZ BANK:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2020	2.9	18.5
Remuneration granted	1.6	5.8
Payment of remuneration granted in 2019	-0.4	-2.2
Payment of remuneration granted in previous years	-1.3	-5.3
Unpaid share-based payments as at Dec. 31, 2020	2.8	16.8
Remuneration granted	1.7	5.4
Payment of remuneration granted in 2020	-0.4	-2.9
Payment of remuneration granted in previous years	-0.9	-4.4
Unpaid share-based payments as at Dec. 31, 2021	**3.2**	**14.9**

DZ HYP has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors and a group of selected salaried employees (risk takers). The level of variable performance-based remuneration is based on the achievement of quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets. 20 percent of the variable remuneration is paid immediately in the following year after the annual financial statements have been adopted and the variable remuneration has been set by the Supervisory Board. Payment of the remaining 80 percent of the bonus set for the previous year is spread out over a period of up to 6 years in total, taking into account deferral and retention periods. All amounts earmarked for deferred payment are linked to the long-term performance of DZ HYP because they are pegged to the value of its shares. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals, which may cause the variable remuneration to be reduced or cancelled.

The heads of division are classified as risk takers. Individual contractual agreements on variable performance-based remuneration have been reached with the heads of division. The variable performance-based remuneration is set with reference to a contractually agreed target bonus. Quantitative and qualitative targets derived from the corporate strategy in the form of group, overall bank, divisional, and individual targets are assessed and used to determine the actual bonus level. If the variable performance-based remuneration amounts to €50,000 or more, 20 percent of it is paid immediately in the following year. The other 80 percent of the calculated bonus is deferred over a period of up to 6 years. Of this deferred amount, 50 percent is pegged to the long-term performance of DZ HYP, which is calculated on the basis of the enterprise value. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals.

The following table shows the changes in unpaid remuneration components at DZ HYP:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2020	1.2	0.5
Remuneration granted	0.4	0.2
Payment of remuneration granted in 2019	-0.2	-0.1
Payment of remuneration granted in previous years	-0.3	-0.1
Unpaid share-based payments as at Dec. 31, 2020	1.1	0.5
Remuneration granted	0.4	0.2
Payment of remuneration granted in 2020	-0.1	-0.1
Payment of remuneration granted in previous years	-0.3	-0.2
Unpaid share-based payments as at Dec. 31, 2021	**1.1**	**0.4**

DZ PRIVATBANK has entered into an agreement on variable remuneration components with the members of its Board of Managing Directors. The level of variable remuneration is based on quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets. The variable remuneration is paid out over 6 years. The initial payout amount of 20 percent is paid out immediately after the variable remuneration amount has been set. A further 20 percent is subject to a retention period of one year. The remaining 60 percent is spread out over a period of 5 years. To this end, the retained component is subdivided into 5 equal portions. All deferred payouts are linked to the long-term change in the enterprise value of DZ PRIVATBANK. The enterprise value is determined each year by means of an independent business valuation. If the enterprise value falls, then the retained variable remuneration components are reduced according to specified bands.

The following table shows the changes in unpaid remuneration components at DZ PRIVATBANK:

€ million	Board of Managing Directors
Unpaid share-based payments as at Jan. 1, 2020	1.7
Remuneration granted	0.4
Payment of remuneration granted in 2019	-0.1
Payment of remuneration granted in previous years	-0.3
Reduction of share-based payments	-0.1
Unpaid share-based payments as at Dec. 31, 2020	1.6
Remuneration granted	0.6
Payment of remuneration granted in 2020	-0.1
Payment of remuneration granted in previous years	-0.3
Unpaid share-based payments as at Dec. 31, 2021	**1.8**

In addition to a basic salary, the remuneration system for the Board of Managing Directors of VR Smart Finanz includes a variable remuneration component. It is determined on the basis of quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets. A three-year period is applied as the basis for calculating target achievement. The maximum variable remuneration is set in the event of full achievement of each individual target. All amounts earmarked for deferred payment are linked to the long-term performance of VR Smart Finanz because they are pegged to its enterprise value. Negative contributions to profits are taken into account when setting the amount of variable remuneration and pro rata deferrals, which may cause the variable remuneration to be reduced or cancelled.

The following table shows the changes in unpaid remuneration components at VR Smart Finanz:

€ million	Board of Managing Directors
Unpaid share-based payments as at Jan. 1, 2020	1.9
Remuneration granted	0.3
Payment of remuneration granted in 2019	-0.1
Payment of remuneration granted in previous years	-0.5
Reduction of share-based payments	-0.1
Unpaid share-based payments as at Dec. 31, 2020	1.5
Remuneration granted	0.4
Payment of remuneration granted in 2020	-0.1
Payment of remuneration granted in previous years	-0.4
Reduction of share-based payments	-0.1
Unpaid share-based payments as at Dec. 31, 2021	**1.3**

If the variable remuneration granted to the Board of Managing Directors and risk takers at DVB exceeds €50,000 for a financial year, it is not paid out immediately and is instead subject to certain deferral periods and additional retention periods. The employee becomes entitled immediately (in the following year) to 40 percent of the granted variable remuneration. Only 50 percent of this amount is paid immediately; the remaining 50 percent is subject to an additional one-year retention period, during which it is pegged to the change in the DVB Bank Group's enterprise value. The remaining 60 percent of the variable remuneration is divided into 5 tranches (each equating to 12 percent) and deferred over a period of 1 to 5 years. After the deferral period, 50 percent of each tranche is subject to an additional one-year retention period and is pegged to the change in the DVB Bank Group's enterprise value during both the deferral period and the retention period. Entitlements arising from deferred variable remuneration were sold in connection with the sale of the Aviation Asset Management and Aviation Investment Management businesses in 2021. The proportion of the deferred variable remuneration that was sold that is attributable to share-based payments is shown under disposal of share-based payments.

The following table shows the changes in unpaid remuneration components at DVB:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2020	0.2	2.7
Remuneration granted	0.2	2.1
Payment of remuneration granted in 2019	-0.1	-0.7
Payment of remuneration granted in previous years	-	-0.5
Unpaid share-based payments as at Dec. 31, 2020	0.3	3.6
Remuneration granted	0.2	0.9
Payment of remuneration granted in 2020	-0.1	-0.9
Payment of remuneration granted in previous years	-	-0.4
Disposal of share-based payments	-	-1.0
Unpaid share-based payments as at Dec. 31, 2021	**0.4**	**2.2**

In 2021, the agreements described above gave rise to expenses for share-based payment transactions in the DZ BANK Group of €10.3 million (2020: €10.9 million) and income from the reversal of provisions for share-based payments of €3.0 million (2020: €0.1 million). As at December 31, 2021, the provisions recognized for share-based payment transactions in the DZ BANK Group amounted to €44.9 million (December 31, 2020: €49.3 million).

» 103 Related party disclosures

DZ BANK enters into transactions with related parties (persons or entities) as part of its ordinary business activities. All of this business is transacted on an arm's length basis. Most of these transactions involve typical banking products and financial services.

Transactions with related parties (entities)

€ million	Dec. 31, 2021	Dec. 31, 2020
Loans and advances to banks	**22**	**60**
to joint ventures	22	60
Loans and advances to customers	**154**	**193**
to subsidiaries	43	47
to joint ventures	10	9
to associates	50	81
to pension plans for the benefit of employees	13	-
to other related parties (entities)	38	56
Investments	**5**	**5**
of joint ventures	5	5
Investments held by insurance companies	**200**	**104**
of subsidiaries	131	104
of pension plans for the benefit of employees	69	-
Property, plant and equipment, and investment property	**-**	**1**
of subsidiaries	-	1
Other assets	**41**	**78**
of subsidiaries	22	26
of associates	1	-
of pension plans for the benefit of employees	18	52
Non-current assets and disposal groups classified as held for sale	**25**	**-**
of associates	25	-
Deposits from banks	**74**	**169**
owed to joint ventures	74	169
Deposits from customers	**219**	**203**
owed to subsidiaries	173	161
owed to associates	3	4
owed to other related parties (entities)	43	38
Financial liabilities held for trading	**6**	**7**
of other related parties (entities)	6	7
Other liabilities	**33**	**17**
of subsidiaries	23	10
of joint ventures	3	2
of pension plans for the benefit of employees	7	5
Subordinated capital	**19**	**19**
of pension plans for the benefit of employees	18	18
of other related parties (entities)	1	1

€ million	Dec. 31, 2021	Dec. 31, 2020
Financial guarantee contracts	**1**	**7**
for subsidiaries	1	7
Loan commitments	**743**	**58**
to subsidiaries	60	46
to joint ventures	10	10
to associates	2	2
to pension plans for the benefit of employees	672	-

The changes in transactions with pension plans for the benefit of employees essentially relate to the setting up of an extended initial fund of R+V Pensionsversicherung a.G.; see note 69.

Income of €6 million (2020: income of €10 million) in the total reported net interest income, expenses of €3 million (2020: expenses of €3 million) in the total reported net fee and commission income, and expenses of €14 million (2020: expenses of €28 million) in the total reported net income from insurance business were attributable to transactions with related parties (entities).

Transactions with related parties (persons)

Related parties (persons) are key management personnel who are directly or indirectly responsible for the planning, management, and supervision of the activities of DZ BANK, as well as their close family members. For the purposes of IAS 24, the DZ BANK Group considers the members of the Board of Managing Directors and the members of the Supervisory Board to be key management personnel. As at December 31, 2021, the DZ BANK Group's loans and loan commitments to related parties (persons) amounted to €0.5 million (December 31, 2020: €0.7 million).

Like unrelated parties, key management personnel and their close family members also have the option of obtaining further financial services from the DZ BANK Group, for example in the form of insurance contracts, home savings contracts, and leases. Where they made use of this option, the transactions were carried out on an arm's-length basis.

» 104 Board of Managing Directors

Uwe Fröhlich
(Co-Chief Executive Officer)
Responsibilities: Cooperative Banks/Verbund; Communications & Marketing; Research and Economics; Strategy & Group Development; Structured Finance

Dr. Cornelius Riese
(Co-Chief Executive Officer)
Responsibilities: Group Audit; Legal; Strategy & Group Development

Uwe Berghaus
Responsibilities: Corporate Banking Baden-Württemberg; Corporate Banking Bavaria; Corporate Banking North and East; Corporate Banking West/Central; Investment Promotion; Central Corporate Banking

Dr. Christian Brauckmann
Responsibilities: IT; Services & Organisation

Ulrike Brouzi
Responsibilities: Bank Finance; Compliance; Group Finance; Group Financial Services

Wolfgang Köhler
Responsibilities: Capital Markets Trading; Capital Markets Institutional Clients; Capital Markets Retail Clients; Group Treasury

Michael Speth
Responsibilities: Group Risk Controlling; Credit; Credit Services

Thomas Ullrich
Responsibilities: Group Human Resources; Operations; Payments & Accounts; Transaction Management

» 105 Supervisory Board

Henning Deneke-Jöhrens
(Chairman of the Supervisory Board)
Chief Executive Officer
Volksbank eG Hildesheim-Lehrte-Pattensen

Ulrich Birkenstock
(Deputy Chairman of the Supervisory Board)
Employee
R+V Allgemeine Versicherung AG

Martin Eul
(Deputy Chairman of the Supervisory Board
until May 19, 2021)
Chief Executive Officer
Dortmunder Volksbank eG

Ingo Stockhausen
(Deputy Chairman of the Supervisory Board
since May 19, 2021)
Chief Executive Officer
Volksbank Oberberg eG

Uwe Barth
Spokesman of the Board of Managing Directors
Volksbank Freiburg eG
(Member of the Supervisory Board since May 19, 2021)

Heiner Beckmann
Senior manager
R+V Allgemeine Versicherung AG

Timm Häberle
Co-Chief Executive Officer
VR-Bank Ludwigsburg eG

Dr. Peter Hanker
Spokesman of the Board of Managing Directors
Volksbank Mittelhessen eG

Andrea Hartmann
Employee
Bausparkasse Schwäbisch Hall AG

Pilar Herrero Lerma
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

Dr. Dierk Hirschel
Head of the Economic Policy Division
ver.di Bundesverwaltung

Josef Hodrus
Spokesman of the Board of Managing Directors
Volksbank Allgäu-Oberschwaben eG
(Member of the Supervisory Board since May 19, 2021)

Marija Kolak
President
Bundesverband der Deutschen Volksbanken
und Raiffeisenbanken e.V. (BVR)

Renate Mack
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

Rainer Mangels
Employee
R+V Rechtsschutz-Schadenregulierungs-GmbH
(Member of the Supervisory Board until September 15, 2021)

Sascha Monschauer
Chief Executive Officer
Volksbank RheinAhrEifel eG

Wolfgang Nett
Sales Director
Union Investment Privatfonds GmbH
(Member of the Supervisory Board since September 15, 2021)

Rolf Dieter Pogacar
Employee
R+V Allgemeine Versicherung AG

Stephan Schack
Chief Executive Officer
Volksbank Raiffeisenbank eG, Itzehoe

Gregor Scheller
Chief Executive Officer
VR Bank Bamberg-Forchheim eG
(Member of the Supervisory Board until May 19, 2021)

Uwe Spitzbarth
Departmental coordinator
ver.di Bundesverwaltung

Sigrid Stenzel
Labor union secretary
Social security department
ver.di Niedersachsen-Bremen

Dr. Wolfgang Thomasberger
Chief Executive Officer
VR Bank Rhein-Neckar eG
(Member of the Supervisory Board until May 19, 2021)

Dr. Gerhard Walther
Chief Executive Officer
VR-Bank Mittelfranken West eG
(Member of the Supervisory Board since May 19, 2021)

Supervisory Board committees

Nominations Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Martin Eul, member until May 19, 2021
Timm Häberle, member since May 19, 2021
Pilar Herrero Lerma, member until September 15, 2021*
Renate Mack*
Wolfgang Nett, member since September 23, 2021*
Ingo Stockhausen, member since May 19, 2021
Dr. Wolfgang Thomasberger, member until May 19, 2021

Audit Committee
Timm Häberle, Chairman
Henning Deneke-Jöhrens
Martin Eul, member until May 19, 2021
Dr. Peter Hanker, member since May 19, 2021
Andrea Hartmann*
Marija Kolak
Renate Mack*
Rolf Dieter Pogacar*
Stephan Schack
Ingo Stockhausen, member since May 19, 2021
Dr. Wolfgang Thomasberger, member until May 19, 2021

Remuneration Control Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Martin Eul, member until May 19, 2021
Dr. Peter Hanker, member since May 19, 2021
Pilar Herrero Lerma, member until September 15, 2021*
Renate Mack*
Wolfgang Nett, member since September 23, 2021*
Ingo Stockhausen, member since May 19, 2021
Dr. Wolfgang Thomasberger, member until May 19, 2021

Risk Committee
Dr. Wolfgang Thomasberger, Chairman until May 19, 2021
Dr. Peter Hanker, Chairman since June 17, 2021
Heiner Beckmann*
Henning Deneke-Jöhrens
Martin Eul, member until May 19, 2021
Timm Häberle
Pilar Herrero Lerma, member until September 15, 2021*
Dr. Dierk Hirschel, member since September 23, 2021*
Renate Mack*
Sascha Monschauer, member since May 19, 2021
Gregor Scheller, member until May 19, 2021
Ingo Stockhausen, member since May 19, 2021
Dr. Gerhard Walther, member since May 19, 2021

Mediation Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Martin Eul, member until May 19, 2021
Uwe Spitzbarth*
Ingo Stockhausen, member since May 19, 2021

*Employee representatives.

» 106 Supervisory mandates held by members of the Board of Managing Directors and employees

Within DZ BANK

As at December 31, 2021, members of the Board of Managing Directors and employees also held mandates on the statutory supervisory bodies of major companies. These and other notable mandates are listed below. Companies included in the consolidation are indicated with an asterisk (*).

Members of the Board of Managing Directors

Uwe Fröhlich (Co-Chief Executive Officer)	DZ HYP AG, Hamburg and Münster (*) Chairman of the Supervisory Board
	DZ PRIVATBANK S.A., Strassen (*) Chairman of the Supervisory Board
	VR Smart Finanz AG, Eschborn (*) Chairman of the Supervisory Board
Dr. Cornelius Riese (Co-Chief Executive Officer)	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (*) Chairman of the Supervisory Board
	R+V Versicherung AG, Wiesbaden (*) Chairman of the Supervisory Board
	TeamBank AG Nürnberg, Nuremberg (*) Chairman of the Supervisory Board
	Union Asset Management Holding AG, Frankfurt am Main (*) Chairman of the Supervisory Board
Uwe Berghaus	DZ HYP AG, Hamburg and Münster (*) Member of the Supervisory Board
	EDEKABANK AG, Hamburg Member of the Supervisory Board
Dr. Christian Brauckmann	Atruvia AG, Frankfurt am Main Member of the Supervisory Board
	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
	DZ PRIVATBANK S.A., Strassen (*) Deputy Chairman of the Supervisory Board

Ulrike Brouzi	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
	Salzgitter AG, Salzgitter Member 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 (*) Chairman of the Supervisory Board
	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board
Michael Speth	BAG Bankaktiengesellschaft, Hamm Member of the Supervisory Board
	DVB Bank SE, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board
	DZ HYP AG, Hamburg and Münster (*) Member of the Supervisory Board
	R+V Versicherung AG, Wiesbaden (*) Member of the Supervisory Board
	VR Smart Finanz AG, Eschborn (*) Deputy Chairman of the Supervisory Board
Thomas Ullrich	Deutsche WertpapierService Bank AG, Frankfurt am Main Deputy Chairman of the Supervisory Board
	TeamBank AG Nürnberg, Nuremberg (*) Deputy Chairman of the Supervisory Board
	VR Payment GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board

DZ BANK employees

Arnd Volker Bernbeck	DVB Bank SE, Frankfurt am Main (*) Member of the Supervisory Board
Rolf Büscher	DVB Bank SE, Frankfurt am Main (*) Member of the Supervisory Board ReiseBank AG, Frankfurt am Main (*) Member of the Supervisory Board
Johannes Koch	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Winfried Münch	AKA Ausfuhrkredit-Gesellschaft mbH, Frankfurt am Main Member of the Supervisory Board
Jochen Philipp	Banco Cooperativo Español S.A., Madrid Member of the Board of Directors
Claudio Ramsperger	Cassa Centrale Banca – Credito Cooperativo Italiano S.p.A., Trento Member of the Board of Directors
Gregor Roth	ReiseBank AG, Frankfurt am Main (*) Chairman of the Supervisory Board VR Payment GmbH, Frankfurt am Main (*) Member of the Supervisory Board
Peter Tenbohlen	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Dr. Ulrich Walter	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Dagmar Werner	Banco Cooperativo Español S.A., Madrid Member of the Board of Directors

In the DZ BANK Group

As at December 31, 2021, members of the Boards of Managing Directors and employees also held mandates on the statutory supervisory bodies of the following major companies in Germany. Companies included in the consolidation are indicated with an asterisk (*).

Reinhard Klein Chief Executive Officer Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Kreditservice GmbH, Schwäbisch Hall (*) Chairman of the Supervisory Board
Peter Magel Member of the Board of Managing Directors Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Kreditservice GmbH, Schwäbisch Hall (*) Member of the Supervisory Board
Claudia Klug General Executive Manager Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Facility Management GmbH, Schwäbisch Hall Chairwoman of the Supervisory Board
Dr. Norbert Rollinger Chief Executive Officer R+V Versicherung AG	Condor Lebensversicherungs-AG, Hamburg (*) Chairman of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board Raiffeisendruckerei GmbH, Neuwied Member of the Supervisory Board R+V Allgemeine Versicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Krankenversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Lebensversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Service Center GmbH, Wiesbaden Chairman of the Supervisory Board SECURITAS HOLDING GmbH, Berlin Member of the Supervisory Board Union Asset Management Holding AG, Frankfurt am Main (*) Member of the Supervisory Board

Claudia Andersch Member of the Board of Managing Directors R+V Versicherung AG	CHEMIE Pensionsfonds AG, Munich (*) Member of the Supervisory Board Condor Lebensversicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Deputy Chairwoman of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Chairwoman of the Supervisory Board
Jens Hasselbächer Member of the Board of Managing Directors R+V Versicherung AG	R+V Direktversicherung AG, Wiesbaden (*) Deputy Chairman of the Supervisory Board R+V Krankenversicherung AG, Wiesbaden (*) Deputy Chairman of the Supervisory Board
Dr. Christoph Lamby Member of the Board of Managing Directors R+V Versicherung AG	Condor Allgemeine Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board Extremus Versicherungs-AG, Cologne Member of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Member of the Supervisory Board
Tillmann Lukosch Member of the Board of Managing Directors R+V Versicherung AG	Condor Allgemeine Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Direktversicherung AG, Wiesbaden (*) Member of the Supervisory Board

Dr. Edgar Martin
Member of the Board of Managing Directors
R+V Versicherung AG

GDV Dienstleistungs-GmbH, Hamburg
Member of the Supervisory Board

R+V Direktversicherung AG, Wiesbaden (*)
Chairman of the Supervisory Board

Sprint Sanierung GmbH, Cologne (*)
Chairman of the Supervisory Board

Julia Merkel
Member of the Board of Managing Directors
R+V Versicherung AG

KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*)
Member of the Supervisory Board

R+V Pensionskasse AG, Wiesbaden (*)
Member of the Supervisory Board

Südzucker AG, Mannheim
Member of the Supervisory Board

Marc René Michallet
Member of the Board of Managing Directors
R+V Versicherung AG

CHEMIE Pensionsfonds AG, Munich (*)
Member of the Supervisory Board

Condor Allgemeine Versicherungs-AG, Hamburg (*)
Deputy Chairman of the Supervisory Board

Condor Lebensversicherungs-AG, Hamburg (*)
Deputy Chairman of the Supervisory Board

GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG, Stuttgart (*)
Chairman of the Supervisory Board

KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*)
Member of the Supervisory Board

KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*)
Member of the Supervisory Board

R+V Pensionsfonds AG, Wiesbaden (*)
Member of the Supervisory Board

Christian Polenz Deputy Chief Executive Officer TeamBank AG Nürnberg	SCHUFA Holding AG, Wiesbaden Chairman of the Supervisory Board
Hans Joachim Reinke Chief Executive Officer Union Asset Management Holding AG	Union Investment Institutional GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board Union Investment Privatfonds GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board Union Investment Real Estate GmbH, Hamburg (*) Deputy Chairman of the Supervisory Board
Alexander Lichtenberg Member of the Board of Managing Directors Union Asset Management Holding AG	Union Investment Service Bank AG, Frankfurt am Main (*) Chairman of the Supervisory Board
Alexander Schindler Member of the Board of Managing Directors Union Asset Management Holding AG	Quoniam Asset Management GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board Union Investment Institutional GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board Union Investment Institutional Property GmbH, Hamburg (*) Deputy Chairman of the Supervisory Board
Jens Wilhelm Member of the Board of Managing Directors Union Asset Management Holding AG	Union Investment Institutional Property GmbH, Hamburg (*) Chairman of the Supervisory Board Union Investment Privatfonds GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board Union Investment Real Estate GmbH, Hamburg (*) Chairman of the Supervisory Board
Sonja Albers Employee Union Asset Management Holding AG	Union Investment Service Bank AG, Frankfurt am Main (*) Deputy Chairwoman of the Supervisory Board
Dr. Daniel Günnewig Employee Union Asset Management Holding AG	Union Investment Service Bank AG, Frankfurt am Main (*) Member of the Supervisory Board

André Haagmann Member of the Board of Managing Directors Union Investment Institutional GmbH	Quoniam Asset Management GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board
Jörg Kotzenbauer Chief Executive Officer ZBI GmbH	ZBI Fondsmanagement AG, Erlangen (*) Chairman of the Supervisory Board
Dr. Bernd Ital Member of the Board of Managing Directors ZBI GmbH	ZBI Fondsmanagement AG, Erlangen (*) Member of the Supervisory Board

» 107 List of shareholdings

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € ’000	Profit/loss in € ’000
AER Holding N.V. 1)	Willemstad, Curaçao	100.00		-	20
APZ Beteiligungs GmbH 1)	Darmstadt	81.70		4,943	1,903 *
APZ CarMotion GmbH 1)	Fischamend, Austria	100.00		444	-273 *
APZ GmbH 1)	Darmstadt	100.00		7,135	- *
APZ Mobilty GmbH 1)	Darmstadt	100.00		-133	-158 *
Aquila Aircraft Leasing Ltd. 1)	Dublin, Ireland	-		-21	1
Assimoco S.p.A. 1)	Milan, Italy	68.94		235,238	27,428
Assimoco Vita S.p.A. 1)	Milan, Italy	82.14		212,585	25,880
Attrax Financial Services S.A. 1)	Luxembourg, Luxembourg	100.00		85,026	36,466
Aufbau und Handelsgesellschaft mbH 1)	Stuttgart	94.90		525	- *
AXICA Kongress- und Tagungszentrum Pariser Platz 3 GmbH 4)	Berlin	100.00		26	- *
BankingGuide GmbH	Düsseldorf	60.00		198	-967 *
BAUFINEX GmbH 1)	Schwäbisch Hall	70.00		1,856	197 *
BAUFINEX Service GmbH 1)	Berlin	50.00	75.00	25	- *
Bausparkasse Schwäbisch Hall Aktiengesellschaft - Bausparkasse der Volksbanken und Raiffeisenbanken - 4)	Schwäbisch Hall	97.58		1,812,302	-
Beteiligungsgesellschaft Westend 1 mbH & Co. KG 1)	Frankfurt am Main	94.90		18,256	771
BGP Asset Management GmbH i.L. 1)	Berlin	100.00		1,750	-54 *
BWG Baugesellschaft Württembergischer Genossenschaften mbH 1)	Stuttgart	94.78		9,965	- *
Canadian Iron Ore Railcar Leasing LP 1)	Toronto, Canada	-		-	-
Canadian Iron Ore Railcar Partner Ltd 1)	Toronto, Canada	-		-	-
carexpert Kfz-Sachverständigen GmbH 1)	Walluf	60.00		4,485	14 *
CHEMIE Pensionsfonds AG 1)	Wiesbaden	100.00		31,518	1,200
Chiefs Aircraft Holding (Malta) Limited 1)	Floriana, Malta	-		2,436	174
CI CONDOR Immobilien GmbH 1)	Hamburg	100.00		20,100	- *
compertis Beratungsgesellschaft für betriebliches Vorsorgemanagement mbH 1)	Wiesbaden	100.00		4,724	969 *
COMPLINA GmbH 1)	Wiesbaden	100.00		140	25 *
Condor Allgemeine Versicherungs-Aktiengesellschaft 1) 4)	Hamburg	100.00		41,762	-
Condor Dienstleistungs GmbH 1)	Hamburg	100.00		405	49 *
Condor Lebensversicherungs-Aktiengesellschaft 1)	Hamburg	94.98		51,742	-
DCAL Aircraft Malta Ltd. 1)	Floriana, Malta	-		-99	-15,219
DEGEKONZEPT Grundstücksverwaltungsgesellschaft mbH 1)	Eschborn	100.00		101	11
Deucalion Capital I (UK) Ltd. 1)	London, UK	-		532	41
Deucalion Capital II (MALTA) Limited 1)	Valletta, Malta	-		20	17
Deucalion Capital II (UK) Ltd. 1)	London, UK	-		-	-
Deucalion Capital II Limited 1)	George Town, Cayman Islands	-		-609	1,463
Deucalion Capital VI Limited 1)	George Town, Cayman Islands	-		-247	-13
Deucalion Capital VIII Limited 1)	George Town, Cayman Islands	-		-74	-6,698
Deucalion Ltd. 1)	George Town, Cayman Islands	-		28,883	1,709
DEVIF-Fonds Nr. 150 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a
DEVIF-Fonds Nr. 2 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a
DEVIF-Fonds Nr. 250 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a
DEVIF-Fonds Nr. 500 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a
DEVIF-Fonds Nr. 528 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a
DEVIF-Fonds Nr. 60 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a
DG Participacoes Ltda. 1)	São Paulo, Brazil	100.00		-	- *
Dilax Beteiligungs Verwaltungsgesellschaft mbH 1)	Berlin	100.00		25	- *
Dilax Beteiligungsgesellschaft mbH & Co. KG 1)	Berlin	92.39		2,381	- *
Dilax France SAS 1)	Valence, France	100.00		1,035	476
Dilax Intelcom AG 1)	Ermatingen, Switzerland	100.00		479	170
Dilax Intelcom GmbH 1)	Berlin	97.01		668	-1,055
Dilax Intelcom Iberica S.L.U. 1)	Madrid, Spain	100.00		365	6
Dilax Management Investment Reserve GmbH 1)	Berlin	100.00		227	-3 *
Dilax Management Investment Verwaltungsgesellschaft mbH 1)	Berlin	100.00		18	-1 *
Dilax Management Investmentgesellschaft mbH & Co. KG 1)	Berlin	99.50		179	- *
Dilax Systems Inc. 1)	Saint Lambert, Canada	100.00		778	233
Dilax Systems UK Ltd. 1)	London, UK	100.00		94	2,580
DILAX Systems US Inc 1)	Wilmington, USA	100.00		129	120
DVB Asia Ltd. 1)	Singapore, Singapore	100.00		189,879	111
DVB Bank America N.V. 1)	Willemstad, Curaçao	100.00		172,475	62,086
DVB Bank SE 4)	Frankfurt am Main	100.00		516,146	-
DVB Transport Finance Limited 1)	London, UK	100.00		4,907	419

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
DVG Deutsche Vermögensverwaltungs-Gesellschaft mit beschränkter Haftung 4)	Frankfurt am Main	100.00		82	- *
DZ BANK Kunststiftung gGmbH	Frankfurt am Main	100.00		25	- *
DZ BANK Sao Paulo Representacao Ltda. 2)	São Paulo, Brazil	100.00		441	46 *
DZ Beteiligungsgesellschaft mbH Nr. 11 4)	Frankfurt am Main	100.00		6,620	- *
DZ Beteiligungsgesellschaft mbH Nr. 14 4)	Frankfurt am Main	100.00		51	- *
DZ Beteiligungsgesellschaft mbH Nr. 18 4)	Frankfurt am Main	100.00		60,726	-
DZ Beteiligungsgesellschaft mbH Nr. 21 4)	Frankfurt am Main	100.00		25	- *
DZ Beteiligungsgesellschaft mbH Nr. 22	Frankfurt am Main	100.00		17	-1 *
DZ Beteiligungsgesellschaft mbH Nr. 23 4)	Frankfurt am Main	100.00		25	- *
DZ Beteiligungsgesellschaft mbH Nr. 24	Frankfurt am Main	100.00		17	- *
DZ CompliancePartner GmbH 4)	Neu-Isenburg	100.00		3,086	- *
DZ FINANCIAL MARKETS LLC	New York, USA	100.00		6,032	2,338 *
DZ Gesellschaft für Grundstücke und Beteiligungen mbH 4)	Frankfurt am Main	100.00		1,461	- *
DZ HYP AG 3) 4)	Hamburg/Münster	96.42		1,762,331	-
DZ PRIVATBANK (Schweiz) AG 1)	Zurich, Switzerland	100.00		200,872	21,673
DZ PRIVATBANK S.A. 3)	Strassen, Luxembourg	91.78		850,312	23,368
DZ Versicherungsvermittlung Gesellschaft mbH 4)	Frankfurt am Main	100.00		51	- *
DZ Vierte Beteiligungsgesellschaft mbH 4)	Frankfurt am Main	100.00		249,687	-
Englische Strasse 5 GmbH 1)	Wiesbaden	90.00		16,129	469 *
Evolit Consulting GmbH 1)	Vienna, Austria	100.00		1,881	1,399 *
Fischer Privatkunden Makler GmbH 1)	Herrenberg	90.00		n/a	n/a
FKS-NAVIGIUM GmbH 1)	Eschborn	100.00		-5,093	-1,926
FPAC (Malta) Limited 1)	Floriana, Malta	100.00		5	-3,499
fragWILHELM GmbH 1)	Wiesbaden	100.00		206	-1,328 *
Fundamenta Erteklanc Ingatlanközvetitö es Szolgaltato Kft. 1)	Budapest, Hungary	100.00		-1,135	-445
Fundamenta-Lakáskassza Lakás-takarékpénztár Zrt. 1)	Budapest, Hungary	51.25		156,136	15,071
Fundamenta-Lakáskassza Pénzügyi Közvetitö Kft. 1)	Budapest, Hungary	100.00		8,618	823
GAF Active Life 1 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	96.56		65,354	7,616 *
GAF Active Life 2 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	95.03		71,393	-4,377 *
Gartner, Keil & Co. Klima- und Kältetechnik GmbH 1)	Neulussheim	100.00		783	546 *
GENO Broker GmbH 4)	Frankfurt am Main	100.00		10,000	- *
GENO-Beteiligungsgesellschaft mbH	Düsseldorf	100.00		1,096	-38 *
Genoflex GmbH 1)	Nuremberg	70.00		1	- *
GMS Development - Gesellschaft für Softwareentwicklung m.b.H 1)	Paderborn	100.00		-	- *
GMS Holding GmbH 1)	Paderborn	88.89	75.00	15,448	2,455 *
GMS Management und Service GmbH 1)	Nidderau	100.00		102	25 *
Günther Kältetechnik GmbH 1)	Plüderhausen	60.00		940	243 *
GWG 1. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		2,000	1,076 *
GWG 2. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		3,000	839 *
GWG 3. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		7,000	1,504 *
GWG 4. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		9,000	1,213 *
GWG Beteiligungsgesellschaft mbH 1)	Stuttgart	100.00		28	1 *
GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG 1)	Stuttgart	91.57		375,106	15,585
GWG Hausbau GmbH 1)	Stuttgart	94.48		2,750	- *
GWG ImmoInvest GmbH 1)	Stuttgart	94.90		10,817	1,799 *
GWG Wohnpark Sendling GmbH 1)	Stuttgart	94.00		4,028	- *
HMDV Hausmeisterservice GmbH i.L. 1)	Berlin	100.00		303	63 *
HMV GmbH 1)	Erlangen	100.00		55	- *
HumanProtect Consulting GmbH 1)	Cologne	100.00		382	116 *
Ihr Autoputzmeister Service GmbH 1)	Graz, Austria	100.00		280	172 *
Immobilien-Gesellschaft 'DG Bank-Turm, Frankfurt am Main, Westend' mbH & Co. KG des genossenschaftlichen Verbundes 2)	Frankfurt am Main	95.97		193,808	16,352
Immobilien-Verwaltungsgesellschaft 'DG BANK-Turm, Frankfurt am Main, Westend' mbH	Frankfurt am Main	100.00		60	25 *
IMPETUS Bietergesellschaft mbH 4)	Düsseldorf	100.00		37,963	-
INFINDO Development GmbH 1)	Düsseldorf	100.00		n/a	n/a
IPConcept (Luxemburg) S.A. 1)	Strassen, Luxembourg	100.00		22,635	12,555
IPConcept (Schweiz) AG 1)	Zurich, Switzerland	100.00		6,400	623
Iron Maple Rail Ltd. 1)	Vancouver, Canada	100.00		-1,600	-1,218
IZD-Beteiligung S.à.r.l. 1)	Senningerberg, Luxembourg	100.00		50	-107 *
K2 Aircraft Malta Ltd 1)	Floriana, Malta	100.00		55	10
Kalsubai Shipping and Offshore Private Ltd. 1)	Mumbai, India	-		-	-
Kälte Eckert GmbH 1)	Markgröningen	70.00		7,066	-210 *
KBIH Beteiligungsgesellschaft für Industrie und Handel mbH	Frankfurt am Main	100.00		35,712	387
KRAVAG Umweltschutz und Sicherheitstechnik GmbH 1)	Hamburg	100.00		323	21 *
KRAVAG-ALLGEMEINE Versicherungs-Aktiengesellschaft 1)	Hamburg	100.00		107,507	36,699
KRAVAG-LOGISTIC Versicherungs-Aktiengesellschaft 1)	Hamburg	51.00		287,520	39,100

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
KV MSN 27602 Aircraft Ltd. 1)	Dublin, Ireland	-		-	-
Lantana Aircraft Leasing Limited 1)	Floriana, Malta	-		-176	2,916
Maple Leaf Shipping Holdco LLC 1)	Majuro, Marshall Islands	-		-	-
MD Aviation Capital Pte. Ltd. 1)	Singapore, Singapore	100.00		-19,705	14
MDAC 1 Pte Ltd. 1)	Singapore, Singapore	100.00		1,378	-119
MDAC 11 Pte Ltd. 1)	Singapore, Singapore	100.00		-40	-97
MDAC 2 Pte Ltd. 1)	Singapore, Singapore	100.00		-100	-377
MDAC 3 Pte Ltd. 1)	Singapore, Singapore	100.00		23	-192
MDAC 4 Pte Ltd. 1)	Singapore, Singapore	100.00		-95	-23
MDAC 5 Pte. Ltd. 1)	Singapore, Singapore	100.00		-169	-201
MDAC 6 Pte Ltd. 1)	Singapore, Singapore	100.00		-241	-549
MDAC 8 Pte Ltd. 1)	Singapore, Singapore	100.00		-94	18
MDAC 9 Pte Ltd. 1)	Singapore, Singapore	100.00		-114	-54
MDAC Malta Ltd. 1)	Floriana, Malta	-		-	-25
MI-Fonds 384 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds 388 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds 391 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds 392 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds F 57 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds F 59 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds F43 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds F44 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds F45 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds F46 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds F47 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds J01 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MI-Fonds J03 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a
MIRADOR Development GmbH 1)	Düsseldorf	100.00		n/a	n/a
MSN1164 Freighter Ltd. 1)	Dublin, Ireland	-		-	-
MSU Management-, Service- und Unternehmensberatung GmbH 1)	Landau in der Pfalz	60.00		919	159 *
NTK Immobilien GmbH 1)	Hamburg	100.00		44	- *
NTK Immobilien GmbH & Co. Management KG 1)	Hamburg	100.00		-	-409 *
Okoye Beteiligungsverwaltungs GmbH 1)	Vienna, Austria	80.00		7,994	1,076 *
Pascon GmbH 1)	Wiesbaden	100.00		36	4 *
payfree GmbH 1)	Düsseldorf	60.00		2,694	-831
PCAM Issuance II SA Issue RV AVL 001 1)	Luxembourg, Luxembourg	-		n/a	n/a
PDZ Personaldienste & Zeitarbeit GmbH 4)	Darmstadt	100.00		60	- *
Pension Consult-Beratungsgesellschaft für Altersvorsorge mbH 1)	Wiesbaden	100.00		724	-883 *
Phoenix Beteiligungsgesellschaft mbH 4)	Düsseldorf	100.00		5,849	-
Quoniam Asset Management GmbH 1)	Frankfurt am Main	93.79	100.00	29,016	13,171
R+V AIFM S.à.r.l. 1)	Luxembourg, Luxembourg	100.00		506	-356 *
R+V Allgemeine Versicherung Aktiengesellschaft 1) 4)	Wiesbaden	95.00		774,177	-
R+V Deutschland Real (RDR) 1)	Hamburg	-		n/a	n/a
R+V Dienstleistungs GmbH 1)	Wiesbaden	100.00		650	8 *
R+V Direktversicherung AG 1) 4)	Wiesbaden	100.00		13,320	-
R+V Erste Anlage GmbH i.L. 1)	Wiesbaden	100.00		290	- *
R+V INTERNATIONAL BUSINESS SERVICES Ltd., Dublin 1)	Dublin, Ireland	100.00		1,347	115 *
R+V KOMPOSIT Holding GmbH 1) 4)	Wiesbaden	100.00		1,832,272	-
R+V Krankenversicherung AG 1)	Wiesbaden	100.00		148,985	25,000
R+V Lebensversicherung Aktiengesellschaft 1)	Wiesbaden	100.00		1,206,933	-
R+V Mannheim P2 GmbH 1)	Wiesbaden	94.00		57,343	1,855 *
R+V Pensionsfonds AG 1)	Wiesbaden	100.00		37,173	2,560
R+V Pensionskasse AG 1)	Wiesbaden	100.00		104,033	800
R+V Personen Holding GmbH 1)	Wiesbaden	100.00		1,184,523	-7,388
R+V Rechtsschutz-Schadenregulierungs-GmbH 1)	Wiesbaden	100.00		326	49 *
R+V Service Center GmbH 1) 4)	Wiesbaden	100.00		2,869	- *
R+V Service Holding GmbH 1) 4)	Wiesbaden	100.00		196,695	-
R+V Treuhand GmbH 1)	Wiesbaden	100.00		58	7 *
R+V Versicherung AG 4)	Wiesbaden	92.21		2,149,774	-
RC II S.a.r.l. 1)	Munsbach, Luxembourg	90.00		8,833	71 *
ReiseBank Aktiengesellschaft 1)	Frankfurt am Main	100.00		19,267	-
RUV Agenturberatungs GmbH 1)	Wiesbaden	100.00		333	67 *
RV AIP S.C.S. SICAV-SIF 1)	Luxembourg, Luxembourg	99.00		10	- *
RV AIP S.C.S. SICAV-SIF - RV TF 2 Infra Debt 1)	Luxembourg, Luxembourg	97.55		411,014	6,035 *
RV AIP S.C.S. SICAV-SIF – RV TF 6 Infra Debt II 1)	Luxembourg, Luxembourg	98.40		30,500	- *
RV AIP S.C.S. SICAV-SIF – RV TF 7 Private Equity 1)	Luxembourg, Luxembourg	99.01		30,500	- *
RV AIP S.C.S. SICAV-SIF - RV TF Acquisition Financing 1)	Luxembourg, Luxembourg	98.67		156,509	2,136 *
RV AIP S.C.S. SICAV-SIF – TF 3 Primaries 1)	Luxembourg, Luxembourg	99.25		n/a	n/a
RV AIP S.C.S. SICAV-SIF – TF 4 Secondaries 1)	Luxembourg, Luxembourg	99.25		n/a	n/a

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
RV AIP S.C.S. SICAV-SIF – TF 5 Co-Investments 1)	Luxembourg, Luxembourg	99.25		n/a	n/a
RV Securitisation I S.à.r.l. 1)	Senningerberg, Luxembourg	100.00		n/a	n/a
RV Securitisation I S.à.r.l. - Aviation Opportunities I 1)	Senningerberg, Luxembourg	-		n/a	n/a
S2 Shipping and Offshore Ptd Ltd. 1)	Singapore, Singapore	100.00		-	-6,516
Schwäbisch Hall Facility Management GmbH 1)	Schwäbisch Hall	100.00		5,248	-1,572
Schwäbisch Hall Kreditservice GmbH 1) 4)	Schwäbisch Hall	100.00		18,775	-
Schwäbisch Hall Wohnen GmbH 1)	Schwäbisch Hall	100.00		3,303	-2,497
Shipping and Intermodal Investment Management Fund I LLC 1)	Majuro, Marshall Islands	-		-7,785	-4,266
SHT Schwäbisch Hall Training GmbH 1)	Schwäbisch Hall	100.00		4,671	362 *
SOS Kältetechnik GmbH 1)	Königsdorf	100.00		705	465 *
Sprint Italia S.r.l. 1)	Bolzano, Italy	51.00		n/a	n/a
Sprint Sanierung GmbH 1)	Cologne	100.00		29,973	-3,449 *
SRF III Ltd. 1)	Floriana, Malta	-		15	1,069
Stephenson Capital Limited 1)	George Town, Cayman Islands	-		-196	848
TeamBank AG Nürnberg 2) 4)	Nuremberg	92.60		539,699	-
Tiger Aircraft Leasing (UK) Limited 1)	London, UK	-		-	-
Twenty Holding Private Limited 1)	Singapore, Singapore	-		-	-
UI Infrastruktur Management SARL 1)	Luxembourg, Luxembourg	100.00		28	8 *
UI Management S.a.r.l. 1)	Luxembourg, Luxembourg	100.00		15	1 *
UI Private Debt Management S.à r.l. 1)	Luxembourg, Luxembourg	100.00		n/a	n/a
UI Vario: 2 issued by Union Investment Luxembourg S.A. 1)	Luxembourg, Luxembourg	-		n/a	n/a
UII Anzinger Strasse 29 Verwaltung LP GmbH 1)	Hamburg	100.00		n/a	n/a
UII Issy 3 Moulins SARL 1)	Paris, France	100.00		7	- *
UII MS Immobilien GP GmbH 1)	Hamburg	100.00		26	1
UII MS Immobilien Verwaltung LP GmbH 1)	Hamburg	100.00		n/a	n/a
UII PSD KN ImmoInvest GP GmbH 1)	Hamburg	100.00		85	17 *
UII SCE Management GP GmbH 1)	Hamburg	100.00		62	19 *
UII Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		20	-2 *
UIN Union Investment Institutional Fonds Nr. 1039 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 1041 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 1059 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 560 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 578 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 635 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 669 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 715 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 716 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 772 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 817 1)	Frankfurt am Main	-		3,282,176	-2,175
UIN Union Investment Institutional Fonds Nr. 825 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 833 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 834 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 839 1)	Frankfurt am Main	-		n/a	n/a
UIN Union Investment Institutional Fonds Nr. 913 1)	Frankfurt am Main	-		n/a	n/a
UIR Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		91	-5
UIW Austria Verwaltungs GmbH 1)	Erlangen	100.00		24	-1 *
UMB Unternehmens-Managementberatungs GmbH 1)	Wiesbaden	100.00		5,055	1,301 *
Union Asset Management Holding AG 2)	Frankfurt am Main	96.59		1,722,827	730,949
Union Investment Austria GmbH 1)	Vienna, Austria	100.00		20,405	3,456
Union Investment Institutional GmbH 1) 5)	Frankfurt am Main	100.00		103,970	-
Union Investment Institutional Property GmbH 1) 5)	Hamburg	90.00		45,862	23,454
Union Investment Luxembourg S.A. 1)	Luxembourg, Luxembourg	100.00		305,438	121,448
Union Investment Privatfonds GmbH 1) 5)	Frankfurt am Main	100.00		860,942	-
Union Investment Real Estate Asia Pacific Pte. Ltd. 1)	Singapore, Singapore	100.00		875	149 *
Union Investment Real Estate Austria AG 1)	Vienna, Austria	94.50		9,371	1,791
Union Investment Real Estate Digital GmbH 1) 5)	Hamburg	100.00		10,225	-
Union Investment Real Estate France S.A.S. 1)	Paris, France	100.00		3,457	1,229 *
Union Investment Real Estate GmbH 2) 5)	Hamburg	94.50		194,477	60,339
Union Investment Service Bank AG 1) 5)	Frankfurt am Main	100.00		103,115	-
Union IT-Services GmbH 1) 5)	Frankfurt am Main	100.00		7,634	-
Union Service-Gesellschaft mbH 1) 5)	Frankfurt am Main	100.00		12,660	-
Unterstützungskasse der Condor Versicherungsgesellschaften GmbH 1)	Hamburg	66.67		26	- *
URA Verwaltung GmbH 1)	Vienna, Austria	100.00		41	1 *
VisualVest GmbH 1) 5)	Frankfurt am Main	100.00		25,525	-
VR Consultingpartner GmbH 1)	Frankfurt am Main	100.00		1,078	- *
VR Equity Gesellschaft für regionale Entwicklung in Bayern mbH 1)	Frankfurt am Main	100.00		5,177	-20
VR Equitypartner Beteiligungskapital GmbH & Co. KG UBG 2)	Frankfurt am Main	100.00		36,021	2,757
VR Equitypartner GmbH 4)	Frankfurt am Main	100.00		69,070	-

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR Equitypartner Management GmbH 1)	Frankfurt am Main	100.00		348	-7
VR Factoring GmbH 4)	Eschborn	100.00		39,385	-
VR GbR 2)	Frankfurt am Main	100.00		229,212	84,244
VR HYP GmbH 1)	Hamburg	100.00		25	- *
VR Kreditservice GmbH 1) 4)	Hamburg	100.00		25	- *
VR Makler GmbH 1)	Hannover	100.00		428	-1,485 *
VR Mittelstandskapital Unternehmensbeteiligungs GmbH 2)	Düsseldorf	100.00		7,789	761
VR Payment GmbH	Frankfurt am Main	90.00		57,392	10,629
VR Real Estate GmbH 1)	Hamburg	100.00		25	- *
VR Smart Finanz AG 4)	Eschborn	100.00		211,070	-
VR Smart Finanz Bank GmbH 1) 4)	Eschborn	100.00		250,147	-
VR Smart Guide GmbH 1)	Eschborn	100.00		1,182	199
VR WERT Gesellschaft für Immobilienbewertung mbH 1) 4)	Hamburg	100.00		50	- *
VR-Leasing Beteiligungs GmbH 1)	Eschborn	100.00		98,643	-11
WBS Wohnwirtschaftliche Baubetreuungs- und Servicegesellschaft mbH 1)	Stuttgart	94.90		23,878	3,894
ZBI Beteiligungs GmbH 1)	Erlangen	100.00		46	-104 *
ZBI Fondsmanagement GmbH 1)	Erlangen	100.00		10,401	-
ZBI Fondsverwaltungs GmbH 1)	Erlangen	100.00		1,219	-59 *
ZBI GmbH 1)	Erlangen	94.90		9,365	-973
ZBI Immobilienmanagement GmbH 1)	Erlangen	100.00		745	- *
ZBI Professional Fondsverwaltungs GmbH 1)	Erlangen	100.00		5,225	5,073 *
ZBI Regiofonds Wohnen GF GmbH 1)	Erlangen	100.00		8	-3 *
ZBI Regiofonds Wohnen GmbH 1)	Erlangen	100.00		14	- *
ZBI Vertriebskoordinations GmbH i.L. 1)	Erlangen	100.00		807	782 *
ZBI Vorsorge - Plan Wohnen GF GmbH 1)	Erlangen	100.00		20	- *
ZBI Vorsorge - Plan Wohnen GmbH 1)	Erlangen	100.00		21	-1 *
ZBI Wohnen Plus Verwaltungs GmbH 1)	Erlangen	100.00		20	1 *
ZBI WohnWert Verwaltungs GmbH 1)	Erlangen	100.00		16	-1 *
ZBVV Zentral Boden Vermietung und Verwaltung GmbH 1)	Erlangen	100.00		6,061	-

JOINT VENTURES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
BAU + HAUS Management GmbH 1)	Wiesbaden	50.00		10,014	855 *
BEA Union Investment Management Limited 1)	Hong Kong, Hong Kong	49.00		57,973	11,198 *
Deutsche WertpapierService Bank AG	Frankfurt am Main	50.00		296,008	37,216
DZ BANK Galerie im Städel Kunstverwaltungsgesellschaft mbH	Frankfurt am Main	50.00		22	-2 *
IZD-Holding S.à.r.l. 1)	Senningerberg, Luxembourg	50.30	50.00	9	-61 *
Norafin Verwaltungs GmbH 1)	Mildenau	44.72	45.63	24,786	754 *
Prvá stavebná sporitel'na, a.s. 1)	Bratislava, Slovakia	32.50		284,075	17,224
R+V Kureck Immobilien GmbH Grundstücksverwaltung Braunschweig 1)	Wiesbaden	50.00		7,024	168 *
TrustBills GmbH i.L.	Hamburg	25.00		-	- *
Trustlog GmbH 1)	Hamburg	50.00		n/a	n/a
Versicherungs-Vermittlungsgesellschaft des Sächsischen Landesbauernverbandes mbH 1)	Dresden	50.00		215	1 *
Versicherungs-Vermittlungsgesellschaft mbH des Bauernverbandes Mecklenburg-Vorpommern e.V. (VVB) 1)	Neubrandenburg	50.00		204	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		72	4 *
Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse) Ltd. 1)	Tianjin, China	24.90		403,665	12,589

ASSOCIATES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
adorsys GmbH & Co. KG 1)	Nuremberg	25.89		2,073	831
adorsys Verwaltungs GmbH 1)	Nuremberg	25.90		29	1
aku.beteiligung GmbH 1)	Aalen	46.04		7,322	-417 *
Bankenkonsortium der Zenit GmbH, GbR	Düsseldorf	33.30		-	- *
bbv-service Versicherungsmakler GmbH 1)	Munich	25.20		2,251	377 *
Berlin-AI Management S.à r.l. 1)	Luxembourg, Luxembourg	20.00		n/a	n/a
Blitz SKB GmbH 1)	Giessen	41.76		n/a	n/a
Bookwire Holding GmbH 1)	Frankfurt am Main	49.00		11,679	-591 *
DITTRICH + CO Holding GmbH 1)	Frankfurt am Main	49.85		9,941	-18 *
Dr. Förster Holding GmbH 1)	Neu-Isenburg	20.06		-12,858	-1,280 *
European Convenience Food GmbH 1)	Garrel	41.16	41.52	3,366	-1,747 *
GBS Beteiligungsgesellschaft mbH 1)	Bayreuth	42.33		7,326	1,220 *
GGB-Beratungsgruppe GmbH	Stuttgart	23.13		-1,123	-1,858 *
GHM Holding GmbH 1)	Remscheid	40.00		17,471	-10 *
GHM MPP Reserve GmbH 1)	Remscheid	50.00		346	-3 *
GHM MPP Verwaltungs GmbH 1)	Remscheid	50.00		21	2 *
Glas Strack Holding GmbH 1)	Bochum	51.06	49.90	n/a	n/a
Goldeck Zetti Beteiligungsgesellschaft mbH 1)	Leipzig	39.23		33,749	2,673 *
Groneweg Verwaltungsgesellschaft mbH 1)	Greven	48.00		19,745	1,753 *
Hör Technologie GmbH 1)	Weiden i.d.OPf.	62.78	49.99	20,063	-2,250 *
Hudson Chemical Tankers Ltd 1)	Middlesex, UK	25.00		-	-
Impleco GmbH 1)	Berlin	50.00		1,929	-1,820
Informatik Consulting Systems Holding GmbH 1)	Stuttgart	49.83	49.43	9,543	1,475 *
Kapitalbeteiligungsgesellschaft für die mittelständische Wirtschaft in Nordrhein-Westfalen mbH - KBG -	Neuss	23.60		5,331	783 *
KCM Bulkers Ltd. 1)	Tortola, Virgin Islands	49.00		-	-
KTP Holding GmbH 1)	Bous	37.36		41,585	770 *
MSN 1272&1278 Aircraft Leasing 1)	Grand Cayman, Cayman Islands	20.00		n/a	n/a
N3K Group GmbH 1)	Heilbronn	25.10		15,546	1,448 *
Ostertag DeTeWe Group GmbH 1)	Walddorfhäslach	58.52	49.90	60	-25 *
Pesca Management GmbH 1)	Munich	49.30		n/a	n/a
SCL GmbH 1)	Butzbach	49.00		4,948	1,085
Signet Wohnmöbel GmbH 1)	Hochstadt am Main	49.80		2,256	266 *
Solectrix Holding GmbH 1)	Frankfurt am Main	49.90		n/a	n/a
Treuhand- und Finanzierungsgesellschaft für Wohnungs- und Bauwirtschaft mit beschränkter Haftung. Treufinanz	Düsseldorf	33.14		1,626	191 *
TREVA Entertainment GmbH i. L. 1)	Hamburg	32.70		-	- *
Votronic Elektronik-Systeme GmbH 1)	Lauterbach	49.80		2,582	1,708 *
Weisshaar Holding GmbH 1)	Deisslingen	84.94	49.92	-	- *

SHAREHOLDINGS OF 20% OR MORE

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
AMP Capital Infrastructure Debt Fund IV (EUR), L.P. 1)	Luxembourg, Luxembourg	39.84		223,130	1,929 *
AMP Capital Infrastructure Debt Fund V (EUR), L.P. 1)	Luxembourg, Luxembourg	89.49		n/a	n/a
Assiconf S.r.l. 1)	Turin, Italy	20.00		88	2 *
ASSICRA Servizi Assisurativi Banche di Credito Cooperativo Abruzzo e Molise S.r.l. 1)	Pescara, Italy	25.00		516	29 *
BRASIL FLOWERS S.A. 1)	Barbacena, Brazil	45.00		n/a	n/a
BREDS IV Aggregator SCSp 1)	Luxembourg, Luxembourg	90.91		n/a	n/a
Burghofspiele GmbH 1)	Eltville	20.00		-	-21 *
Bürgschaftsbank Brandenburg GmbH	Potsdam	25.31		32,101	1,077 *
Bürgschaftsbank Mecklenburg-Vorpommern GmbH	Schwerin	30.38		17,161	262 *
Bürgschaftsbank Sachsen-Anhalt GmbH	Magdeburg	29.73		16,577	141 *
Bürgschaftsbank Thüringen GmbH	Erfurt	22.13		27,285	65 *
Cheyne Real Estate Credit (CRECH) Fund IV Loans SCS SICAV-SIF 1)	Luxembourg, Luxembourg	20.83		332,487	7,677 *
Cheyne Real Estate Credit Holdings VII 1)	Luxembourg, Luxembourg	99.84		n/a	n/a
CMMT Partners L.P. 1)	Camden, USA	47.07		534,089	35,893 *
Credit Suisse Global Infrastructure SCA SICAR 1)	Luxembourg, Luxembourg	30.09		25,353	8,249 *
Digital Colony II Foreign Feeder-MV, SCSp 1)	Luxembourg, Luxembourg	68.10		n/a	n/a
DZ BANK Mikrofinanzfonds eG i.L. 2)	Frankfurt am Main	30.90	0.45	259	- *
EIG Global Project Fund V-A, L.P. 1)	Wilmington, USA	51.28		n/a	n/a
Finatem II GmbH & Co. KG 1)	Frankfurt am Main	20.20		12,519	2,908 *
FREUNDE DER EINTRACHT FRANKFURT Aktiengesellschaft 1)	Frankfurt am Main	32.05	19.84	6,525	257 *
GENOPACE GmbH 1) 5)	Berlin	27.49		200	- *
Global Energy & Power Infrastructure Fund III E, SCSp 1)	Luxembourg, Luxembourg	35.34		42,005	3,365 *
Global Infrastructure Partners III-C2, L.P. 1)	New York, USA	27.97		416,466	54,075 *
Golding Mezzanine SICAV IV Teilfonds 2 i.L. 1)	Luxembourg, Luxembourg	49.98		2,323	-745 *
GTIS Brazil II S-Feeder LP 1)	Edinburgh, UK	100.00		30,431	-83 *
KKR North America Fund XIII EEA Feeder SCSp 1)	Luxembourg, Luxembourg	95.32		n/a	n/a
Kreditgarantiegemeinschaft in Baden-Württemberg Verwaltungs-GmbH	Stuttgart	20.00		1,023	- *
Macquarie Asia Infrastructure Fund 2 SCSp 1)	Luxembourg, Luxembourg	50.48		161,028	10,981 *
Macquarie Asia Infrastructure Fund EU Feeder L.P. 1)	London, UK	100.00		96,458	10,174 *
MB Asia Real Estate Feeder (Scot.) L.P. 1)	Edinburgh, UK	34.80		1,304	-341 *
Medico 12 GmbH & Co. KG 1)	Frankfurt am Main	99.98		648	-178 *
Partners Group Direct Infrastructure 2020 (EUR), L.P.S.C.Sp. 1)	Luxembourg, Luxembourg	21.00		n/a	n/a
paydirekt GmbH	Frankfurt am Main	33.33		18,019	5,062 *
RV-CVIII Holdings, LLC 1)	Camden, USA	100.00		73,103	-7,933 *
Schroder Italien Fonds GmbH & Co. KG 1)	Frankfurt am Main	23.08	19.74	728	28 *
Schroder Property Services B.V. S.à.r.l. 1)	Senningerberg, Luxembourg	30.00		345	4 *
Swiss Life ESG Health Care Germany V S.C.S., SICAV-SIF 1)	Luxembourg, Luxembourg	41.33		n/a	n/a
Swiss Life Health Care III SICAV-FIS 1)	Luxembourg, Luxembourg	33.33		138,442	11,251 *
Swiss Life Health Care IV SICAV-FIS 1)	Luxembourg, Luxembourg	46.51		73,288	3,748 *
Technology DZ Venture Capital Fund I GmbH & Co. KG i.L. 1)	Munich	34.33		8,752	-51 *
TF H III Technologiefonds Hessen Gesellschaft mit beschränkter Haftung	Wiesbaden	25.00		6,957	-45 *
TF H Technologie-Finanzierungsfonds Hessen Gesellschaft mit beschränkter Haftung (TF H GmbH) i.L.	Wiesbaden	33.33		529	-23 *
Tishman Speyer Brazil Feeder (Scots/D), L.P. 1)	Edinburgh, UK	100.00		9,741	-8,442 *
Tishman Speyer European Real Estate Venture VIII Parallel SCSp 1)	Luxembourg, Luxembourg	55.88		-9,205	-6,708 *
Tishman Speyer European Strategic Office Fund Feeder, L.P. 1)	London, UK	97.18		1,287	515 *
TXS GmbH 1)	Hamburg	24.50		200	59 *
VAD Beteiligungen GmbH	Berlin	33.33		n/a	n/a
VBI Beteiligungs GmbH 1)	Vienna, Austria	24.50		2,624	2,203 *
VR-NetWorld GmbH 2)	Bonn	43.48		6,045	148 *

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	12.03		584,868	42,265 *
EDEKABANK Aktiengesellschaft	Hamburg	8.35		168,479	7,610 *
EURO Kartensysteme GmbH	Frankfurt am Main	19.60		12,292	105 *
PANELLINIA BANK SOCIETE ANONYME (under special liquidation)	Athens, Greece	8.42	5.28	-	- *
Protektor Lebensversicherungs-AG 1)	Berlin	5.27		7,853	2 *
Raiffeisendruckerei GmbH 1)	Neuwied	7.88		36,656	2,738 *
SCHUFA Holding AG 1)	Wiesbaden	17.94		127,985	40,247 *

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
aam2cred Debt Investments GmbH 1)	Frankfurt am Main	10.00		2,287	-603 *
ABE Clearing S.A.S a Capital Variable	Paris, France	1.92		36,533	5,354 *
AERS Consortio AG 1)	Stuttgart	16.50		114	-18 *
AgroRisk Polska Spólka z ograniczona odpowiedzialnoscia 1)	Poznań Poland	15.00		n/a	n/a
Airport Garden Services and Business Center S.A. 1)	Brussels-Zaventem, Belgium	0.33		2,081	1,808 *
AKA Ausfuhrkredit-Gesellschaft mit beschränkter Haftung	Frankfurt am Main	0.31		261,565	8,372 *
Akademie Badischer Volksbanken und Raiffeisenbanken GmbH 1)	Karlsruhe	0.03		n/a	n/a *
Anlegerentschädigung von Wertpapierfirmen GmbH 1)	Vienna, Austria	0.57	1.61	n/a	n/a
Architrave GmbH 1)	Berlin	12.04		n/a	n/a *
ARDIAN Infrastructure Fund V B S.C.S., SICAV-RAIF 1)	Luxembourg, Luxembourg	13.58		55,128	-10,738 *
Assicoop-Assicurazioni Cooperative S.r.l. 1)	Catania, Italy	0.41		n/a	n/a
assistance partner GmbH & Co. KG 1)	Munich	5.01		1,102	102 *
Atruvia AG 2)	Frankfurt am Main	0.35		447,672	24,679 *
Bank Polskiej Spoldzielczosci Spolka Akcyjna	Warsaw, Poland	1.00		179,726	6,355,881 *
BayBG Bayerische Beteiligungsgesellschaft mbH	Munich	9.38		244,646	2,274 *
Bayerische Raiffeisen- Beteiligungs-Aktiengesellschaft 2)	Beilngries	1.85		855,534	10,818 *
Berliner Volksbank eG 1)	Berlin	-	0.10	-	- *
Beteiligungs-Aktiengesellschaft der bayerischen Volksbanken 1)	Pöcking	1.14		232,160	159 *
BGG Bayerische Garantiegesellschaft mit beschränkter Haftung für mittelständische Beteiligungen	Munich	13.15		57,390	2,016 *
Blackrock Renewable Income Europe Fund 1)	Dublin, Ireland	7.69		474,768	34,794 *
Blackstone Real Estate Partners Europe III L.P. 1)	New York, USA	1.62		579,252	5,229 *
Blackstone Real Estate Partners International I.E. L.P. 1)	New York, USA	9.77		-26,468	30,572 *
BLHV Versicherungs-Service GmbH 1)	Freiburg	9.00		124	99 *
BTG Beteiligungsgesellschaft Hamburg mbH	Hamburg	10.00		5,007	-134 *
Bürgschaftsbank Bremen GmbH	Bremen	4.86		8,395	136 *
Bürgschaftsbank Hessen GmbH	Wiesbaden	15.87		22,806	982 *
Bürgschaftsbank Nordrhein-Westfalen GmbH Kreditgarantiegemeinschaft	Neuss	15.75		39,244	1,022 *
Bürgschaftsbank Rheinland-Pfalz GmbH	Mainz	14.31		17,224	40 *
Bürgschaftsbank Sachsen GmbH	Dresden	14.66	16.59	44,260	175 *
Bürgschaftsbank Schleswig-Holstein Gesellschaft mit beschränkter Haftung	Kiel	11.79		41,909	84 *
Bürgschaftsgemeinschaft Hamburg GmbH	Hamburg	6.36		26,939	156 *
Caprese S.A. 1)	Brussels-Zaventem, Belgium	-		3,154	-594 *
Cash Logistik Security AG 1)	Düsseldorf	4.10		6,230	1,041 *
CASSA CENTRALE BANCA - CREDITO COOPERATIVO ITALIANO S.P.A.	Trento, Italy	3.69		1,133,926	35,868 *
CLS Group Holdings AG	Lucerne, Switzerland	0.69		397,709	-33,271 *
Coop System S.p.A. 1)	Rome, Italy	1.97		n/a	n/a
Copenhagen Infrastructure III K/S 1)	Copenhagen K, Denmark	5.94		n/a	n/a
Copenhagen Infrastructure III US AIV Non-QFPF Blocker K/S 1)	Copenhagen K, Denmark	13.20		n/a	n/a
Copenhagen Infrastructure III-A K/S 1)	Copenhagen K, Denmark	5.87		n/a	n/a
Copenhagen Infrastructure IV K/S 1)	Copenhagen K, Denmark	7.15		n/a	n/a
Copenhagen Infrastructure IV US AIV Non-QFPF K/S 1)	Copenhagen K, Denmark	15.24		n/a	n/a
Crown Secondaries Special Opportunities II S.C.S. 1)	Luxembourg, Luxembourg	7.71		n/a	n/a
Curzon Capital Partners III LP 1)	London, UK	11.99		n/a	n/a
Curzon Capital Partners IV LP 1)	London, UK	10.73		287,011	40,641 *
Deutsche Bauernsiedlung - Deutsche Gesellschaft für Landentwicklung (DGL) mbH 1)	Frankfurt am Main	16.26		-	- *
Deutsche Börse Commodities GmbH	Frankfurt am Main	16.20	14.48	10,370	6,955 *
DG IMMOBILIEN MANAGEMENT Gesellschaft mbH	Frankfurt am Main	5.01		20,600	1,211 *
DG IMMOBILIEN-Objektgesellschaft 'Stuttgart, Industriestrasse' Kreft & Dr. Neumann KG (DGI 49) i.L.	Frankfurt am Main	0.98		-	- *
DG Nexolution eG 2)	Wiesbaden	1.54	1.58	69,442	1,948 *
DI Rathaus-Center Pankow Nr.35 KG 1)	Düren	3.86		27,574	2,303 *
Domus Beteiligungsgesellschaft der Privaten Bausparkassen mbH Berlin 1)	Berlin	14.13		30	-2 *
EIG Energy Fund XVI (Scotland) L.P. 1)	Edinburgh, UK	14.02		432,903	7,146 *
EIG Energy Fund XVII (Scotland) L.P. 1)	Edinburgh, UK	15.61		302,603	28,351 *
EPI Interim Company SE	Sint-Jans Molenbeek, Belgium	4.55		n/a	n/a
Euro Capital S.A.S. 1)	Metz, France	4.44		30,557	-1,689 *
European Property Investors Special Opportunities, L.P. 1)	London, UK	6.35		136,153	-56,671 *
European Property Investors, L. P. 1)	London, UK	6.50		5,349	-80 *
EXTREMUS Versicherungs-Aktiengesellschaft 1)	Cologne	5.00		64,219	119 *
FIDUCIA Mailing Services eG 2)	Karlsruhe	0.13		76	- *
GAD Beteiligungs GmbH & Co. KG 2)	Münster	2.49		119,597	3,020 *
GBK Holding GmbH & Co. KG 1)	Kassel	0.02		468,549	11,365 *
GDV Dienstleistungs-GmbH 1)	Hamburg	2.82		28,941	1,511 *
GI Data Infrastructure Fund-A LP 1)	Wilmington, USA	13.60		n/a	n/a

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
GIP Capital Solutions Feeder Fund II (EEA) 1)	Luxembourg, Luxembourg	15.00		-1,665	-1,087 *
GLADBACHER BANK Aktiengesellschaft von 1922	Mönchengladbach	17.53		39,878	749 *
Global Infrastructure Partners IV-C2, L.P. 1)	Luxembourg, Luxembourg	17.17		-2,969	-48,952 *
Global Renewable Power Infrastructure Fund III (C), SCSp 1)	Luxembourg, Luxembourg	6.40		n/a	n/a
GMB Systems GmbH & Co. KG 1)	Hamburg	10.75		n/a	n/a
GMS Mitarbeiter Beteiligungsgesellschaft UG & Co.KG 1)	Paderborn	4.00		986	-8 *
Golding Mezzanine SICAV III i.L. 1)	Luxembourg, Luxembourg	1.30		38,200	-10,642 *
Grand Hotel Heiligendamm GmbH & Co. KG Fundus Fonds Nr. 34 1)	Vettweiss-Disternich	1.90		-9,257	-31 *
Gründerfonds Ruhr GmbH & Co. KG 1)	Essen	7.25		9,183	-647 *
HANDWERKSBAU NIEDERRHEIN AKTIENGESELLSCHAFT	Düsseldorf	10.15		28,056	1,807 *
heal.capital I GmbH & Co. KG 1)	Berlin	0.99		-	-1,010 *
Hines European Value Fund SCSp 1)	Luxembourg, Luxembourg	13.87		488,081	27,341 *
Immigon portfolioabbau ag i.A.	Vienna, Austria	3.79		717,881	-4,903 *
Immo Feest en Cultuurpaleis Oostende SA 1)	Brussels, Belgium	-		16,010	-631 *
Interessengemeinschaft Frankfurter Kreditinstitute GmbH	Frankfurt am Main	7.01		24,359	8,677 *
IVS Immobilien GmbH 1)	Schiffweiler	6.00		26	- *
K in Kortrijk S.A. 1)	Brussels, Belgium	-		90,880	-5,560 *
KLAAS MESSTECHNIK GmbH 1)	Seelze-Harenberg	15.00		28	- *
KLV BAKO Vermittlungs-GmbH	Karlsruhe	10.00		251	9 *
Konsortium der Absatzfinanzierungsinstitute plettac-assco GbR	Wuppertal	-	7.08	n/a	n/a
Kreditgarantiegemeinschaft der Freien Berufe Baden-Württemberg Verwaltungs GmbH	Stuttgart	4.76		153	- *
Kreditgarantiegemeinschaft der Industrie, des Verkehrsgewerbes und des Gastgewerbes Baden-Württemberg Verwaltungs-GmbH	Stuttgart	15.28		1,300	- *
Kreditgarantiegemeinschaft des bayerischen Gartenbaues GmbH	Munich	9.07		649	- *
Kredit-Garantiegemeinschaft des bayerischen Handwerks Gesellschaft mit beschränkter Haftung	Munich	12.00		4,846	- *
Kreditgarantiegemeinschaft des Gartenbaues Baden-Württemberg Verwaltungs-GmbH	Stuttgart	12.00		138	- *
Kreditgarantiegemeinschaft des Handels Baden-Württemberg Verwaltungs-GmbH	Stuttgart	10.05		1,022	- *
Kreditgarantiegemeinschaft des Handwerks Baden-Württemberg Verwaltungs-GmbH	Stuttgart	10.05		1,001	- *
Kreditgarantiegemeinschaft des Hotel- und Gaststättengewerbes in Bayern GmbH	Munich	9.66		4,359	- *
Kreditgarantiegemeinschaft für den Handel in Bayern GmbH	Munich	7.19		6,317	- *
Kunststiftung Baden-Württemberg GmbH 1)	Stuttgart	0.50		-	- *
Les Grands Pres S.A. 1)	Brussels-Zaventem, Belgium	-	0.11	52,074	2,864 *
Macquarie European Infrastructure Fund 4 L.P. 1)	St. Peter Port, Guernsey	5.70		2,765,494	405,131 *
Macquarie European Infrastructure Fund 6 SCSp 1)	Luxembourg, Luxembourg	4.15		-19,959	-19,961 *
MBG H Mittelständische Beteiligungsgesellschaft Hessen GmbH	Wiesbaden	16.26		10,881	393 *
MBG Mittelständische Beteiligungsgesellschaft Baden-Württemberg Gesellschaft mit beschränkter Haftung	Stuttgart	9.94	8.33	83,352	2,056 *
MBG Mittelständische Beteiligungsgesellschaft Rheinland-Pfalz mbH	Mainz	9.80	11.11	16,353	362 *
MBG Mittelständische Beteiligungsgesellschaft Schleswig-Holstein mbH	Kiel	14.59	15.22	44,210	724 *
Mittelständische Beteiligungsgesellschaft Berlin-Brandenburg mbH	Potsdam	8.89		24,155	1,263 *
Mittelständische Beteiligungsgesellschaft Mecklenburg-Vorpommern mbH	Schwerin	16.00		17,962	1,344 *
Mittelständische Beteiligungsgesellschaft Niedersachsen (MBG) mit beschränkter Haftung	Hannover	19.92		15,097	366 *
Mittelständische Beteiligungsgesellschaft Sachsen mbH	Dresden	9.38		49,446	277 *
Mittelständische Beteiligungsgesellschaft Sachsen-Anhalt (MBG) mbH	Magdeburg	19.84		24,270	21 *
Mittelständische Beteiligungsgesellschaft Thüringen mbH	Erfurt	10.28		27,422	580 *
Münchener Hypothekenbank eG 2)	Munich	1.18		1,546,756	37,701 *
Munster S.A. 1)	Luxembourg, Luxembourg	0.11		1,923	-505 *
Niedersächsische Bürgschaftsbank (NBB) Gesellschaft mit beschränkter Haftung	Hannover	17.68		30,140	39 *
North Haven Infrastructure Partners III Feeder A L.P. 1)	Kitchener, Canada	3.05		n/a	n/a
North Haven Infrastructure Partners III SCSp 1)	Luxembourg, Luxembourg	0.61		n/a	n/a
Opción Jamantab S. A. DE C. V. 1)	Mexico City, Mexico	-		9,957	-171 *
Partners Group Direct Equity IV (EUR) S.C.A., SICAV-RAIF 1)	Luxembourg, Luxembourg	6.84		55,128	-10,738 *
Partners Group Global Mezzanine 2007 S.C.A., SICAR 1)	Luxembourg, Luxembourg	2.24		45,799	1,580 *
PRIVATE EQUITY SCS SICAV-SIF 1)	Luxembourg, Luxembourg	-		n/a	n/a
Prosa Beteiligungs GmbH & Co. KG 1)	Frankfurt am Main	15.63		587	-408 *
Raiffeisen Waren-Zentrale Rhein-Main eG	Cologne	2.00		114,597	6,882 *
Raiffeisen-Kassel A-Beteiligungs GmbH & Co. KG	Kassel	8.22		172,763	7,065 *
Raiffeisen-Kassel B-Beteiligungs GmbH & Co. KG	Kassel	8.22		172,763	7,065 *
Royale 120 New Building S.A. 1)	Brussels-Zaventem, Belgium	-		43,841	1,049 *

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Royale 120 S.A. 1)	Brussels-Zaventem, Belgium	0.01		1,011	-38 *
RPD Real Property Development GmbH 1)	Langenwang, Austria	10.00		1,208	521
RREEF Pan-European Infrastructure Feeder GmbH & Co. KG 1)	Eschborn	17.70		348,880	-116 *
S.W.I.F.T. Society for Worldwide International Financial Telecommunication 2)	La Hulpe, Belgium	0.24		493,915	-137 *
Saarländische Wagnisfinanzierungsgesellschaft mbH	Saarbrücken	2.59		8,267	110 *
SALEG Sachsen-Anhaltinische Landesentwicklungs GmbH 1)	Magdeburg	1.15		13,842	378 *
Sana Kliniken AG 1)	Ismaning	0.69		1,017,094	66,685 *
Schulze-Delitzsch-Haus, eingetragene Genossenschaft 1)	Bonn	0.97		1,503	195 *
SGB-Bank Spólka Akcyjna	Poznań Poland	0.28		153,307	5,973 *
SIGNA Development Selection AG 1)	Innsbruck, Austria	5.00		674,359	125,995 *
SIGNA Prime Selection AG 1)	Innsbruck, Austria	5.00		3,283,737	497,973 *
Société de la Bourse de Luxembourg S.A. 1)	Luxembourg, Luxembourg	0.04		128,838	7,611 *
Splash Investment GmbH 1)	Munich	11.69		n/a	n/a
Strategie Invest SICAV 1)	Zurich, Switzerland	0.07		n/a	n/a
Süddeutsche Zuckerrübenverwertungs-Genossenschaft eG	Ochsenfurt	4.44	4.55	201,688	7,555 *
Target Partners Capital GmbH & Co. KG 1)	Munich	10.00	10.01	278	-7 *
Technologiezentrum Schwäbisch Hall GmbH 1)	Schwäbisch Hall	4.17	5.56	-	- *
Teko - Technisches Kontor für Versicherungen Gesellschaft mit beschränkter Haftung 1)	Düsseldorf	10.00		142	31 *
True Sale International GmbH	Frankfurt am Main	7.69		4,624	-240 *
Ufficio Centrale Italiano di Assistenza Assicurativa Automobilisti in Circolazione Internazionale -U.C.I. Societe consortie a R.L. 1)	Milan, Italy	0.09		1,330	16 *
UII Anzinger Strasse 29 GmbH & Co. KG 1)	Hamburg	0.01		n/a	n/a
UII MS Immobilien GmbH & Co. geschlossene InvKG 1)	Hamburg	0.01		n/a	n/a
UIR Belgique 1 S.A. 1)	Brussels, Belgium	0.13		68,492	1,877 *
UIR Le Président 1 1)	Brussels-Zaventem, Belgium	-	0.06	3,539	-175 *
UIR MU III S.A. de C.V. 1)	Mexico City, Mexico	-		6,628	-183 *
UniInstitutional Private Debt SCS SICAV-SIF 1)	Senningerberg, Luxembourg	-		n/a	n/a
UniInstitutional Sachwerte SCS SICAV-SIF 1)	Luxembourg, Luxembourg	-		n/a	n/a
Visa Inc.	San Francisco, USA	-		30,890,631	10,758,817 *
VNT Automotive GmbH 1)	Langenwang, Austria	10.00		9,416	467 *
VR-Bank Heilbronn Schwäbisch Hall eG 1)	Schwäbisch Hall	-	0.01	123,808	4,516 *
VR-IMMOBILIEN-LEASING GmbH 1)	Eschborn	6.00		14,470	1,362 *
WESTFLEISCH Finanz AG 1)	Münster	0.36		243,902	8,080 *
WRW Wohnungswirtschaftliche Treuhand Rheinland-Westfalen Gesellschaft mit beschränkter Haftung i.L.	Düsseldorf	2.73		n/a	n/a
ZBI Regiofonds Wohnen 1 GmbH & Co. geschlossene Investmentkommanditgesellschaft 1)	Erlangen	0.02		n/a	n/a
ZBI Vorsorge-Plan Wohnen 1 GmbH & Co. KG 1)	Erlangen	0.48		n/a	n/a
ZBI Zentral Boden Immobilien GmbH & Co. KG WohnWert 1 Geschlossene Investmentkommanditgesellschaft 1)	Erlangen	-		n/a	n/a
ZG Raiffeisen eG	Karlsruhe	1.01	0.02	81,627	3,639 *

1) Held indirectly.
2) Including shares held indirectly.
3) A letter of comfort exists.
4) Profit-and-loss transfer agreement with DZ BANK (direct or indirect).
5) Section 264 (3) HGB and section 264b HGB have been applied.
n/a = no figures available.
* Prior-year figures.