Consolidated financial statements

Income statement
for the period January 1 to December 31, 2022

€ million	(Note)	2022	2021
Net interest income	(34)	3,322	2,785
Interest income		5,919	4,174
Interest income calculated using the effective interest method		5,819	4,362
Interest income not calculated using the effective interest method		101	-189
Current income and expense		55	62
Interest expense		-2,652	-1,451
Net fee and commission income	(35)	2,749	2,935
Fee and commission income		5,262	5,521
Fee and commission expenses		-2,513	-2,586
Gains and losses on trading activities	(36)	823	152
Gains and losses on investments	(37)	-119	245
Other gains and losses on valuation of financial instruments	(38)	-286	242
Gains and losses from the derecognition of financial assets measured at amortized cost	(39)	35	-
Premiums earned	(40)	18,397	18,994
Gains and losses on investments held by insurance companies and other insurance company gains and losses	(41)	-3,389	5,251
of which interest income calculated using the effective interest method		1,478	1,515
Insurance benefit payments	(42)	-12,127	-20,356
Insurance business operating expenses	(43)	-3,068	-3,047
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	(44)	8	-
Loss allowances	(45)	-304	120
Administrative expenses	(46)	-4,447	-4,265
Other net operating income	(47)	204	41
Profit before taxes		1,797	3,096
Income taxes	(48)	-724	-920
Net profit		**1,073**	**2,176**
Attributable to:			
Shareholders of DZ BANK		1,031	1,996
Non-controlling interests		42	180

Statement of comprehensive income for the period January 1 to December 31, 2022

€ million	(Note)	2022	2021
Net profit		1,073	2,176
Other comprehensive income/loss		-6,171	-400
Items that may be reclassified to the income statement		**-6,277**	**-941**
Gains and losses on debt instruments measured at fair value through other comprehensive income	(49)	-8,978	-1,389
Exchange differences on currency translation of foreign operations	(49)	-	-16
Gains and losses on hedges of net investments in foreign operations	(49)	-	5
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	(49)	1	15
Income taxes	(50)	2,700	445
Items that will not be reclassified to the income statement		**106**	**541**
Gains and losses on equity instruments for which the fair value OCI option has been exercised		-327	473
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk		170	39
Gains and losses arising from remeasurement of defined benefit plans		407	90
Income taxes	(50)	-145	-62
Total comprehensive income/loss		**-5,098**	**1,776**
Attributable to:			
Shareholders of DZ BANK		-4,470	1,629
Non-controlling interests		-627	148

Balance sheet as at December 31, 2022

ASSETS

€ million	(Note)	Dec. 31, 2022	Dec. 31, 2021
Cash and cash equivalents	(14, 51)	93,717	86,029
Loans and advances to banks	(15, 52)	123,444	107,659
Loans and advances to customers	(15, 53)	203,646	195,665
Hedging instruments (positive fair values)	(16, 54)	1,568	389
Financial assets held for trading	(17, 55)	48,909	47,321
Investments	(18, 56)	43,393	52,440
Investments held by insurance companies	(57, 62)	105,955	129,119
Property, plant and equipment, investment property, and right-of-use assets	(19, 58, 62)	1,960	1,881
Income tax assets	(20, 59)	3,428	1,141
Other assets	(21, 60, 62)	7,204	6,501
Loss allowances	(22, 61)	-2,029	-1,956
Non-current assets and disposal groups classified as held for sale	(23, 63)	19	164
Fair value changes of the hedged items in portfolio hedges of interest-rate risk		-4,173	920
Total assets		**627,041**	**627,273**

EQUITY AND LIABILITIES

€ million	(Note)	Dec. 31, 2022	Dec. 31, 2021
Deposits from banks	(24, 64)	186,787	196,562
Deposits from customers	(24, 65)	159,429	138,975
Debt certificates issued including bonds	(25, 66)	82,349	79,652
Hedging instruments (negative fair values)	(16, 67)	442	1,678
Financial liabilities held for trading	(17, 68)	52,478	43,411
Provisions	(26, 69)	3,248	3,992
Insurance liabilities	(11, 70)	103,795	118,863
Income tax liabilities	(20, 59)	1,063	1,456
Other liabilities	(21, 71)	10,999	10,797
Subordinated capital	(27, 72)	4,521	3,074
Liabilities included in disposal groups classified as held for sale	(23, 63)	-	2
Fair value changes of the hedged items in portfolio hedges of interest-rate risk		-1,147	150
Equity	(73)	23,076	28,661
Shareholders' equity		21,967	26,860
Subscribed capital		4,926	4,926
Capital reserve		5,551	5,551
Retained earnings		13,482	12,581
Reserve from other comprehensive income		-4,142	1,651
Additional equity components		2,150	2,150
Non-controlling interests		1,109	1,801
Total equity and liabilities		**627,041**	**627,273**

Statement of changes in equity

€ million	Sub-scribed capital	Capital reserve	Retained earnings	Reserve from other compre-hensive income	Addi-tional equity compo-nents	**Share-holders' equity**	Non-control-ling interests	**Total equity**
Equity as at Jan. 1, 2021	4,926	5,551	11,089	2,212	2,245	26,024	3,093	29,116
Net profit	-	-	1,996	-	-	1,996	180	2,176
Other comprehensive income/loss	-	-	70	-438	-	-368	-32	-400
Total comprehensive income/loss	**-**	**-**	**2,067**	**-438**	**-**	**1,629**	**148**	**1,776**
Capital increase/capital repaid	-	-	-29	-	-95	-124	-1,363	-1,487
Changes in scope of consolidation	-	-	1	-	-	1	-2	-1
Acquisition/disposal of non-controlling interests	-	-	6	-2	-	4	-25	-21
Change due to merger	-	-	-20	-	-	-20	-	-20
Reclassifications within equity	-	-	122	-122	-	-	-	-
Dividends paid	-	-	-573	-	-	-573	-47	-621
Distribution of dividend on additional equity components	-	-	-81	-	-	-81	-	-81
Equity as at Dec. 31, 2021	4,926	5,551	12,581	1,651	2,150	26,860	1,801	28,661
Net profit	-	-	1,031	-	-	1,031	42	1,073
Other comprehensive income/loss	-	-	271	-5,773	-	-5,502	-669	-6,171
Total comprehensive income/loss	**-**	**-**	**1,302**	**-5,773**	**-**	**-4,470**	**-627**	**-5,098**
Capital increase/capital repaid	-	-	-	-	-	-	19	19
Changes in scope of consolidation	-	-	-2	5	-	4	1	4
Acquisition/disposal of non-controlling interests	-	-	1	3	-	4	1	5
Reclassifications within equity	-	-	29	-29	-	-	-	-
Dividends paid	-	-	-358	-	-	-358	-86	-444
Distribution of dividend on additional equity components	-	-	-71	-	-	-71	-	-71
Equity as at Dec. 31, 2022	**4,926**	**5,551**	**13,482**	**-4,142**	**2,150**	**21,967**	**1,109**	**23,076**

Further information on equity is presented in note 73.

Statement of cash flows

€ million	2022	2021
Net profit	**1,073**	**2,176**
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	5,065	-3,738
Non-cash changes in provisions	126	640
Non-cash changes in insurance liabilities	-13,992	8,681
Other non-cash income and expenses	-2,007	287
Gains and losses on the disposal of assets and liabilities	607	-116
Other adjustments (net)	-9,627	-3,510
Subtotal	-18,755	4,420
Cash changes in assets and liabilities arising from operating activities		
Loans and advances to banks	-15,661	-4,649
Loans and advances to customers	-8,743	-6,202
Other assets from operating activities	-7,098	-2,399
Hedging instruments (positive and negative fair values)	7,983	995
Financial assets and financial liabilities held for trading	8,168	-11,208
Deposits from banks	-9,760	18,904
Deposits from customers	21,323	5,469
Debt certificates issued including bonds	2,977	9,431
Other liabilities from operating activities	-1,520	-1,000
Interest, dividends, and operating lease payments received	6,779	5,336
Interest paid	-2,838	-2,082
Income taxes paid	-691	-373
Cash flows from operating activities	**-17,836**	**16,642**
Proceeds from the sale of investments	23,403	17,784
Proceeds from the sale of investments held by insurance companies	52,747	23,571
Proceeds from the sale of property, plant and equipment, and investment property (excluding assets subject to operating leases)	13	1
Proceeds from the sale of intangible non-current assets	8	-
Payments for the acquisition of investments	-15,721	-10,151
Payments for the acquisition of investments held by insurance companies	-35,331	-27,809
Payments for the acquisition of property, plant and equipment, and investment property (excluding assets subject to operating leases)	-72	-78
Payments for the acquisition of intangible non-current assets	-123	-131
Changes in scope of consolidation	-248	70
of which proceeds from the sale of investments in consolidated subsidiaries net of cash divested	-	70
of which payments for the acquisition of investments in consolidated subsidiaries net of cash acquired	-248	-
Cash flows from investing activities	**24,676**	**3,257**
Proceeds from capital increases by non-controlling interests	19	-
Dividends paid to shareholders of DZ BANK	-358	-573
Dividends paid to non-controlling interests	-86	-47
Distribution of dividend on additional equity components	-71	-81
Other payments to shareholders of DZ BANK	-	-124
Other payments to non-controlling interests	-	-1,363
Net change in cash and cash equivalents from other financing activities (including subordinated capital)	1,344	-36
Cash flows from financing activities	**848**	**-2,224**

€ million	2022	2021
Cash and cash equivalents as at January 1	86,029	68,354
Cash flows from operating activities	-17,836	16,642
Cash flows from investing activities	24,676	3,257
Cash flows from financing activities	848	-2,224
Cash and cash equivalents as at December 31	**93,717**	**86,029**

The statement of cash flows shows the changes in cash and cash equivalents during the financial year. Cash and cash equivalents consist of cash on hand and balances with central banks. The cash and cash equivalents do not include any financial investments with maturities of more than 3 months at the date of acquisition. Changes in cash and cash equivalents are broken down into operating, investing, and financing activities.

Cash flows from operating activities comprise cash flows mainly arising in connection with the revenue-producing activities of the group and other activities that cannot be classified as investing or financing activities. Cash flows related to the acquisition and disposal of non-current assets are allocated to investing activities. Cash flows from financing activities include cash flows arising from transactions with equity owners and from other borrowing to finance business activities, in particular from subordinated capital.

Cash payments from lessees in repayment of lease liabilities, which are included in cash flows from financing activities, amounted to €110 million (2021: €109 million).

The first-time consolidation of subsidiaries generated a cash inflow of €3 million (2021: no such cash inflows).

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, Germany, (DZ BANK) for the 2022 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 23, 2023.

» 02 Accounting policies and estimates

Changes in accounting policies

First-time application in 2022 of changes in IFRS
The following amendments to IFRS are applied for the first time in DZ BANK's consolidated financial statements for the 2022 financial year:
- Amendments to IFRS 3 *Business Combinations*
- Amendments to IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*
- Amendments to IAS 16 *Property, Plant and Equipment*
- *Annual Improvements to IFRSs 2018–2020 Cycle*

The amendments to IFRS 3 *Business Combinations* include updated references to the revised 2018 Conceptual Framework and the addition of an exception to the recognition principles in IFRS 3. For liabilities and contingent liabilities that are recognized separately within the scope of IAS 37 or IFRIC 21, an acquirer applies IAS 37 or IFRIC 21 to identify the liabilities it has assumed in a business combination. The amendments also add an explicit statement that an acquirer does not recognize contingent assets acquired in a business combination.

The amendments to IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* clarify which costs are included in the assessment of whether a contract is onerous. When determining the cost of fulfilling a contract, the entity must include all costs that relate directly to the contract.

The amendments to IAS 16 *Property, Plant and Equipment* prohibit the deduction from the cost of an item of property, plant, and equipment of any proceeds from selling articles produced while bringing that item to the location and condition necessary for it to operate in the manner intended by management. Instead, those sales proceeds and the cost of producing those articles are recognized in operating profit/loss.

The amendment to IFRS 9 *Financial Instruments* as part of the *Annual Improvements to IFRSs 2018–2020 Cycle* clarifies which fees paid or received between the entity and the lender an entity includes in the 10 percent test (IFRS 9.B3.3.6) in deciding whether to derecognize a financial liability. If the derecognition test for modified or exchanged financial liabilities results in their extinguishment, any costs or fees incurred are recognized in profit or loss as part of the gain or loss on the extinguishment. If the modification or exchange does not result in their extinguishment, any costs or fees incurred adjust the carrying amount of the liability and the effective interest rate and are amortized over the remaining term of the modified liability, provided they do not constitute compensation for the modification of cash flows from the liability. In the case of the latter, a modification gain or loss must be recognized in profit or loss.

As part of the *Annual Improvements to IFRSs 2018–2020 Cycle*, a passage was deleted in the illustrative examples in IFRS 16 *Leases* concerning the accounting treatment of reimbursement by the lessor of leasehold improvements by the lessee.

All the above amendments and improvements to IFRS must be applied to financial years beginning on or after January 1, 2022.

The amendments and improvements to IFRS listed above did not have a material impact on DZ BANK's consolidated financial statements.

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 IFRS financial reporting standard and the listed amendments to IFRS:

- IFRS 17 *Insurance Contracts*
- Amendments to IFRS 17 *Insurance Contracts*
- Amendments to IAS 1 *Presentation of Financial Statements* and 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 Income Taxes)

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 measurement model (GMM) or using a simplified method, the premium allocation approach (PAA). The general measurement 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 CSM is the unearned profit that the entity will recognize in the future during the coverage period. It is recognized in profit or loss in accordance with an amortization pattern. The FCF is the probability-weighted estimate of expected future cash flows, adjusted for the time value of money and for financial and non-financial risk. All relevant uncertainties arising from financial risk are factored into the estimate of the cash flows. An adjustment for non-financial risk is also made. The confidence level technique is used consistently throughout the Group with a confidence level of 75 percent.

The time value of money is calculated using an entity-specific yield curve determined using the bottom-up approach in a two-step process. Firstly, the liquid risk-free yield curve is determined on the basis of the swap rates (likely to be 6-month Euribor) for observable valid market prices and an extrapolation using a last liquid point and an ultimate forward rate at the longer end of the maturities (Nelson Siegel method). In the second step, the liquid risk-free yield curve is adjusted for an illiquidity premium. The foreign currency curves are determined in the same way as the euro curve for the liquid part of the curve. Extrapolation and the illiquidity premium are derived from the euro curve. For the insurance business of the Assimoco Group, which operates in Italy, additional entity-specific euro yield curves are determined using the bottom-up approach, taking local market conditions into account but otherwise following the concepts used in the context of Solvency II (calculation of regulatory capital). The yield curve of the European Insurance and Occupational Pensions Authority (EIOPA) is predominantly used under Solvency II.

In the GMM, measurement is based on groups of contracts instead of individual contracts. In order to recognize groups of contracts, an entity must identify portfolios of insurance contracts that comprise contracts that are subject to similar risks and managed together. These portfolios are divided into groups of contracts based on profitability and annual cohorts. The annual cohort requirement under IFRS 17.22 as endorsed by the EU is optional; the European Commission permits users in the EU to choose whether to apply the requirement under IFRS 17.22 for certain contracts or not. R+V will make use of this exemption, which primarily means that annual cohorts will not be formed in respect of contracts with direct participation features in life and health insurance business and in respect of the savings component in casualty insurance with premium refund.

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.

Contracts with direct participation features should be accounted for under the variable fee approach (VFA). Initial measurement is the same as under the general measurement model, whereas subsequent measurement takes policyholder participation features into account.

R+V will make use of all measurement models. The main measurement model in non-life insurance will be the PAA. In personal insurance, the VFA will mainly be used, whereas the GMM will be used for credit insurance policies and the PAA for international travel healthcare insurance. Both the GMM and the PAA will be used in inward reinsurance, although the GMM will be the main measurement model used. For casualty insurance with premium refund, R+V will measure the savings component using the VFA, whereas the risk component will be measured using the GMM.

Depending on the available data, R+V is using all transition approaches for the transition to the new standard (fully retrospective approach (FRA), modified retrospective approach (MRA), and the fair value approach (FVA)).

A project was initiated at the level of R+V to implement the requirements of IFRS 17 with effect from January 1, 2023. Based on the opening balance sheet as at January 1, 2022, the change in accounting has had the following effects on R+V's financial position and financial performance:

The insurance items recognized on the balance sheet and in the income statement under IFRS 4, which were largely influenced by HGB and the Regulation on the Accounting of Insurance Undertakings (RechVersV) at R+V, will no longer be reported from January 1, 2023.

The introduction of IFRS 17 will result in new line items in the external reporting for the insurance business, primarily the benefit reserve (liability for remaining coverage, LRC) and the provision for claims outstanding (liability for incurred claims, LIC). New items will also be recognized under equity and liabilities (liabilities arising from insurance contracts) and under assets, e.g. receivables from reinsurers. The new structure will be accompanied by extensive disclosures in the notes, which will provide further information on these line items for the reporting period.

As a result of initial application of IFRS 17, R+V's equity as at January 1, 2022 will be approximately €2.0 billion to €2.5 billion higher before taxes as at January 1, 2022 than under IFRS 4. This can be explained primarily by the measurement of provisions for claims outstanding in the non-life insurance business at fair value, whereas provisions for claims outstanding were previously measured in accordance with the prudence principle pursuant to HGB. The future gains from unrealized valuation reserves for investments in the personal insurance business, which were previously recognized in equity, will, under IFRS 17, be reflected in the CSM as part of the calculation of insurance liabilities.

As a result of the revaluations on the balance sheet, the deferred tax assets and liabilities – which represent the difference between the German tax accounts and the IFRS balance sheet in accordance with IAS 12 – will each see a significant increase of roughly €5 billion to €6 billion. Overall, there is expected to be an excess of deferred tax liabilities.

After taxes, R+V anticipates that the impact on equity as a result of the transition will be in the range of €1.3 billion to €1.5 billion. Of this amount, €250 million to €300 million is likely to be attributable to companies in which R+V does not hold 100 percent of the shares or voting rights (non-controlling interests).

Given the increase in equity, the introduction of IFRS 17 at R+V will also have a positive impact on the Tier 1 capital ratio (CET1) of the DZ BANK Group.

Based on indicative calibration calculations produced in the project, R+V's profitability is likely to be at a comparable level to under IFRS 4. This profitability can also be seen from the CSM of approximately €5 billion to €6 billion resulting from the opening balance sheet.

Under IFRS 17, line items in the income statement and on the equity and liabilities side of the balance sheet must generally be subject to measurement that is consistent with observable market prices and sensitive to interest rates, based on an entity-specific yield curve.

In 2023, the IFRS 17 project will continue as planned at R+V and the operating line units, focusing on subsequent measurement and the implementation of standard processes.

Compared with IFRS 4, it can be assumed that, under IFRS 17, volatility will be higher in the group's profit and loss and there will be fewer accounting mismatches between assets and liabilities. Exercising the OCI option will minimize volatility in the income statement.

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 and IFRS 9 are also applied. The DZ BANK Group has decided against early adoption.

The amendments to IAS 1 *Presentation of Financial Statements* require entities to report their material accounting policies instead of, as previously, their significant accounting policies. The objective of the amendments to IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors* is to provide clarification in order to help entities to distinguish between changes to accounting policies and changes to accounting estimates.

The amendment to IAS 12 *Income Taxes* provides an exemption in certain circumstances that means that no deferred tax assets or liabilities are recognized at the time of acquisition of an asset or liability. This exemption cannot be applied to the recognition of deferred taxes in conjunction with leases or asset retirement/decommissioning obligations.

The amendments to IAS 1, IAS 8, and IAS 12 must be applied for the first time to financial years beginning on or after January 1, 2023. These amendments are not expected to have a material impact on the DZ BANK Group's future 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)
- *Lease Liability in a Sale and Leaseback* (Amendments to IFRS 16 Leases)

The impact of the 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

In accordance with the provisions of IAS 8.41 et seq., consolidation items previously assigned to other assets on the balance sheet are recognized under investments held by insurance companies from the 2022 financial year onward. This retrospective change resulted in the following adjustments to the balance sheet and statement of cash flows:

Balance sheet as at January 1, 2021

ASSETS

€ million	Jan. 1, 2021 before restatement	Amount of restatement	**Jan. 1, 2021 after restatement**
(...)			
Investments held by insurance companies	121,668	-6	121,662
(...)			
Other assets	5,516	6	5,522
(...)			
Total assets	**594,535**	-	**594,535**

Balance sheet as at December 31, 2021

ASSETS

€ million	Dec. 31, 2021 before restatement	Amount of restatement	**Dec. 31, 2021 after restatement**
(...)			
Investments held by insurance companies	129,131	-11	129,119
(...)			
Other assets	6,490	11	6,501
(...)			
Total assets	**627,273**	-	**627,273**

Statement of cash flows for the period January 1 to December 31, 2021

€ million	2021 before restatement	Amount of restatement	2021 after restatement
Net profit	2,176		2,176
Non-cash items included in net profit	2,244		2,244
Subtotal	4,420		4,420
Cash changes in assets and liabilities arising from operating activities			
(…)			
Other assets from operating activities	-2,393	-6	-2,399
(…)			
Cash flows from operating activities	16,648	-6	16,642
(…)			
Payments for the acquisition of investments held by insurance companies	-27,815	6	-27,809
(…)			
Cash flows from investing activities	3,251	6	3,257
Cash flows from financing activities	-2,224		-2,224

€ million	2021 before restatement	Amount of restatement	2021 after restatement
Cash and cash equivalents as at January 1	68,354		68,354
Cash flows from operating activities	16,648	-6	16,642
Cash flows from investing activities	3,251	6	3,257
Cash flows from financing activities	-2,224		-2,224
Cash and cash equivalents as at December 31	86,029		86,029

Furthermore, the aforementioned presentation changes result in related adjustments to the associated disclosures in note 57 (Investments held by insurance companies), note 60 (Other assets), note 74 (Classes, categories, and fair values of financial instruments), note 77 (Assets and liabilities measured at fair value on the balance sheet – specifically the fair value hierarchy disclosures), note 78 (Assets and liabilities not measured at fair value on the balance sheet – specifically the fair value hierarchy disclosures), note 88 (Nature and extent of risks arising from financial instruments and insurance contracts – specifically the disclosures on loss allowances, gross carrying amounts, the maximum exposure to credit risk, and credit risk concentrations), and note 89 (Maturity analysis).

From the 2022 financial year onward, the disclosure – required by IFRS 7.25 – of the fair values of the financial assets and liabilities of the building society is published in note 74 (Classes, categories, and fair values of financial instruments) instead of their carrying amounts. The aim of this change is to provide reliable and more relevant information. There continues to be no suitable process for calculating the fair value of home savings loans, home savings deposits, and similar assets and liabilities in accordance with IFRS 13. As a result, the present value of the collective building society operations, determined using a building society simulation, is disclosed instead. Furthermore, the aforementioned presentation change results in related adjustments to the associated disclosures in note 78 (Assets and liabilities not measured at fair value on the balance sheet).

In order to reflect industry practice, the appropriation of profits is no longer disclosed below the income statement from the 2022 financial year onward. On the balance sheet, unappropriated earnings have been reclassified to retained earnings. In the statement of changes in equity, the line item 'equity earned by the group' has been renamed 'retained earnings'. The presentation changes have been made retrospectively.

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 disclosures on the nature and extent of significant restrictions, the amounts of loans and advances to customers has been restated.

In note 31 (Interests in unconsolidated structured entities), specifically the disclosures on interests in investment funds issued by the DZ BANK Group, interests in investment funds not issued by the DZ BANK Group, and interests in securitization vehicles, the amounts have been restated in the relevant tables showing the calculation of the maximum exposure and in the relevant tables showing the revenue generated from unconsolidated structured entities.

In note 51 (Cash and cash equivalents), the amount of the average target minimum reserve has been restated.

In note 100 (Provisions for defined benefit plans), specifically the information on the present value of defined benefit obligations, the actuarial disclosures have been restated.

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. Building society simulations are used to determine the present value of the collective building society operations. 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.

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 reporting period. 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.

The war in Ukraine

The war in Ukraine 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 consequences of the war in Ukraine particularly affect the familiar assumptions and estimates used to calculate loss allowances, provisions, and insurance liabilities. The lending volume impacted by the war in Ukraine, and the related collateralization, is presented in section 9.8.1 of the risk report.

» 03 Scope of consolidation

In addition to DZ BANK as the parent, the consolidated financial statements for the year ended December 31, 2022 include 17 subsidiaries (2021: 17) and 5 subgroups (2021: 6) comprising a total of 90 subsidiaries (2021: 128).

The main changes to the scope of consolidation in 2022 were the merger of DVB Bank SE into DZ BANK AG, the sale of subsidiaries, and the deconsolidation of subsidiaries of the DVB subgroup that were no longer material. The scope of consolidation also changed due to the addition of 3 subsidiaries in the R+V subgroup.

The consolidated financial statements include 5 joint arrangements in the form of joint ventures with at least one other entity outside the group (2021: 5) and 25 associates (2021: 24) 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 108.

» 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, 2022. With 18 (2021: 18) 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.

Where an entity is controlled without there being an investment in the equity of the controlled entity, the subsidiary’s entire equity is recognized as non-controlling interests under equity. If the subsidiary’s equity does not qualify as equity pursuant to IAS 32, it is recognized under liabilities.

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 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.

In the subcategory 'financial assets mandatorily measured at fair value through profit or loss', all changes in fair value are recognized in profit or loss.

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.

In the subcategory 'contingent considerations in a business combination', all changes in fair value are recognized in profit or loss.

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.

In the subcategory 'financial assets designated as at fair value through profit or loss', all changes in fair value are recognized in profit or loss.

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. Any differences between the amortized cost and the fair value that do not result from impairment losses or currency translation 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 (using the effective interest method), loss allowances, and currency translation effects are 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.

In the subcategory 'financial liabilities mandatorily measured at fair value through profit or loss', all changes in fair value are recognized in profit or loss.

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.

In the subcategory 'contingent considerations in a business combination', all changes in fair value are recognized in profit or loss.

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'. Interest income (using the effective interest method) and currency

translation effects are recognized in profit or loss. The following are not included in this category: 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 considerations 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 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 categorization of the financial assets and financial liabilities.

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. Derivatives and 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’
- 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
- 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, which would require their assignment to stage 3. 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 – for example, 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, 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)
- '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 basis in accordance with IFRS 9 or on a portfolio basis in accordance with IAS 39.

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 material insurance 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 until IFRS 17 comes into effect. 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.

Calculation of the benefit reserve for policies is generally based on the Zillmer method. In new business in the period 2015 to 2020, zillmerizing was mostly not applied to individual insurances policies.

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 further reduced for observation units with a premium adjustment effective January 1, 2022. 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 in the insurance business 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 (banks and customers) 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 categories 'financial assets measured at fair value through profit or loss' and 'financial liabilities 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 financial assets and financial liabilities that are held for trading purposes.

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 non-material subsidiaries and investments in 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 other assets held by insurance companies, 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 (banks and customers) 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 expected changes in the inflation rate. The 2018 G mortality tables published by Professor Dr. Klaus Heubeck are used to estimate average life expectancy in Germany; outside Germany, the relevant country-specific mortality tables are used. 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.

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. Where payment transactions are linked to targets relating to a multi-year, retrospective performance period, the provision is recognized on the basis of the underlying performance period. 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 103 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, such as 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, or 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, management estimates, 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 that cover the possible resulting losses are recognized for risks arising from ongoing legal disputes and for pre-litigation risks. 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, 2022	Dec. 31, 2021
Bausparkasse Schwäbisch Hall subgroup	169	204
DZ PRIVATBANK	71	66
R+V Versicherung subgroup	615	1,304
Union Asset Management Holding subgroup	97	90
Other	157	137
Total	**1,109**	**1,801**

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, 2021: 97.6 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, 2021: 2.4 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 €9 million (2021: €10 million). This included the net income for the year attributable to non-controlling interests in the BSH subgroup of €6 million (2021: €7 million). The carrying amount of the non-controlling interests in the DZ BANK Group was €169 million (December 31, 2021: €204 million). Of this amount, €82 million was attributable to non-controlling interests within the BSH subgroup (December 31, 2021: €81 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. Guaranteed dividends of €1 million were paid to outside shareholders of BSH in 2022 (2021: €1 million).

Aggregated financial information for the BSH subgroup:

€ million	Dec. 31, 2022	Dec. 31, 2021
Assets	85,599	85,371
Liabilities	81,384	79,653

€ million	2022	2021
Interest income and fee and commission income	1,440	1,530
Net profit	75	78
Other comprehensive income/loss	-1,583	-425
Total comprehensive income/loss	-1,507	-347
Cash flow	-918	455

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, (DZ PRIVATBANK Schweiz), 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, 2021: 91.8 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 €5 million (2021: €2 million). The carrying amount of the non-controlling interests was €71 million (December 31, 2021: €66 million). The dividend distributed to the non-controlling interests came to €1 million in 2022 (2021: €1 million).

Aggregated financial information for DZ PRIVATBANK:

€ million	Dec. 31, 2022	Dec. 31, 2021
Assets	25,447	21,611
Liabilities	24,273	20,718

€ million	2022	2021
Interest income and fee and commission income	718	609
Net profit	31	32
Other comprehensive income	11	17
Total comprehensive income	42	49
Cash flow	2,392	4,038

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 92.3 percent of the shares in R+V (December 31, 2021: 92.2 percent). The share of voting rights is equal to the shareholding. Non-controlling interests account for 7.7 percent of the voting rights and shares (December 31, 2021: 7.8 percent). Within this figure, local cooperative banks hold 6.0 percent (December 31, 2021: 6.0 percent). The other 1.7 percent (December 31, 2021: 1.8 percent) is held by other entities in the cooperative sector.

The net loss for the year attributable to the non-controlling interests was €15 million (2021: net income of €106 million). This included the net income for the year attributable to non-controlling interests in the R+V subgroup of €0 million (2021: €66 million). The carrying amount of the non-controlling interests in the DZ BANK Group was €615 million (December 31, 2021: €1,304 million). Of this amount, €355 million was attributable to non-controlling interests within the R+V subgroup (December 31, 2021: €673 million). DZ BANK entered into a profit-transfer agreement with R+V in 2022. This guarantees an annual cash settlement of €7.32 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of R+V until the end of the 2026 financial year. After the end of the agreement, it can be extended by one year at a time until 2031. Until the end of the 2021 financial year, there was a profit transfer agreement that guaranteed 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. Guaranteed dividends of €8 million were paid to outside shareholders of R+V in 2022 (2021: €7 million). In the R+V subgroup, dividends of €28 million were paid to non-controlling interests (2021: €8 million).

Aggregated financial information for the R+V subgroup:

€ million	Dec. 31, 2022	Dec. 31, 2021
Assets	116,900	137,390
Liabilities	112,884	128,571

€ million	2022	2021
Premiums earned	18,397	18,994
Net profit/loss	-300	497
Other comprehensive income/loss	-4,726	-143
Total comprehensive income/loss	-5,026	354

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, 2021: 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, 2021: 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, 2021: 95.8 percent).

The carrying amount of the non-controlling interests within the DZ BANK Group was €97 million (December 31, 2021: €90 million) and related to the multiplicative share of the capital of UMH. Of this amount, €33 million was attributable to non-controlling interests within the UMH subgroup (December 31, 2021: €34 million). The net income for the year attributable to the non-controlling interests was €23 million (2021: €41 million). This included the net income for the year attributable to non-controlling interests in the UMH subgroup of €8 million (2021: €10 million). The dividend distributed to the non-controlling interests totaled €18 million in 2022 (2021: €13 million). €9 million of this amount was paid as dividends to non-controlling interests in the UMH subgroup (2021: €7 million).

Aggregated financial information for the UMH subgroup:

€ million	Dec. 31, 2022	Dec. 31, 2021
Assets	4,818	4,665
Liabilities	2,171	2,181

€ million	2022	2021
Interest income and fee and commission income	3,506	3,809
Net profit	492	859
Other comprehensive income	33	26
Total comprehensive income	525	884

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 of the German Banking Act (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 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, and the bonds issued by DZ BANK Perpetual Funding Issuer (Jersey) Limited, St. Helier, Jersey, were called on January 12, 2021 and repaid in full in 2021.

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	2022	2021
DZ BANK Capital Funding Trust I	-	3
DZ BANK Capital Funding Trust II	-	1
DZ BANK Capital Funding Trust III	-	1

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

€ million	2022	2021
Interest income and fee and commission income	-	6
Net profit	-	6
Total comprehensive income	-	6

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, 2022	Dec. 31, 2021
Assets	**107,222**	**105,960**
Loans and advances to banks	523	1,870
Loans and advances to customers	3,297	2,668
Investments	1,614	1,882
Investments held by insurance companies	101,324	99,074
Other assets	464	467
Liabilities	**165,000**	**162,897**
Deposits from banks	1,962	1,755
Deposits from customers	66,318	66,222
Provisions	1,053	1,398
Insurance liabilities	95,667	93,522

Nature of the risks associated with interests in consolidated structured entities

In 2021, risks arising from interests in consolidated structured entities largely resulted from loans to fully consolidated funds, some of which were 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, 2021. 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 2022 (2021: no dividend).

Aggregated financial information for PSS:

€ million	Dec. 31, 2022	Dec. 31, 2021
Current assets	609	549
of which cash and cash equivalents	5	22
Non-current assets	2,378	2,399
Current liabilities	761	652
of which financial liabilities	746	637
Non-current liabilities	1,935	2,011
of which financial liabilities	1,909	1,985

€ million	2022	2021
Interest income	87	92
Interest expense	-24	-28
Fee and commission income	12	12
Fee and commission expenses	-1	-1
Administrative expenses	-42	-40
Income taxes	-5	-5
Profit from continuing operations, net of tax	7	17
Other comprehensive income	1	-
Total comprehensive income	7	17

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Total net assets	**291**	**284**
Share of net assets	**95**	**92**
Cumulative impairment losses on the carrying amount of the investment	-35	-20
Carrying amount under the equity method	**60**	**72**

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, 2021. In the DZ BANK Group, the interests in SGB are accounted for using the equity method. SGB did not pay a dividend in 2022, as had also been the case in the previous year.

Aggregated financial information for SGB:

€ million	Dec. 31, 2022	Dec. 31, 2021
Current assets	1,562	1,596
of which cash and cash equivalents	412	574
Non-current assets	3,107	2,747
Current liabilities	3,025	2,986
of which financial liabilities	2,815	2,775
Non-current liabilities	1,239	954
of which financial liabilities	1,239	954

€ million	2022	2021
Interest income	153	137
Interest expense	-83	-67
Fee and commission income	7	8
Fee and commission expenses	-13	-17
Administrative expenses	-43	-43
Income taxes	-2	-4
Profit from continuing operations, net of tax	10	13
Other comprehensive income/loss	-10	42
Total comprehensive income	-	55

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Total net assets	**404**	404
Share of net assets	**101**	101
Cumulative impairment losses on the carrying amount of the investment	-75	-59
Carrying amount under the equity method	**25**	42

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, 2021. 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. In 2022, dwpbank paid a dividend of €6 million to DZ BANK (2021: no dividend).

Aggregated financial information for dwpbank:

€ million	Dec. 31, 2022	Dec. 31, 2021
Assets	830	682
Liabilities	545	392
of which financial liabilities	338	186

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

€ million	2022	2021
Interest income	4	3
Interest expense	-4	-3
Fee and commission income	421	416
Fee and commission expenses	-101	-101
Administrative expenses	-265	-252
Income taxes	-	-28
Profit from continuing operations, net of tax	8	20
Total comprehensive income	8	20

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Total net assets	**285**	290
Share of net assets	**143**	145
Capitalization of goodwill	29	29
Carrying amount under the equity method	**172**	174

Other joint ventures

The carrying amount of the equity-accounted joint ventures that, individually, are not material totaled €60 million on the balance sheet date (December 31, 2021: €61 million).

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

€ million	2022	2021
Share of profit from continuing operations, net of tax	2	4
Share of total comprehensive income	2	4

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 €131 million on the balance sheet date (December 31, 2021: €72 million).

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

€ million	2022	2021
Share of profit/loss from continuing operations, net of tax	6	-3
Share of total comprehensive income/loss	6	-3

» 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, 2022		Dec. 31, 2021	
€ million	Volume	Number	Volume	Number
Mutual funds	213,006	332	238,934	339
of which guarantee funds	307	8	361	9
Special funds	140,438	524	144,554	494
Total	**353,444**	**856**	**383,488**	**833**

Furthermore, DVB Bank SE, Frankfurt am Main, (DVB) made junior loans available to fully consolidated funds for the purpose of transport finance. In turn, these funds made junior loans or direct equity investments available to unconsolidated entities. The remaining volume of junior loans at the end of 2022 was immaterial owing to the scaling back and sale of business ahead of DVB's merger into DZ BANK AG, the resulting deconsolidation of DVB's subsidiaries, and the sharp contraction of business in the remaining structured 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, 2022

€ million	Mutual funds	of which guarantee funds	Special funds	Total
Assets	1,780	-	645	2,426
Loans and advances to customers	4	-	15	19
Investments	1,423	-	14	1,437
Investments held by insurance companies	27	-	601	629
Property, plant and equipment, investment property, and right-of-use assets	121	-	-	121
Other assets	186	-	15	201
Non-current assets and disposal groups classified as held for sale	19	-	-	19
Liabilities	139	13	-	139
Financial liabilities held for trading	13	13	-	13
Other liabilities	126	-	-	126
Net exposure recognized on the balance sheet	1,641	-13	645	2,286
Financial guarantee contracts, loan commitments and other obligations	318	318	-	318
Other obligations	318	318	-	318
Actual maximum exposure	1,960	305	645	2,605

AS AT DECEMBER 31, 2021

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Assets	**2,320**	**-**	**854**	**3,174**
Loans and advances to customers	4	-	11	14
Investments	2,019	-	7	2,026
Investments held by insurance companies	33	-	801	835
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	2,247	-11	854	3,100
Financial guarantee contracts, loan commitments and other obligations	**352**	**352**	**-**	**352**
Other obligations	352	352	-	352
Actual maximum exposure	**2,598**	**340**	**854**	**3,452**

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 €331 million (December 31, 2021: €363 million), less negative fair values of €13 million (December 31, 2021: €11 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 €307 million on the balance sheet date (December 31, 2021: €361 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.

In addition, there were investment funds issued by the group in connection with unit-linked life insurance amounting to €4,149 million (December 31, 2021: €5,053 million) that, however, do not result in a maximum exposure.

The interests in investment funds issued and managed by the DZ BANK Group resulted in losses of €98 million in 2022 (2021: losses of €24 million). Distributions in 2022 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:

2022

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Interest income and current income and expense	5	-	1	5
Fee and commission income	2,929	1	259	3,189
Gains and losses on investments	-62	-	-	-62
Other gains and losses on valuation of financial instruments	-31	-3	1	-30
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-6	-	-160	-166
Total	**2,835**	**-1**	**102**	**2,936**

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	5	-	-27	**-22**
Other operating income	-	-	14	**14**
Total	**3,247**	**2**	**237**	**3,485**

No income was generated in 2022 that impacted on other comprehensive income (2021: €5 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 €38,500 million (December 31, 2021: €44,013 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 €12,043 million (December 31, 2021: €12,778 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, 2022**	Dec. 31, 2021
Assets	**9,413**	**10,057**
Loans and advances to customers	7,383	7,358
Investments held by insurance companies	2,030	2,699
Net exposure recognized on the balance sheet	9,413	10,057
Financial guarantee contracts, loan commitments and other obligations	**259**	**488**
Financial guarantee contracts	37	37
Loan commitments	223	451
Maximum exposure	**9,672**	**10,545**

The interests in investment funds not issued by the DZ BANK Group resulted in losses of €8 million in 2022 (2021: €0 million).

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

€ million	2022	2021
Interest income and current income	118	110
Fee and commission income	76	85
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-395	356
Total	**-202**	**551**

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, 2022	Dec. 31, 2021
Assets	**4,195**	**2,849**
Loans and advances to customers	2,299	1,208
Financial assets held for trading	158	23
Investments	111	85
Investments held by insurance companies	1,626	1,533
Liabilities	**50**	**16**
Deposits from customers	-	5
Financial liabilities held for trading	48	8
Provisions	2	4
Net exposure recognized on the balance sheet	4,145	2,833
Financial guarantee contracts, loan commitments and other obligations	**3,468**	**3,609**
Financial guarantee contracts	-	20
Loan commitments	3,468	3,590
Maximum exposure	**7,613**	**6,442**

In 2022, interests in securitization vehicles resulted in losses of €68 million that were recognized in other comprehensive income (2021: losses of €2 million).

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

€ million	2022	2021
Interest income	20	5
Fee and commission income	72	62
Gains and losses on trading activities	-47	-7
Gains and losses on investments	1	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	16	16
Total	**62**	**76**

The material interests in securitization vehicles comprise the two multi-seller asset-backed commercial paper (ABCP) programs CORAL and AUTOBAHN as well as the asset-backed security (ABS) paper of R+V.

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 2022, 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.

The current carrying amount of the ABS paper held by R+V represents the maximum downside 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. There were no sponsoring arrangements for unconsolidated structured entities in either 2022 or 2021.

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

» 33 Segment information

Information on operating segments

2022

€ million	BSH	R+V	TeamBank	UMH
Net interest income	744	-	511	12
Net fee and commission income	11	-	-13	2,036
Gains and losses on trading activities	-	-	-	-
Gains and losses on investments	-90	-	-	-58
Other gains and losses on valuation of financial instruments	4	-	6	-155
Gains and losses from the derecognition of financial assets measured at amortized cost	3	-	-	-
Premiums earned	-	18,397	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-3,368	-	-
Insurance benefit payments	-	-12,127	-	-
Insurance business operating expenses	-	-3,173	-	-
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	-	8	-	-
Loss allowances	-16	-	-100	-
Administrative expenses	-528	-	-286	-1,194
Other net operating income	16	-5	15	54
Profit/loss before taxes	**143**	**-268**	**134**	**695**
Cost/income ratio (%)	76.7	-	55.1	63.2
Regulatory RORAC (%)	11.2	-2.9	22.8	>100.0
Average own funds/solvency requirement	1,274	9,184	585	565
Total assets/total equity and liabilities as at Dec. 31, 2022	85,599	116,900	10,611	4,818

	DZ BANK – CICB	DZ HYP	DZ PRIVATBANK	VR Smart Finanz	DZ BANK – holding function	Other/ Consolidation	**Total**
	1,113	732	83	116	-51	62	3,322
	489	18	220	-29	-	17	2,749
	871	-1	21	-	-	-68	823
	-13	31	-	-	-	11	-119
	-91	-14	4	1	-	-41	-286
	32	-	-1	-	-	1	35
	-	-	-	-	-	-	18,397
	-	-	-	-	-	-21	-3,389
	-	-	-	-	-	-	-12,127
	-	-	-	-	-	105	-3,068
	-	-	-	-	-	-	8
	-172	-78	-2	-9	-	73	-304
	-1,350	-256	-277	-76	-228	-252	-4,447
	26	24	4	-	-	70	204
	904	**455**	**52**	**3**	**-279**	**-42**	**1,797**
	55.6	32.4	83.7	86.4	-	-	67.9
	15.2	33.6	14.1	1.8	-	-	9.3
	5,935	1,357	367	163	-	-	19,431
	367,462	89,181	25,447	3,367	21,557	-97,901	627,041

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	DZ BANK – holding function	Other/ Consolidation	**Total**
	1,026	721	59	125	-32	-204	**2,785**
	471	18	212	-30	-	-40	**2,935**
	67	-6	21	-	-	70	**152**
	75	42	-	-	-	104	**245**
	58	63	-3	-	-	83	**242**
	29	-	-	-	-	-31	**-**
	-	-	-	-	-	-	**18,994**
	-	-	-	-	-	-29	**5,251**
	-	-	-	-	-	-	**-20,356**
	-	-	-	-	-	136	**-3,047**
	-	-	-	-	-	-	**-**
	89	-24	-	-14	-	140	**120**
	-1,292	-247	-251	-80	-208	-265	**-4,265**
	-58	21	4	-9	-	-1	**41**
	465	**588**	**41**	**-9**	**-240**	**-35**	**3,096**
	77.5	28.8	85.7	93.0	-	-	**58.9**
	8.6	41.6	12.1	-5.2	-	-	**15.7**
	5,379	1,412	341	181	-	-	**19,716**
	335,254	91,362	21,611	3,352	19,675	-81,429	**627,273**

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, 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. As part of the merger of DVB Bank into DZ BANK, changes were made to the internal reporting in 2022. DVB no longer constitutes a separate management unit and is therefore included under ‘Other/Consolidation’. The prior-year figures have been restated accordingly.

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	2022	2021
Germany	5,665	6,394
Rest of Europe	893	837
Rest of World	178	192
Consolidation/reconciliation	-188	-182
Total	**6,548**	**7,241**

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	2022	2021
INTEREST INCOME AND CURRENT INCOME AND EXPENSE	**5,974**	**4,236**
Interest income from	**5,919**	**4,174**
Lending and money market business	5,726	4,523
of which relating to mortgage loans	972	950
of which relating to money market business	628	7
of which relating to home savings loans advanced by building society	1,007	1,064
of which relating to pass-through loans	518	565
of which relating to registered securities	283	254
of which relating to finance leases	23	33
Bonds and other fixed-income securities	485	341
Portfolio hedges of interest-rate risk	-77	-381
Financial assets with a negative effective interest rate	-215	-308
Other assets	1	-1
Current income and expense from	**55**	**62**
Shares and other variable-yield securities	24	26
of which income from other shareholdings	18	16
Investments in subsidiaries	8	8
Investments in associates	-	1
Entities accounted for using the equity method	17	19
of which relating to investments in joint ventures	10	28
of which relating to investments in associates	6	-9
Income from profit-pooling, profit-transfer and partial profit-transfer agreements	6	7
INTEREST EXPENSE ON	**-2,652**	**-1,451**
Deposits from banks and customers	-2,528	-1,934
of which relating to home savings deposits	-511	-846
Debt certificates issued including bonds	-494	-209
Subordinated capital	-93	-71
Portfolio hedges of interest-rate risk	-19	50
Financial liabilities with a positive effective interest rate	483	717
Provisions and other liabilities	-2	-5
Total	**3,322**	**2,785**

The interest income from other assets included gains from non-credit-risk-related modifications of €1 million (2021: €3 million) and losses from non-credit-risk-related modifications of €0 million (2021: €4 million), such gains and losses resulting from financial assets. The interest expense on provisions and other liabilities included interest expense on lease liabilities of €5 million (2021: €3 million).

» 35 Net fee and commission income

€ million	2022	2021
Fee and commission income	**5,262**	**5,521**
Securities business	4,089	4,410
Asset management	344	394
Payments processing including card processing	332	295
Lending business and trust activities	162	128
Financial guarantee contracts and loan commitments	72	67
International business	13	12
Building society operations	45	43
Other	206	171
Fee and commission expenses	**-2,513**	**-2,586**
Securities business	-1,764	-1,798
Asset management	-216	-280
Payments processing including card processing	-183	-144
Lending business	-77	-74
Financial guarantee contracts and loan commitments	-12	-10
Building society operations	-68	-66
Other	-193	-212
Total	**2,749**	**2,935**

Fee and commission income included revenue from contracts with customers pursuant to IFRS 15 in an amount of €5,247 million (2021: €5,512 million); see note 96.

» 36 Gains and losses on trading activities

€ million	2022	2021
Gains and losses on non-derivative financial instruments and embedded derivatives	**4,473**	**-298**
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	3,064	326
Gains and losses on derivatives	**-3,794**	**310**
Gains and losses on exchange differences	**144**	**141**
Total	**823**	**152**

Gains and losses on exchange differences included currency translation losses of €40 million on financial instruments not measured at fair value through profit or loss (2021: gains of €44 million).

» 37 Gains and losses on investments

€ million	2022	2021
Gains and losses on the disposal of bonds and other fixed-income securities	**-41**	**139**
Gains and losses on the disposal of shares and other variable-yield securities	**-62**	**2**
Gains and losses on investments in joint ventures	**-31**	**-5**
Impairment losses	-31	-9
Reversals of impairment losses	-	4
Gains and losses on investments in associates	**15**	**109**
Disposals	11	128
Impairment losses	-4	-20
Reversals of impairment losses	8	-
Total	**-119**	**245**

» 38 Other gains and losses on valuation of financial instruments

€ million	2022	2021
Gains and losses from fair value hedge accounting	**-45**	**20**
Gains and losses on derivatives used for purposes other than trading	**-6**	**58**
Gains and losses on financial instruments designated as at fair value through profit or loss	**-160**	**111**
Gains and losses on non-derivative financial instruments and embedded derivatives that are not related to derivatives held for trading purposes	349	136
Gains and losses on derivatives	-509	-25
Gains and losses on financial assets mandatorily measured at fair value through profit or loss	**-75**	**52**
Total	**-286**	**242**

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 financial assets measured at amortized cost

€ million	2022	2021
Gains from the derecognition of financial assets measured at amortized cost	**56**	**16**
Loans and advances to banks and customers	10	4
Investments	2	11
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	44	1
Losses on derecognition of financial assets measured at amortized cost	**-22**	**-16**
Loans and advances to banks and customers	-8	-2
Investments	-13	-2
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-1	-12
Total	**35**	**-**

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	2022	2021
Net premiums written	**18,415**	**18,982**
Gross premiums written	18,667	19,184
Reinsurance premiums ceded	-253	-202
Change in provision for unearned premiums	**-18**	**11**
Gross premiums	-19	21
Reinsurers' share	2	-10
Total	**18,397**	**18,994**

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

€ million	2022	2021
Income from investments held by insurance companies	**6,692**	**8,471**
Interest income and current income	2,407	2,266
Income from reversals of impairment losses and reversals of loss allowances, and unrealized gains	1,402	1,133
Gains on valuation through profit or loss of investments held by insurance companies	1,864	4,389
Gains on disposals	1,019	683
Expenses in connection with investments held by insurance companies	**-10,336**	**-3,035**
Administrative expenses	-220	-203
Depreciation/amortization expense, additions to loss allowances, and impairment losses and unrealized losses	-1,104	-448
Losses on valuation through profit or loss of investments held by insurance companies	-7,139	-1,768
Losses on disposals	-1,873	-617
Other gains and losses of insurance companies	**256**	**-184**
Other insurance gains and losses	251	355
Other non-insurance gains and losses	5	-539
Total	**-3,389**	**5,251**

Other non-insurance gains and losses included interest expenses on lease liabilities amounting to €1 million (2021: €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 gains of €8 million on financial instruments not measured at fair value through profit or loss (2021: losses of €206 million).

Income from and expenses in connection with investments held by insurance companies included additions to loss allowances of €67 million (2021: €69 million) and reversals of loss allowances of €57 million (2021: €77 million).

» 42 Insurance benefit payments

€ million	2022	2021
EXPENSES FOR CLAIMS	**-12,866**	**-12,412**
Payments for claims	**-12,085**	**-11,481**
Gross payments for claims	-12,479	-11,679
Reinsurers' share	394	198
Change in the provision for claims outstanding	**-781**	**-931**
Gross change in the provision for claims outstanding	-469	-1,576
Reinsurers' share	-312	645
CHANGE IN THE BENEFIT RESERVE AND IN OTHER INSURANCE LIABILITIES	**-531**	**-7,291**
Change in the benefit reserve	**-514**	**-7,282**
Gross change in the benefit reserve	-527	-7,290
Reinsurers' share	13	8
Change in other insurance liabilities	**-17**	**-9**
INCOME FROM/EXPENSES FOR PREMIUM REFUNDS	**1,269**	**-653**
Gross expenses for premium refunds	-1,003	-588
Expenses for deferred premium refunds	2,272	-64
Total	**-12,127**	**-20,356**

The net reinsurance expense amounted to €128 million (2021: net income of €670 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	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
At the end of the year	5,424	5,782	4,845	4,716	4,551	4,276	4,173	3,856	3,634	3,901	3,345
1 year later		5,665	4,507	4,606	4,471	4,142	4,103	3,767	3,523	3,847	3,336
2 years later			4,351	4,519	4,405	4,067	4,046	3,682	3,457	3,769	3,247
3 years later				4,495	4,409	4,021	4,020	3,647	3,389	3,731	3,220
4 years later					4,373	4,017	3,980	3,625	3,382	3,696	3,189
5 years later						4,013	3,980	3,624	3,389	3,691	3,198
6 years later							3,880	3,549	3,329	3,626	3,126
7 years later								3,509	3,310	3,616	3,118
8 years later									3,283	3,603	3,108
9 years later										3,578	3,098
10 years later											3,086
Settlements	-	**117**	**494**	**221**	**178**	**263**	**293**	**347**	**351**	**323**	**259**

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

€ million	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
At the end of the year	5,401	5,750	4,787	4,702	4,518	4,255	4,110	3,827	3,574	3,669	3,313
1 year later		5,635	4,455	4,589	4,438	4,118	4,050	3,736	3,460	3,613	3,300
2 years later			4,297	4,502	4,373	4,044	3,994	3,655	3,393	3,533	3,211
3 years later				4,477	4,376	3,999	3,965	3,624	3,331	3,490	3,180
4 years later					4,340	3,995	3,928	3,601	3,361	3,465	3,139
5 years later						3,992	3,929	3,602	3,369	3,670	3,166
6 years later							3,828	3,526	3,309	3,605	3,095
7 years later								3,487	3,290	3,594	3,087
8 years later									3,263	3,581	3,076
9 years later										3,556	3,066
10 years later											3,055
Settlements	-	**115**	**490**	**225**	**178**	**263**	**282**	**340**	**311**	**113**	**258**

Claims rate trend for inward reinsurance business

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

€ million	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Gross provisions for claims outstanding	**5,784**	**5,704**	**5,009**	**4,411**	**3,642**	**3,197**	**2,718**	**2,433**	**1,976**	**1,710**	**1,506**
Cumulative payments for the year concerned and prior years											
1 year later		1,394	1,240	1,082	955	852	569	622	464	481	385
2 years later			1,890	1,627	1,396	1,237	852	867	783	685	630
3 years later				1,993	1,674	1,482	1,062	1,022	919	897	764
4 years later					1,927	1,660	1,189	1,154	1,026	987	930
5 years later						1,838	1,294	1,249	1,117	1,051	996
6 years later							1,405	1,315	1,171	1,114	1,035
7 years later								1,378	1,214	1,155	1,085
8 years later									1,257	1,185	1,117
9 years later										1,214	1,139
10 years later											1,163
Gross provisions for claims outstanding and payments made against the original provision											
At the end of the year	**5,784**	5,704	5,009	4,411	3,642	3,197	2,718	2,433	1,976	1,710	1,506
1 year later		5,818	5,373	4,313	3,951	3,392	2,654	2,434	2,157	1,840	1,593
2 years later			5,148	4,373	3,651	3,315	2,561	2,271	2,004	1,859	1,569
3 years later				4,337	3,733	3,131	2,486	2,224	1,915	1,779	1,628
4 years later					3,714	3,166	2,361	2,179	1,887	1,720	1,580
5 years later						3,159	2,363	2,088	1,848	1,699	1,550
6 years later							2,355	2,096	1,779	1,677	1,536
7 years later								2,087	1,794	1,627	1,526
8 years later									1,800	1,636	1,490
9 years later										1,639	1,499
10 years later											1,500
Settlements	**-**	**-114**	**-139**	**74**	**-72**	**38**	**363**	**346**	**176**	**71**	**6**

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

€ million	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Net provisions for claims outstanding	**5,663**	**5,587**	**5,001**	**4,408**	**3,639**	**3,193**	**2,710**	**2,428**	**1,970**	**1,695**	**1,491**
Cumulative payments for the year concerned and prior years											
1 year later		1,389	1,235	1,082	955	851	567	622	464	473	383
2 years later			1,884	1,626	1,396	1,236	849	866	782	677	620
3 years later				1,992	1,674	1,480	1,058	1,020	918	888	754
4 years later					1,926	1,658	1,186	1,153	1,025	978	919
5 years later						1,836	1,290	1,247	1,115	1,042	985
6 years later							1,401	1,313	1,170	1,105	1,024
7 years later								1,376	1,212	1,146	1,074
8 years later									1,255	1,175	1,105
9 years later										1,204	1,128
10 years later											1,151
Net provisions for claims outstanding and payments made against the original provision											
At the end of the year	5,663	5,587	5,001	4,408	3,639	3,193	2,710	2,428	1,970	1,695	1,491
1 year later		5,698	5,365	4,310	3,950	3,388	2,648	2,429	2,152	1,827	1,576
2 years later			5,141	4,370	3,649	3,312	2,555	2,267	1,999	1,845	1,554
3 years later				4,335	3,732	3,129	2,482	2,219	1,911	1,766	1,612
4 years later					3,713	3,163	2,356	2,176	1,883	1,708	1,566
5 years later						3,157	2,358	2,086	1,845	1,687	1,536
6 years later							2,351	2,093	1,777	1,666	1,522
7 years later								2,084	1,791	1,616	1,513
8 years later									1,797	1,625	1,477
9 years later										1,628	1,486
10 years later											1,487
Settlements	**-**	**-111**	**-140**	**73**	**-74**	**36**	**359**	**344**	**173**	**67**	**4**

» 43 Insurance business operating expenses

€ million	2022	2021
Gross expenses	-3,096	-3,079
Reinsurers' share	28	32
Total	**-3,068**	**-3,047**

» 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 €11 million (2021: €2 million) and losses of €3 million (2021: €2 million).

» 45 Loss allowances

€ million	2022	2021
Loss allowances for loans and advances to banks	**-30**	**22**
Additions	-93	-32
Reversals	61	31
Recoveries on loans and advances to banks previously impaired	1	23
Loss allowances for loans and advances to customers	**-236**	**71**
Additions	-2,223	-2,110
Reversals	1,905	2,087
Directly recognized impairment losses	-29	-38
Recoveries on loans and advances to customers previously impaired	78	83
Other	34	49
Loss allowances for investments	**4**	**25**
Additions	-13	-26
Reversals	17	50
Loss allowances for other assets	**-1**	**1**
Directly recognized impairment losses	-1	-
Recoveries on other assets previously impaired	-	1
Other loss allowances for loans and advances	**-42**	**1**
Additions to and reversals of provisions for loan commitments	-20	-18
Additions to and reversals of provisions for financial guarantee contracts	-9	19
Additions to and reversals of other provisions for loans and advances	-13	-
Total	**-304**	**120**

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.

» 46 Administrative expenses

€ million	2022	2021
Staff expenses	**-2,072**	**-2,021**
Wages and salaries	-1,726	-1,692
Social security contributions	-228	-217
Pension and other post-employment benefit expenses	-107	-101
Expenses for share-based payment transactions	-11	-10
General and administrative expenses	**-2,082**	**-1,941**
Expenses for temporary staff	-26	-24
Contributions and fees	-315	-288
of which contributions to the resolution fund for CRR credit institutions	-151	-134
Consultancy	-494	-439
Office expenses	-156	-163
IT expenses	-577	-552
Property and occupancy costs	-116	-103
Information procurement	-100	-88
Public relations and marketing	-173	-165
Other general and administrative expenses	-121	-115
Expenses for administrative bodies	-4	-5
Depreciation and amortization	**-292**	**-303**
Property, plant and equipment, and investment property	-84	-86
Right-of-use assets	-86	-84
Other assets	-122	-134
Total	**-4,447**	**-4,265**

» 47 Other net operating income

€ million	2022	2021
Income from the reversal of provisions and accruals	157	86
Gains and losses on non-current assets and disposal groups classified as held for sale	49	70
Gains on the disposal of other assets	43	37
Expenses for other taxes	-23	-20
Restructuring expenses	-5	-78
Impairment losses on goodwill	-	-2
Residual other net operating income	-16	-51
Total	**204**	**42**

Gains and losses on non-current assets and disposal groups classified as held for sale included realized gains of €51 million on disposals (2021: €83 million) and impairment losses of €2 million (2021: €14 million).

Restructuring expenses included additions of €3 million to provisions for termination benefits linked with restructuring (2021: €36 million).

Residual other net operating income included rental income from investment property of €13 million (2021: €10 million) and directly assignable expenses of €4 million for the management of investment property (2021: €3 million).

» 48 Income taxes

€ million	2022	2021
Current tax expense	-908	-894
Deferred tax income/expense	184	-26
Total	**-724**	**-920**

The total for current taxes includes expenses of €49 million (2021: income of €2 million) attributable to previous years. Deferred taxes include income of €110 million (2021: expenses of €29 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 2022 was unchanged from the rate used in 2021. 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	2022	2021
Profit before taxes	**1,797**	**3,096**
Group income tax rate	31.260%	31.260%
Expected income taxes	**-562**	**-968**
Income tax effects	**-162**	**48**
Impact of tax-exempt income and non-deductible expenses	-120	4
Adjustments resulting from other types of income tax, other trade tax multipliers, and changes in tax rates	24	11
Tax rate differences on income subject to taxation in other countries	25	13
Current and deferred taxes relating to prior years	-21	-6
Change in impairment losses on deferred tax assets	21	42
Other effects	-91	-17
Recognized income taxes	**-724**	**-920**

» 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	2022	2021
Gains and losses on debt instruments measured at fair value through other comprehensive income	**-8,978**	**-1,389**
Gains (+)/losses (-) arising during the reporting period	-9,203	-1,175
Gains (-)/losses (+) reclassified to the income statement during the reporting period	225	-213
Exchange differences on currency translation of foreign operations	**-**	**-16**
Gains (+)/losses (-) arising during the reporting period	-2	15
Gains (-)/losses (+) reclassified to the income statement during the reporting period	1	-30
Gains and losses on hedges of net investments in foreign operations	**-**	**5**
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	**1**	**15**
Gains (+)/losses (-) arising during the reporting period	1	15

» 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:

€ million	2022 Amount before taxes	2022 Income taxes	2022 Amount after taxes	2021 Amount before taxes	2021 Income taxes	2021 Amount after taxes
Items that may be reclassified to the income statement	**-8,977**	**2,700**	**-6,277**	**-1,385**	**445**	**-941**
Gains and losses on debt instruments measured at fair value through other comprehensive income	-8,978	2,701	-6,277	-1,389	448	-941
Exchange differences on currency translation of foreign operations	-	-1	-1	-16	-3	-19
Gains and losses on hedges of net investments in foreign operations	-	-	-	5	-	5
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	1	-	1	15	-	15
Items that will not be reclassified to the income statement	**251**	**-145**	**106**	**603**	**-62**	**541**
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-327	30	-297	473	-33	440
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	170	-51	119	39	-12	27
Gains and losses arising from remeasurement of defined benefit plans	407	-124	283	90	-17	73
Total	**-8,726**	**2,555**	**-6,171**	**-782**	**382**	**-400**

The changes were predominantly due to changes in various parameters in the financial, capital, and currency markets between the reporting dates of December 31, 2021 and December 31, 2022.

D Balance sheet disclosures

» 51 Cash and cash equivalents

€ million	Dec. 31, 2022	Dec. 31, 2021
Cash on hand	312	266
Balances with central banks	93,405	85,763
Total	**93,717**	**86,029**

The average target minimum reserve for 2022 was €4,159 million (2021: €4,026 million).

» 52 Loans and advances to banks

	Repayable on demand		Other loans and advances		Total	
€ million	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Domestic banks	**6,666**	3,310	**107,350**	96,627	**114,015**	99,937
Affiliated banks	4,033	1,506	103,471	92,528	107,505	94,034
Other banks	2,632	1,804	3,878	4,099	6,510	5,903
Foreign banks	**2,636**	3,973	**6,793**	3,750	**9,429**	7,723
Total	**9,301**	**7,284**	**114,142**	**100,375**	**123,444**	**107,659**

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Mortgage loans	96	126
Finance leases	-	1
Registered securities	11,593	9,649
Pass-through loans	68,213	65,690
Other bank loans	20,267	17,450
Money market placements	19,978	11,156
Current account debit balances	2,524	2,905
Other loans and advances	773	684
Total	**123,444**	**107,659**

» 53 Loans and advances to customers

€ million	Dec. 31, 2022	Dec. 31, 2021
Loans and advances to domestic customers	176,145	169,717
Loans and advances to foreign customers	27,501	25,948
Total	**203,646**	**195,665**

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Mortgage loans	56,962	56,192
Ship mortgage loans	-	54
Home savings loans advanced by building society	63,660	60,439
Finance leases	565	751
Registered securities	7,994	8,319
Pass-through loans	7,742	7,532
Other bank loans	48,903	43,032
Money market placements	2,879	4,431
Current account debit balances	6,042	5,259
Other loans and advances	8,900	9,655
Total	**203,646**	**195,665**

» 54 Hedging instruments (positive fair values)

Hedging instruments (positive fair values) amounted to €1,568 million (December 31, 2021: €389 million) and resulted solely from derivatives used as fair value hedges.

» 55 Financial assets held for trading

€ million	Dec. 31, 2022	Dec. 31, 2021
DERIVATIVES (POSITIVE FAIR VALUES)	**21,474**	**16,188**
Interest-linked contracts	17,779	13,478
Currency-linked contracts	2,956	1,481
Share-/index-linked contracts	547	847
Other contracts	6	2
Credit derivatives	187	380
BONDS AND OTHER FIXED-INCOME SECURITIES	**7,729**	**10,964**
Money market instruments	212	140
Bonds	7,517	10,824
SHARES AND OTHER VARIABLE-YIELD SECURITIES	**1,388**	**1,752**
Shares	1,381	1,750
Investment fund units	7	2
RECEIVABLES	**18,318**	**18,417**
of which from affiliated banks	76	24
of which from other banks	16,915	17,325
Money market placements	**17,058**	**17,127**
with banks	16,322	16,575
with customers	737	553
Promissory notes and registered bonds	**1,259**	**1,290**
from banks	669	774
from customers	590	516
Total	**48,909**	**47,321**

» 56 Investments

€ million	Dec. 31, 2022	Dec. 31, 2021
Bonds and other fixed-income securities	**40,731**	**49,125**
Money market instruments	1,070	488
Bonds	39,661	48,637
Shares and other variable-yield securities	**1,962**	**2,587**
Shares and other shareholdings	470	494
Investment fund units	1,491	2,080
Other variable-yield securities	1	13
Investments in subsidiaries	**236**	**305**
Investments in joint ventures	**320**	**349**
Investments in associates	**144**	**75**
Total	**43,393**	**52,440**

The carrying amount of investments in joint ventures accounted for using the equity method totaled €317 million (December 31, 2021: €349 million). €131 million of the investments in associates has been accounted for using the equity method (December 31, 2021: €72 million).

» 57 Investments held by insurance companies

€ million	Dec. 31, 2022	Dec. 31, 2021
Investment property	4,028	3,813
Investments in subsidiaries	840	901
Investments in joint ventures	69	21
Investments in associates	1	1
Mortgage loans	10,960	13,005
Promissory notes and loans	5,946	7,202
Registered bonds	5,430	8,510
Other loans	834	968
Variable-yield securities	13,023	13,742
Fixed-income securities	47,652	61,445
Derivatives (positive fair values)	278	199
Deposits with ceding insurers and other investments	464	594
Assets related to unit-linked contracts	16,429	18,719
Total	**105,955**	**129,119**

The fair value of investment property was €5,904 million as at the balance sheet date (December 31, 2021: €5,342 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 €1,182 million (December 31, 2021: €1,397 million). The group also has capital expenditure commitments amounting to €20 million (December 31, 2021: €87 million). A total of €41 million was spent on the repair and maintenance of investment property in 2022 (2021: €35 million). Vacant property resulted in repair and maintenance expenses of €4 million (2021: €3 million).

The table below shows the changes in loss allowances for investments held by insurance companies in 2021.

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

There were no changes in loss allowances for investments held by insurance companies in 2022.

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Land and buildings	867	888
Office furniture and equipment	179	178
Investment property	293	279
Right-of-use assets	622	537
Total	**1,960**	**1,881**

The fair value of investment property was €361 million as at the balance sheet date (December 31, 2021: €346 million). Payments in advance are allocated to the relevant item of property, plant and equipment.

» 59 Income tax assets and liabilities

€ million	Dec. 31, 2022	Dec. 31, 2021
Income tax assets	**3,428**	**1,141**
Current income tax assets	284	361
Deferred tax assets	3,144	780
Income tax liabilities	**1,063**	**1,456**
Current income tax liabilities	635	645
Deferred tax liabilities	428	811

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

€ million	Deferred tax assets Dec. 31, 2022	Deferred tax assets Dec. 31, 2021	Deferred tax liabilities Dec. 31, 2022	Deferred tax liabilities Dec. 31, 2021
Tax loss carryforwards	91	17		
Loans and advances to banks and customers	37	74	446	816
Financial assets and liabilities held for trading, hedging instruments (positive and negative fair values)	1,145	719	63	4
Investments	1,100	12	9	666
Loss allowances	257	205	-	-
Investments held by insurance companies	1,463	140	221	1,086
Property, plant and equipment, investment property, and right-of-use assets	11	14	233	213
Deposits from banks and customers	219	669	470	136
Debt certificates issued including bonds	2	80	827	23
Provisions for employee benefits and for share-based payment transactions	543	722	60	61
Other provisions	149	220	26	31
Insurance liabilities	-	83	109	52
Other balance sheet items	298	271	134	167
Total (gross)	5,316	3,224	2,600	3,255
Netting of deferred tax assets and deferred tax liabilities	-2,171	-2,444	-2,171	-2,444
Total (net)	**3,144**	**780**	**428**	**811**

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 €181 million (December 31, 2021: €261 million), which can be carried forward indefinitely, or for trade tax loss carryforwards amounting to €127 million (December 31, 2021: €211 million). There remained foreign loss carryforwards of €324 million (December 31, 2021: €672 million) for which no deferred tax assets are recognized. Of this total, €226 million will expire by 2031 and €98 million can be used indefinitely.

As regards companies (or permanent establishments of companies) in the DZ BANK Group that suffered tax losses in 2022 or 2021 in their tax jurisdiction, it will be possible to utilize deferred tax assets amounting to €1,028 million (December 31, 2021: €0 million) in the future if a corresponding level of taxable income is available. It is assumed that this will in fact be the case based on information available from planning of taxable income.

Overall, there was a net deferred tax asset recognized through other comprehensive income of €2,218 million (December 31, 2021: net deferred tax liability of €337 million).

Deferred tax assets of €2,244 million (December 31, 2021: €243 million) and deferred tax liabilities of €121 million (December 31, 2021: €254 million) are expected to be realized only after a period of 12 months.

As at December 31, 2022, no deferred tax liabilities were recognized for temporary differences of minus €9 million (December 31, 2021: €243 million) relating to investments in subsidiaries.

» 60 Other assets

€ million	Dec. 31, 2022	Dec. 31, 2021
Other assets held by insurance companies	4,384	4,492
Goodwill	155	155
Other intangible assets	508	522
of which software	415	419
of which acquired customer relationships	60	63
Other loans and advances	464	459
Residual other assets	1,693	874
Total	**7,204**	**6,501**

Other intangible assets include internally generated intangible assets amounting to €23 million (December 31, 2021: €23 million).

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Intangible assets	**145**	**151**
Reinsurers' share of insurance liabilities	**475**	**782**
Provision for unearned premiums	4	2
Benefit reserve	41	37
Provision for claims outstanding	431	743
Receivables	**1,697**	**1,703**
Receivables arising out of direct insurance operations	427	467
Receivables arising out of reinsurance operations	421	384
Other receivables	848	851
Credit balances with banks, checks and cash on hand	**703**	**713**
Property, plant and equipment	**410**	**408**
Land and buildings	281	277
Office furniture and equipment	65	62
Right-of-use assets held by insurance companies	64	69
Residual other assets	**956**	**736**
Prepaid expenses	47	64
Remaining assets held by insurance companies	909	673
Loss allowances	**-1**	**-2**
Total	**4,384**	**4,492**

The intangible assets in the other assets held by insurance companies include internally generated intangible assets amounting to €22 million (December 31, 2021: €16 million).

Trustee's blocking notes have been entered in the land register for land and buildings held by companies offering personal insurance of €159 million (December 31, 2021: €153 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	2022	2021
Balance as at Jan. 1	2	12
Additions	12	9
Utilizations/reversals	-11	-19
Balance as at Dec. 31	**4**	**2**

REINSURERS' SHARE OF THE CHANGES IN THE BENEFIT RESERVE

€ million	2022	2021
Balance as at Jan. 1	37	39
Additions	5	2
Utilizations/reversals	-1	-4
Balance as at Dec. 31	**41**	**37**

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

€ million	2022	2021
Balance as at Jan. 1	743	98
Claims expenses	75	833
less payments	-387	-188
Balance as at Dec. 31	**431**	**743**

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

AS AT DECEMBER 31, 2022

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	2	-	1	-
Benefit reserve	-	2	19	20
Provision for claims outstanding	147	239	45	-
Total	**149**	**241**	**65**	**20**

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**

» 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:

	Loans and advances to banks			Loans and advances to customers			
€ million	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	POCI assets
Balance as at Jan. 1, 2021	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
Additions	34	12	46	280	906	1,009	28
Utilizations	-	-	-	-	-1	-318	-4
Reversals	-29	-7	-24	-482	-429	-974	-19
Other changes	-1	-2	2	182	-305	172	1
Balance as at Dec. 31, 2022	**17**	**5**	**32**	**244**	**535**	**1,157**	**18**

	Investments			Other assets	Total
€ million	Stage 1	Stage 2	Stage 3	Stage 1	
Balance as at Jan. 1, 2021	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
Additions	3	2	1	-	2,322
Utilizations	-	-	-	-	-323
Reversals	-2	-4	-3	-	-1,975
Other changes	-	-	-	-	49
Balance as at Dec. 31, 2022	**4**	**11**	**4**	**2**	**2,029**

» 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:

€ million	Investments held by insurance companies Investment property
Carrying amounts as at Jan. 1, 2021	3,835
Cost as at Jan. 1, 2021	4,506
Additions	63
Additions in respect of borrowing costs eligible for capitalization	1
Reclassifications	4
Disposals	-3
Changes in scope of consolidation	-
Cost as at Dec. 31, 2021	**4,571**
Reversals of impairment losses as at Jan. 1, 2021	27
Additions	-
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
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
Cost as at Jan. 1, 2022	4,571
Additions	58
Reclassifications	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-7
Disposals	-10
Changes attributable to currency translation	-
Changes in scope of consolidation	257
Cost as at Dec. 31, 2022	**4,869**
Reversals of impairment losses as at Jan. 1, 2022	27
Additions	-
Disposals	-
Reversals of impairment losses as at Dec. 31, 2022	**28**
Depreciation/amortization and impairment losses as at Jan. 1, 2022	-785
Depreciation/amortization expense for the year	-89
Impairment losses for the year	-2
Reclassifications	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	3
Disposals	5
Changes in scope of consolidation	-
Depreciation/amortization and impairment losses as at Dec. 31, 2022	**-869**
Carrying amounts as at Dec. 31, 2022	**4,028**

	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
	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
	1,305	571	16	319	385	2,078
	13	58	-	5	-	121
	-15	-1	-	16	-	-
	-	-	-	-	-	-
	-1	-44	-13	-	-28	-65
	-	-	-	-	-	-2
	-	10	-	-	-	-1
	1,303	**594**	**3**	**339**	**356**	**2,133**
	13	-	81	5	-	4
	5	-	-	1	-	-
	-	-	-81	-	-	-
	18	**-**	**-**	**6**	**-**	**4**
	-430	-393	-97	-45	-230	-1,560
	-24	-54	-	-6	-	-126
	-	-1	-	-	-	-
	2	-	-	-2	-	-
	-	-	-	-	-	-
	-1	39	94	-	28	60
	-	-7	-	-	-	-
	-454	**-416**	**-3**	**-52**	**-202**	**-1,628**
	867	**179**	**-**	**293**	**155**	**508**

€ 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, 2021	297	64	157
Cost as at Jan. 1, 2021	523	196	717
Additions	3	19	38
Reclassifications	-4	-	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-22	-	-
Disposals	-	-6	-21
Cost as at Dec. 31, 2021	**500**	**209**	**734**
Reversals of impairment losses as at Jan. 1, 2021	10	-	-
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
Reclassifications	3	-	-
Reclassifications to/from non-current assets and disposal groups classified as held for sale	12	-	-
Disposals	-	5	21
Depreciation/amortization and impairment losses as at Dec. 31, 2021	**-233**	**-148**	**-583**
Carrying amounts as at Dec. 31, 2021	277	62	151
Cost as at Jan. 1, 2022	500	209	734
Additions	14	25	45
Reclassifications	-	2	-
Disposals	-	-8	-8
Cost as at Dec. 31, 2022	**514**	**228**	**771**
Reversals of impairment losses as at Jan. 1, 2022	10	-	-
Reversals of impairment losses as at Dec. 31, 2022	**10**	**-**	**-**
Depreciation/amortization and impairment losses as at Jan. 1, 2022	-233	-148	-583
Depreciation/amortization expense for the year	-11	-22	-46
Reclassifications	-	-2	-
Disposals	-	8	4
Depreciation/amortization and impairment losses as at Dec. 31, 2022	**-243**	**-163**	**-626**
Carrying amounts as at Dec. 31, 2022	**281**	**65**	**145**

In 2022, the useful life of the assets ranged from 2 to 58 years for buildings (2021: 4 to 59 years) and from 1 to 33 years for office furniture and equipment (2021: 1 to 25 years). The useful life for investment property was 1 to 80 years (2021: 2 to 80 years). Software included in other intangible assets was amortized over a useful life of 1 to 12 years, as had also been the case in 2021, while acquired customer relationships were amortized over 10 to 20 years (2021: 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 2022, borrowing costs relating to investment property held by insurance companies were capitalized in an amount of €0 million (2021: €1 million). The capitalization rate used for borrowing costs was 1.37 percent for investment property held by insurance companies (2021: 1.06 percent).

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

Other intangible assets include acquired customer relationships amounting to €60 million (December 31, 2021: €63 million). The associated amortization expense came to €4 million (2021: €4 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 individual non-current assets together with assets and liabilities from disposal groups not qualifying as discontinued operations, as described below. Gains and losses arising from the classification of assets and disposal groups as held for sale are reported under other net operating income.

At the level of DVB, the parts of the credit portfolio of the aviation finance business that had previously constituted a disposal group not qualifying as a discontinued operation were disposed of in 2022. The disposal gave rise to a net gain of €1 million, which was recognized under other net operating income. The impairment loss requirement of €2 million identified for this disposal group was also recognized under other net operating income.

The plan to sell the fully consolidated subsidiary of the DVB subgroup that had constituted a disposal group not qualifying as a discontinued operation in 2021 was abandoned in 2022. The impairment loss requirement of €9 million identified for this disposal group in 2021 was recognized as income under other net operating income in 2022.

Other disposal groups not qualifying as discontinued operations include units in various investment funds. The sale of these disposal groups is expected to take place in 2023.

The disposal group not qualifying as a discontinued operation that had been classified as such as at December 31, 2021 and consisted of receivables and an associate was sold in 2022, as was a further disposal group not qualifying as a discontinued operation that had been classified as such in the interim and consisted of receivables and a non-fully consolidated subsidiary. The resulting gain of €36 million was reported under other net operating income.

Assets that were individually classified as held for sale during the reporting year gave rise to income of €4 million, which was also recognized under other net operating income.

» 64 Deposits from banks

	Repayable on demand		With agreed maturity or notice period		Total	
€ million	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Domestic banks	**46,067**	56,372	**124,645**	131,426	**170,712**	187,798
Affiliated banks	41,487	52,196	33,705	22,254	75,192	74,450
Other banks	4,580	4,176	90,940	109,172	95,520	113,348
Foreign banks	**7,093**	3,290	**8,983**	5,474	**16,075**	8,764
Total	**53,160**	59,662	**133,628**	136,900	**186,787**	196,562

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Home savings deposits	1,275	1,567
Money market deposits	53,584	49,072
Other deposits	131,928	145,923
Total	**186,787**	196,562

» 65 Deposits from customers

	Repayable on demand		With agreed maturity or notice period		Total	
€ million	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Domestic customers	30,418	24,628	99,261	91,030	129,679	115,658
Foreign customers	17,265	13,262	12,485	10,055	29,750	23,317
Total	**47,682**	**37,889**	**111,747**	**101,086**	**159,429**	**138,975**

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Home savings deposits	66,310	66,194
Money market deposits	37,246	14,886
Other deposits	55,873	57,895
Total	**159,429**	**138,975**

» 66 Debt certificates issued including bonds

€ million	Dec. 31, 2022	Dec. 31, 2021
Bonds issued	**68,271**	**67,086**
Mortgage Pfandbriefe	28,968	27,472
Public-sector Pfandbriefe	1,232	1,657
Other bonds	38,071	37,957
Other debt certificates issued	**14,077**	**12,566**
Total	**82,349**	**79,652**

As was also the case as at December 31, 2021, all other debt certificates issued are commercial paper.

» 67 Hedging instruments (negative fair values)

Hedging instruments (negative fair values) amounted to €442 million (December 31, 2021: €1,678 million) and resulted solely from derivatives used as fair value hedges.

» 68 Financial liabilities held for trading

€ million	Dec. 31, 2022	Dec. 31, 2021
DERIVATIVES (NEGATIVE FAIR VALUES)	**26,641**	**15,402**
Interest-linked contracts	21,217	11,911
Currency-linked contracts	3,148	1,682
Share-/index-linked contracts	1,899	1,577
Other contracts	270	150
Credit derivatives	107	82
SHORT POSITIONS	**1,017**	**1,548**
BONDS ISSUED	**20,014**	**22,245**
DEPOSITS	**4,806**	**4,216**
of which from affiliated banks	3,705	3,412
of which from other banks	954	613
Money market deposits	**4,652**	**4,031**
from banks	4,592	3,934
from customers	60	97
Promissory notes and registered bonds issued	**155**	**185**
to banks	68	91
to customers	87	94
Total	**52,478**	**43,411**

As was also the case as at December 31, 2021, bonds issued mainly comprise share certificates and index-linked certificates.

» 69 Provisions

€ million	Dec. 31, 2022	Dec. 31, 2021
Provisions for employee benefits	**1,356**	**1,772**
Provisions for defined benefit plans	922	1,251
Provisions for other long-term employee benefits	200	206
of which for semi-retirement schemes	72	59
Provisions for termination benefits	206	276
of which for early retirement schemes	26	27
of which for restructuring	135	201
Provisions for short-term employee benefits	28	38
Provisions for share-based payment transactions	**51**	**42**
Other provisions	**1,841**	**2,178**
Provisions for onerous contracts	30	25
Provisions for restructuring	16	41
Provisions for loan commitments	147	125
Provisions for financial guarantee contracts	89	88
Other provisions for loans and advances	51	38
Provisions relating to building society operations	1,053	1,398
Residual provisions	455	462
Total	**3,248**	**3,992**

The provisions for restructuring assigned to the provisions for employee benefits relate to various undertakings, 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 Bank into DZ BANK, which was completed in August 2022.

Other provisions

The following table shows the changes in other provisions in 2022:

€ million	Provisions for onerous contracts	Provisions for restruc-turing	Provisions for loan commitments	Provisions for financial guarantee contracts	Other provisions for loans and advances	Provisions relating to building society operations	Residual provisions	**Total**
Balance as at Jan. 1, 2022	25	41	125	88	38	1,398	462	2,178
Additions	18	13	284	101	29	115	339	**899**
Utilizations	-	-23	-	-	-1	-269	-261	**-554**
Reversals	-12	-11	-264	-92	-16	-192	-72	**-658**
Interest expense/changes in discount rate	-1	-	1	1	1	-	-5	**-4**
Other changes	-	-4	1	-8	-	-	-9	**-19**
Balance as at Dec. 31, 2022	**30**	**16**	**147**	**89**	**51**	**1,053**	**455**	**1,841**

The residual provisions include provisions totaling €72 million for litigation risk (December 31, 2021: €71 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 €300 million). The plaintiffs maintain 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 residual provisions also include provisions of €113 million for pre-litigation risks in connection with the lending business and building society operations (December 31, 2021: €66 million). The other disclosures 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, 2022

€ million	≤ 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provisions for onerous contracts	-	-	-	30	-
Provisions for restructuring	2	14	1	-	-
Provisions for loan commitments	19	10	74	38	5
Provisions for financial guarantee contracts	17	12	37	23	-
Other provisions for loans and advances	-	44	5	1	-
Provisions relating to building society operations	5	280	482	286	-
Residual provisions	103	154	124	67	8
Total	**146**	**514**	**722**	**446**	**13**

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**

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, 2021	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
Additions	97	115	65	7	9	25	67	385
Reversals	-108	-71	-77	-8	-9	-11	-72	-356
Other changes	2	-1	1	-	-1	-1	-5	-5
Balance as at Dec. 31, 2022	**46**	**74**	**27**	**-**	**6**	**21**	**62**	**236**

» 70 Insurance liabilities

€ million	Dec. 31, 2022	Dec. 31, 2021
Provision for unearned premiums	1,201	1,179
Benefit reserve	75,200	74,167
Provision for claims outstanding	16,845	16,429
Provision for premium refunds	-4,436	11,237
Other insurance liabilities	70	53
Reserve for unit-linked insurance contracts	14,915	15,799
Total	**103,795**	**118,863**

Due to the changes in interest rates in the reporting period and the related reduction in the fair values of fixed-income securities, a comparison of the carrying amounts and fair values of investments held by insurance companies gave rise to considerable unrealized losses that were recognized in other comprehensive income. Where these investments held by insurance companies relate to life insurance contracts with policyholder participation, expenses for deferred premium refunds were calculated on the basis of these unrealized losses in line with IFRS 4.30. Overall, the 'Expenses for deferred premium refunds' item was negative and thus constituted accrued income in the reporting period. At present, the DZ BANK Group is reasonably certain that the unrealized losses are a temporary effect that will reverse.

CHANGES IN THE PROVISION FOR UNEARNED PREMIUMS

€ million	2022	2021
Balance as at Jan. 1	1,179	1,194
Additions	1,259	1,238
Utilizations/reversals	-1,240	-1,259
Changes attributable to currency translation	3	6
Balance as at Dec. 31	**1,201**	**1,179**

CHANGES IN THE BENEFIT RESERVE

€ million	2022	2021
Balance as at Jan. 1	74,167	70,470
Additions	5,244	7,268
Interest component	944	918
Utilizations/reversals	-5,156	-4,516
Other changes in measurement	-	6
Changes attributable to currency translation	-	1
Changes in scope of consolidation	-	20
Balance as at Dec. 31	**75,200**	**74,167**

Supplementary change-in-discount-rate reserves totaling €5,233 million have been recognized for policies with a discount rate in excess of the reference rate specified in the DeckRV (December 31, 2021: €5,451 million).

CHANGES IN THE PROVISION FOR CLAIMS OUTSTANDING

€ million	2022	2021
Balance as at Jan. 1	16,429	14,627
Claims expenses	7,662	8,424
less payments	-7,194	-6,847
Changes attributable to currency translation	-52	225
Balance as at Dec. 31	**16,845**	**16,429**

CHANGES IN THE PROVISION FOR PREMIUM REFUNDS

€ million	2022	2021
Balance as at Jan. 1	11,237	12,569
Additions	1,010	599
Utilizations/reversals	-713	-820
Other changes in measurement	-13,712	1,767
Changes resulting from unrealized gains and losses on investments (through other comprehensive income)	-2,273	-2,947
Changes resulting from other remeasurements (through profit or loss)	15	49
Changes attributable to currency translation	-	20
Balance as at Dec. 31	**-4,436**	**11,237**

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

AS AT DECEMBER 31, 2022

€ million	≤ 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provision for unearned premiums	996	158	47	-
Benefit reserve	1,436	5,105	13,371	55,288
Provision for claims outstanding	6,452	6,457	3,936	-
Provision for premium refunds	1,003	709	736	-6,884
Other insurance liabilities	22	30	15	3
Total	**9,909**	**12,459**	**18,105**	**48,407**

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**

» 71 Other liabilities

€ million	Dec. 31, 2022	Dec. 31, 2021
Other liabilities of insurance companies	7,573	7,796
Accruals	1,485	1,526
Other payables	221	170
Lease liabilities	637	547
Residual other liabilities	1,083	758
Total	**10,999**	**10,797**

Residual other liabilities principally relate to initial margins from client clearing.

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Other provisions	**354**	**426**
Provisions for employee benefits	311	391
of which provisions for defined benefit plans	119	203
Provisions for share-based payment transactions	3	3
Other provisions	39	31
Payables and residual other liabilities	**7,219**	**7,371**
Subordinated capital	90	80
Deposits received from reinsurers	38	36
Payables arising out of direct insurance operations	1,327	1,398
Payables arising out of reinsurance operations	568	597
Debt certificates issued including bonds	36	31
Deposits from banks	413	563
Derivatives (negative fair values)	223	103
Liabilities from capitalization transactions	3,400	3,592
Insurance lease liabilities	80	86
Other payables	338	318
Residual other liabilities	706	567
Total	**7,573**	**7,796**

» 72 Subordinated capital

€ million	Dec. 31, 2022	Dec. 31, 2021
Subordinated liabilities	4,510	3,062
Share capital repayable on demand	12	12
Total	**4,521**	**3,074**

» 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 2021 financial year, DZ BANK paid a dividend of €0.20 per share in 2022 on the basis of a resolution of the Annual General Meeting on May 25, 2022. In 2021, DZ BANK had paid a dividend of €0.16 per share on the basis of a resolution of the Annual General Meeting on May 19, 2021 and an additional dividend – also of €0.16 per share – on the basis of a resolution adopted by the Extraordinary General Meeting held on November 4, 2021. No dividend for 2022 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 2022.

Disclosures on shareholders

At the end of 2022, 99.5 percent of shares were held by cooperative enterprises (December 31, 2021: 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 €436 million (December 31, 2021: loss of €707 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.

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. The equity component of €95 million reported in this context 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 had been 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

2022

€ 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	-	-5,636	-641
Exchange differences on currency translation of foreign operations	-	4	-5
Gains and losses on hedges of net investments in foreign operations	-	-	-
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-	-260	-37
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	-	119	-
Gains and losses arising from remeasurement of defined benefit plans	271	-	13
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	1	-
Other comprehensive income/loss	**271**	**-5,773**	**-669**

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**

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

€ million	Items not reclassified to the income statement		Items reclassified to the income statement	
	Reserve from equity instruments for which the fair value OCI option has been exercised	Reserve from gains and losses on financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	Reserve from debt instruments measured at fair value through other comprehensive income	Currency translation reserve
Equity as at Jan. 1, 2021	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
Other comprehensive income/loss	-260	119	-5,636	5
Total comprehensive income/loss	**-260**	**119**	**-5,636**	**5**
Changes in scope of consolidation	4	-	-	1
Acquisition/disposal of non-controlling interests	-	-	3	-
Reclassifications within equity	-23	-6	-	-
Equity as at Dec. 31, 2022	**342**	**59**	**-4,608**	**64**

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			Investments held by insurance companies			Total
€ million	Stage 1	Stage 2	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2021	2	-	8	-	24	10	2	-	46
Additions	-	-	5	-	-	57	7	2	71
Utilizations	-	-	-	-	-	-	-	-1	-1
Reversals	-1	-1	-6	-	-	-50	-2	-	-60
Other changes	-	-	-	-	-	1	-5	-	-4
Balance as at Dec. 31, 2021	-	-	7	-	24	19	2	1	53
Additions	-	-	6	1	-	11	14	4	36
Utilizations	-	-	-	-	-	-	-	-3	-3
Reversals	-	-	-7	-	-	-14	-8	-	-31
Other changes	-	-	-	-	-	1	-1	-	-
Balance as at Dec. 31, 2022	**-**	**-**	**7**	**-**	**24**	**16**	**7**	**1**	**56**

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 chapter VII.8 'Capital adequacy' of the risk report in the group management report.

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, 2022 Carrying amount	Dec. 31, 2022 Fair value	Dec. 31, 2021 Carrying amount	Dec. 31, 2021 Fair value
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**187,855**	**187,870**	**218,606**	**218,663**
Financial assets measured at fair value through profit or loss	**85,556**	**85,571**	**89,638**	**89,695**
Financial assets mandatorily measured at fair value through profit or loss	***80,128***	***80,142***	***80,923***	***80,980***
Loans and advances to customers	192	192	168	168
Hedging instruments (positive fair values)	1,568	1,568	389	389
Financial assets held for trading	48,909	48,923	47,321	47,378
Investments	2,489	2,489	3,129	3,129
Investments held by insurance companies	26,970	26,970	29,917	29,917
Financial assets designated as at fair value through profit or loss	***5,428***	***5,428***	***8,715***	***8,715***
Loans and advances to banks	1,340	1,340	1,854	1,854
Loans and advances to customers	753	753	1,033	1,033
Investments	3,336	3,336	5,829	5,829
Financial assets measured at fair value through other comprehensive income	**102,280**	**102,280**	**128,805**	**128,805**
Financial assets mandatorily measured at fair value through other comprehensive income	***95,861***	***95,861***	***122,068***	***122,068***
Loans and advances to banks	55	55	68	68
Loans and advances to customers	2,070	2,070	2,781	2,781
Investments	25,244	25,244	30,779	30,779
Investments held by insurance companies	68,492	68,492	88,439	88,439
Financial assets designated as at fair value through other comprehensive income	***6,419***	***6,419***	***6,737***	***6,737***
Investments	504	504	528	528
Investments held by insurance companies	5,916	5,916	6,209	6,209
Non-current assets and disposal groups classified as held for sale	**19**	**19**	**163**	**163**
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**422,802**	**401,048**	**395,340**	**402,993**
Cash and cash equivalents	93,405	93,400	85,763	85,763
Loans and advances to banks	121,994	111,969	105,713	107,528
Loans and advances to customers	198,125	182,465	189,044	195,169
Investments	11,354	11,129	11,733	12,378
Investments held by insurance companies	85	73	147	135
Other assets	2,011	2,011	2,021	2,021
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-4,173		920	
FINANCE LEASES	**552**	**555**	**731**	**736**
Loans and advances to banks	-	-	1	1
Loans and advances to customers	552	555	730	735

€ million	Dec. 31, 2022 Carrying amount	Dec. 31, 2022 Fair value	Dec. 31, 2021 Carrying amount	Dec. 31, 2021 Fair value
FINANCIAL LIABILITIES MEASURED AT FAIR VALUE	**78,755**	**78,668**	**74,519**	**74,505**
Financial liabilities mandatorily measured at fair value through profit or loss	**53,142**	**53,068**	**45,192**	**45,178**
Hedging instruments (negative fair values)	442	442	1,678	1,678
Financial liabilities held for trading	52,478	52,404	43,411	43,397
Other liabilities	223	223	103	103
Financial liabilities designated as at fair value through profit or loss	**25,612**	**25,600**	**29,327**	**29,327**
Deposits from banks	3,888	3,887	3,953	3,953
Deposits from customers	6,089	6,081	8,259	8,259
Debt certificates issued including bonds	15,565	15,562	16,975	16,975
Subordinated capital	69	69	140	140
FINANCIAL LIABILITIES MEASURED AT AMORTIZED COST	**408,314**	**392,662**	**391,013**	**394,251**
Deposits from banks	182,899	173,934	192,609	194,281
Deposits from customers	153,339	151,400	130,716	132,063
Debt certificates issued including bonds	66,783	61,413	62,677	62,974
Other liabilities	1,987	1,987	1,926	1,927
Subordinated capital	4,452	3,928	2,934	3,006
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-1,147		150	
LEASES	**717**	**717**	**632**	**632**
Other liabilities	717	717	632	632
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**236**	**780**	**213**	**213**
Financial guarantee contracts	**89**	**89**	**88**	**88**
Provisions	89	89	88	88
Loan commitments	**147**	**691**	**125**	**125**
Provisions	147	691	125	125

There is no active market with quoted prices pursuant to IFRS 13.76 for home savings loans, home savings deposits, or similar assets and liabilities. The specific features of a home savings product also mean that there is currently no suitable method for calculating fair value in accordance with IFRS 13. The home savings contracts cannot be measured individually because the allocation of home savings loans depends on the overall performance of the collective building society operations (allocation assets) and thus, in particular, on the performance of the home savings deposits (link to the collective). Consequently, the financial assets and financial liabilities resulting from collective building society operations are shown only at their carrying amounts in the table above.

Building society simulation models are used to calculate risk-bearing capacity and for regulatory purposes. These models have been updated in line with the increased requirements imposed by the banking supervisor in recent years. Statistical parameters, empirical values, and current market assessments are used in the models. The present value of the expected future cash flows from the collective contracts in force, less cost components and risk margins, compares with the balance of the carrying amounts from building society operations as follows: The balance of the carrying amounts from building society operations amounted to minus €64,430 million (excess of liabilities), whereas the collective present value came to minus €54,469 million.

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 €211 million (December 31, 2021: €105 million).

The differences between the carrying amount and the fair value of financial assets held for trading, financial liabilities held for trading, deposits from banks, deposits from customers, and debt certificates issued including bonds in the 'financial assets measured at fair value' and 'financial liabilities measured at fair value' classes are due to the deferral of day-one profit or loss, which is based on unobservable measurement parameters.

The underlying valuation curves used to calculate the fair values of loans and advances to banks, loans and advances to customers, and deposits from banks in the covered lending business for commercial real estate finance measured at amortized cost were adjusted as at December 31, 2022. This caused the fair values to increase by €635 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, whereby the day-one profit or loss is shown together with the financial instrument. The difference is amortized to profit or loss over the term of the transaction. The following table shows the deferred, previously unrecognized differences, broken down by class pursuant to IFRS 7.

	Measured at fair value	
€ million	Financial assets	Financial liabilities
Balance as at Jan. 1, 2021	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
Additions as a result of transactions	8	41
Differences amortized to profit or loss	-6	-12
Reclassifications	-44	44
Balance as at Dec. 31, 2022	**14**	**87**

» 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, 2022**	Dec. 31, 2021
Investments	**504**	528
Shares and other variable-yield securities	408	409
Investments in subsidiaries	89	116
Investments in joint ventures	2	-
Investments in associates	5	3
Investments held by insurance companies	**5,916**	6,209
Shares and other variable-yield securities	5,477	5,779
Investments in subsidiaries	419	408
Investments in joint ventures	19	21
Investments in associates	1	1
Total	6,419	6,737

Dividends of €69 million (2021: €83 million) were recognized in 2022 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 €2,077 million, for which the option of recognition at fair value through other comprehensive income had been exercised, were derecognized in 2022 (2021: €1,538 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 €53 million (2021: €248 million), which were reclassified to retained earnings or the provision for premium refunds in the reporting year. In 2022, dividends of €149 million (2021: €109 million) were recognized in respect of investments and investments held by insurance companies that have been sold.

In 2021, non-current assets and disposal groups classified as held for sale that had a carrying amount of €60 million and were designated as at fair value through other comprehensive income had been sold and cumulative gains and losses amounting to a net gain of €23 million had been 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, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Assets	**69,475**	92,029	**94,824**	101,882	**23,570**	24,753
Loans and advances to banks	-	-	1,395	1,922	-	-
Loans and advances to customers	-	-	2,419	3,303	596	679
Hedging instruments (positive fair values)	-	-	1,568	389	-	-
Financial assets held for trading	1,394	2,477	46,906	44,256	623	645
Investments	13,020	19,466	16,567	18,898	1,985	1,900
Investments held by insurance companies	55,061	70,086	25,951	33,114	20,366	21,365
Non-current assets and disposal groups classified as held for sale	-	-	19	-	-	163
of which non-recurring measurement	-	-	-	-	-	7
Liabilities	**3,059**	4,510	**92,462**	88,027	**572**	595
Deposits from banks	-	-	3,887	3,953	-	-
Deposits from customers	-	-	6,081	8,259	-	-
Debt certificates issued including bonds	2,987	3,331	12,170	13,218	404	427
Hedging instruments (negative fair values)	-	-	442	1,678	-	-
Financial liabilities held for trading	51	1,178	52,255	42,071	98	148
Financial liabilities arising from unit-linked insurance products	-	-	17,425	18,627	-	-
Other liabilities	21	2	201	101	-	-
Subordinated capital	-	-	-	120	69	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:

€ million	Transfers from Level 1 to Level 2		Transfers from Level 2 to Level 1	
	2022	2021	**2022**	2021
Financial assets measured at fair value	**2,220**	1,000	**760**	922
Financial assets held for trading	516	-	-	-
Investments	22	-	35	-
Investments held by insurance companies	1,682	1,000	725	922
Financial liabilities measured at fair value	**1,027**	-	**-**	-
Financial liabilities held for trading	1,027	-	-	-

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 other shareholdings 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 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, 2022.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Loans and advances to customers	Loans	404	DCF method	BVAL price adjustment	-4.0 to 5.3
	Profit-participation certificates	25	DCF method	Credit spread	7.4 to 8.2
	Shareholders' loans	91	DCF method	Credit spread	3.6 to 12.1
	Initial fund loans	16	DCF method	Probability of default	0.4
	Receivables arising from silent partnerships	54	DCF method	Credit spread	6.1 to 12.2
	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
Financial assets held for trading	ABSs	2	DCF method	Credit spread	7.9
	Loans and advances to issuers in default	17	DCF method	Recovery rate	-
	Collateralized loan obligations	133	Gaussian copula model	Liquidity spread	2.0 to 6.5
	Bearer securities	127	DCF method	BVAL price adjustment	-0.3 to 1.5
	Registered securities	343	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	61	DCF method	Credit spread	0.6 to 13.1
	Investments in associates	4	Income capitalization approach	Future income	-
	Investments in joint ventures	2	Income capitalization approach	Future income	-
		57	DCF method	Credit spread	0 to 11.5
		172	Income capitalization approach, net asset value method	Future income	-
	Investments in subsidiaries	7	Net asset value	-	-
	Collateralized loan obligations	1	Gaussian copula model	Liquidity spread	1.8 to 2.6
	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
	Bearer securities	567	DCF method	BVAL price adjustment	-0.3 to 107.5
	Investment fund units	23	Net asset value	-	-
	Mortgage-backed securities	195	DCF method	Duration	-
		15	DCF method	Recovery rate	0.0 to 71.4
	Other shareholdings	245	DCF method	Capitalization rate, growth factor	1.0 to 11.0
		22	DCF method	Credit spread	0.0
		203	Income capitalization approach, net asset value method	Future income	-
	VR Circle	405	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	1,547	Third-party pricing information	-	-
	Investments in subsidiaries, associates, and joint ventures, real estate funds, profit-participation certificates, and other long-term equity investments	5,038	Net asset value	-	-
	Investments in subsidiaries, associates, and joint ventures, other long-term equity investments, and shares in cooperatives	287	Income capitalization approach	Future income	7.0 to 9.0
	Fixed-income securities, convertible bonds, shares, investment fund units, and shares in cooperatives	754	Third-party pricing information	-	-
	Profit-participation certificates, mortgage loans, and promissory notes	12,674	DCF method	Credit spread	0.6 to 10.0
	Initial fund loans	56	DCF method	Probability of default	0.4
	Other shareholdings	10	Approximation	-	-
Debt certificates issued including bonds	VR Circle	404	DCF method	Multiple-year default probabilities	0.0 to 100.0
Financial liabilities held for trading	Equity/commodity basket products	95	Local volatility model	Correlation of the risk factors considered	10.1 to 80.7
	Products with commodity volatility derived from comparable instruments	3	Local volatility model	Volatility	12.2 to 86.8
Subordinated capital	Loans	69	DCF method	Credit spread	0.5

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

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, 2021	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
Additions (purchases)	97	587	161	4,465	-
Transfers	-	436	663	280	-
from Level 3 to Levels 1 and 2	-	-416	-591	-51	-
from Levels 1 and 2 to Level 3	-	852	1,254	331	-
Disposals (sales)	-113	-1,026	-603	-1,974	-161
Changes resulting from measurement at fair value	-67	-22	-100	-3,799	-
through profit or loss	-38	-22	-41	67	-
through other comprehensive income	-29	-	-59	-3,866	-
Other changes	1	2	-36	30	-2
Balance as at Dec. 31, 2022	**596**	**623**	**1,985**	**20,366**	**-**

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	Subordinated capital
Balance as at Jan. 1, 2021	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
Additions (issues)	-	42	-
Transfers	-	-39	50
from Level 3 to Level 2	-	-251	-
from Level 2 to Level 3	-	212	50
Disposals (settlements)	-25	-40	-
Changes resulting from measurement at fair value through profit or loss	2	-14	-1
Other changes	1	-	-
Balance as at Dec. 31, 2022	**404**	**98**	**69**

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 €82 million during the year under review (2021: net gain of €555 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, 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 €22 million loss in the income statement (2021: loss of €34 million) and a loss of €1,089 million under other comprehensive income/loss (2021: loss of €1,409 million). For the fair values of investments held by insurance companies, a worsening in the credit rating of 1 percent would lead to the recognition of a €29 million loss in the income statement (2021: loss of €40 million) and a loss of €1,083 million under other comprehensive income/loss (2021: loss of €1,438 million).

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 €9 million loss in the income statement (2021: loss of €6 million). For the fair values of investments, there would be a €47 million loss under other comprehensive income/loss (2021: loss of €56 million) and a €16 million loss in the income statement (2021: loss of €31 million). For the fair values of non-current assets and disposal groups classified as held for sale, a loss of €1 million would have been recognized in the income statement in 2021.

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 €14 million loss in the income statement (2021: loss of €13 million) and a loss of €3 million under other comprehensive income/loss (2021: loss of €12 million).

An alternative assumption about the credit spreads used could lead to a significant change in the fair values of some of the ABSs reported under financial assets held for trading and under investments. All other things being equal, an increase of 1 percent in these spreads would lead to the recognition of a €1 million loss under other comprehensive income/loss (2021: loss of €1 million).

An alternative assumption about the liquidity spreads used could lead to a significant change in respect of collateralized loan obligations reported under investments and under financial assets held for trading. All other things being equal, a rise in the liquidity spread assumptions by 1 percent would lead to a €4 million decrease in the fair values of these financial assets that would be recognized in the income statement (2021: 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, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Assets	**168**	270	**248,661**	241,376	**158,484**	167,034
Cash and cash equivalents	-	-	93,400	85,763	-	-
Loans and advances to banks	-	-	108,805	104,019	3,164	3,510
Loans and advances to customers	-	-	35,210	39,145	147,255	156,023
Investments	167	270	10,615	11,781	346	327
Investments held by insurance companies	-	-	-	60	5,977	5,416
Property, plant and equipment, investment property, and right-of-use assets	-	-	168	152	192	194
Other assets	-	-	462	458	1,549	1,563
Liabilities	**22,256**	22,129	**297,355**	299,374	**73,831**	72,961
Deposits from banks	-	-	172,525	192,685	1,410	1,596
Deposits from customers	-	-	84,877	65,536	66,523	66,527
Debt certificates issued including bonds	22,256	22,129	39,157	40,845	-	-
Provisions	-	-	513	37	268	177
Other liabilities	-	-	277	226	1,710	1,702
Subordinated capital	-	-	7	46	3,920	2,960

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, 2022.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Loans and advances to banks	Loans	3,164	DCF method	Credit spread, recovery rate
Loans and advances to customers	Home savings loans	3,013	Amortized cost	-
	Building loans	53,722	DCF method	Credit spread
	Loans	90,520	DCF method	Credit spread, recovery rate
Investments	ABSs	34	DCF method	Credit spread
	Bonds with adjustment spread	310	DCF method	BVAL price adjustment
	Loans and advances to issuers in default	2	DCF method	Recovery rate
Investments held by insurance companies		88	Cost	Nominal amounts
	Investment property	5,816	DCF method	Future rent, reference prices in the market
	Loans and bank accounts	73	Cost	Nominal amounts
Property, plant and equipment	Investment property	192	Valuation reports	-
Other assets	Credit balances with banks	702	Cost	Nominal amounts
	Other receivables	847	Cost	Nominal amounts
Deposits from banks	Home savings deposits	1,275	Cost	-
	Loans	135	DCF method	Credit spread
Deposits from customers	Home savings deposits	66,087	Cost	-
	Loans	409	DCF method	Credit spread
	Overpayments on consumer finance loans	27	Cost	-
Provisions	Provisions for loan commitments	268	Settlement amount	-
Other liabilities	Loans	576	Cost	Nominal amounts
	Non-controlling interests in special funds	164	Cost	Nominal amounts
	Subordinated liabilities	16	Cost	Nominal amounts
	Subordinated liabilities	18	Net asset value	-
	Registered securities	36	Cost	Nominal amounts
	Other payables	10	Cost	Nominal amounts
	Liabilities arising from rented software	1	Carrying amount	Assumptions regarding the exercise of extension or termination options
	Liabilities from capitalization transactions	889	Cost	Nominal amounts
Subordinated capital	Bonds with adjustment spread	3,920	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, 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	64,148	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	713	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

» 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 gain of €87 million in 2022 (2021: loss of €73 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 carrying amounts 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	Carrying amount		Repayment amount	
	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Deposits from banks	3,888	3,953	4,366	3,891
Deposits from customers	6,089	8,259	7,249	7,892
Debt certificates issued including bonds	15,565	16,975	17,956	16,912
Subordinated capital	69	140	68	134
Total	**25,612**	**29,327**	**29,639**	**28,829**

In the course of the year under review, a gain of €6 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 (2021: gain of €5 million). This amount was reclassified to retained earnings within equity once the financial liabilities had been derecognized.

» 80 Reclassification

On January 1, 2021, financial assets had been reclassified prospectively due to a change to the business model that was attributable to the R+V-wide strategic program known as ‘Wachstum durch Wandel’ (growth through change).

Financial assets of €15,606 million categorized as ‘financial assets measured at amortized cost’ had been reclassified as ‘financial assets measured at fair value through other comprehensive income’.

Financial assets of €3,139 million categorized as ‘financial assets measured at fair value through profit or loss’ had been reclassified as ‘financial assets measured at fair value through other comprehensive income’ in 2021. At the time of reclassification, the reclassified assets had an average effective interest rate of 2.25 percent. During the reporting period, these assets generated interest income of €69 million (2021: €91 million).

» 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, 2022

€ 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	79,486	58,113	21,373	12,289	8,269	815
Reverse repos/securities borrowing	18,911	-	18,911	18,565	-	345
Total	**98,396**	**58,113**	**40,283**	**30,854**	**8,269**	**1,160**

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**

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, 2022

€ 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	79,447	53,573	25,874	12,860	6,799	6,216
Repos/securities lending	1,034	-	1,034	920	-	114
Other financial instruments	219	219	-	-	-	-
Total	**80,700**	**53,792**	**26,908**	**13,780**	**6,799**	**6,330**

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**

» 82 Sale and repurchase agreements, securities lending

Transfers of financial assets

In 2022, 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, 2022	Dec. 31, 2021
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**100**	**100**
Financial assets measured at fair value through profit or loss	**100**	100
Financial assets mandatorily measured at fair value through profit or loss	***100***	*100*
Financial assets held for trading	100	100
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**608**	**772**
Investments	608	772
Total	**708**	**872**

As at the balance sheet date, additional collateral with a carrying amount of €146 million had been furnished in connection with repos (December 31, 2021: €262 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, 2022	Dec. 31, 2021
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT FAIR VALUE	**100**	**100**
Liabilities associated with financial assets measured at fair value through profit or loss	**100**	**100**
Liabilities associated with financial assets mandatorily measured at fair value through profit or loss	***100***	***100***
Liabilities associated with financial assets held for trading	100	100
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**623**	**791**
Liabilities associated with investments	623	791
Total	**723**	**891**

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, 2022, the fair value of securities involved in such transactions was €18,634 million (December 31, 2021: €18,165 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 €18,674 million as at the balance sheet date (December 31, 2021: €18,028 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 and financial assets measured at amortized cost 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, 2022	Dec. 31, 2021
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**4,055**	**3,812**
Financial assets measured at fair value through profit or loss	**1,228**	**1,178**
Financial assets mandatorily measured at fair value through profit or loss	***1,228***	***1,178***
Financial assets held for trading	1,228	1,178
Financial assets measured at fair value through other comprehensive income	**2,827**	**2,634**
Financial assets mandatorily measured at fair value through other comprehensive income	***2,827***	***2,634***
Investments held by insurance companies	2,827	2,634
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**33**	**-**
Investments held by insurance companies	33	-
Total	**4,089**	**3,812**

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 €19 million had been furnished in connection with securities lending (December 31, 2021: €24 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, 2022	Dec. 31, 2021
Bonds and other fixed-income securities	1,078	2,305
Shares and other variable-yield securities	23	26
Total	**1,101**	**2,331**

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, 2022, the fair value of the additional collateral received was €56 million (December 31, 2021: €65 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, 2022	Dec. 31, 2021
Financial assets held for trading	1,328	1,278
Investments	608	772
Investments held by insurance companies	2,861	2,634
Total	**4,797**	**4,684**

» 83 Collateral

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

€ million	Dec. 31, 2022	Dec. 31, 2021
Loans and advances to banks	75,686	73,156
Loans and advances to customers	313	189
Financial assets held for trading	13,427	9,543
Investments	10,887	29,175
Investments held by insurance companies	1,640	1,290
Total	**101,954**	**113,354**

Of the total financial assets pledged as collateral for liabilities, financial assets held for trading and investments with a carrying amount of €6,673 million (December 31, 2021: €4,999 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 comprise collateral in the form of cash as part of collateral management. This is arranged under standard industry collateral agreements. The pledged loans and advances to customers also 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	2022	2021
Financial instruments measured at fair value through profit or loss	**-1,876**	**492**
Financial instruments mandatorily measured at fair value through profit or loss	-5,114	195
Financial instruments designated as at fair value through profit or loss	3,238	298
Financial assets measured at fair value through other comprehensive income	**-8,336**	**1,862**
Financial assets mandatorily measured at fair value through other comprehensive income	-8,240	1,194
of which gains and losses recognized in profit or loss	1,188	2,156
of which gains and losses recognized in other comprehensive income	-9,203	-1,175
of which gains and losses reclassified on derecognition from cumulative other comprehensive income to profit or loss	-225	213
Financial assets designated as at fair value through other comprehensive income	-96	668
Financial assets measured at amortized cost	**4,891**	**4,287**
Financial liabilities measured at amortized cost	**-2,316**	**-1,331**

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 €170 million (2021: gain of €39 million) was recognized in other comprehensive income/loss and a gain of €4,409 million (2021: gain of €514 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	2022	2021
Interest income	**6,913**	**5,925**
From financial assets measured at amortized cost including finance leases	5,183	4,199
From financial assets measured at fair value through other comprehensive income	1,729	1,726
Interest expense	**-2,322**	**-1,335**

Fee and commission income and expenses

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

€ million	2022	2021
Fee and commission income		
From financial assets and financial liabilities not at fair value through profit or loss	194	172
From trust and other fiduciary activities	4,478	4,834
Fee and commission expenses		
For financial assets and financial liabilities not at fair value through profit or loss	-198	-219
For trust and other fiduciary activities	-1,960	-2,076

» 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, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
INTEREST-LINKED CONTRACTS	**211,706**	**510,991**	**690,443**	**1,413,140**	**1,297,491**	**19,362**	**13,998**	**21,815**	**13,615**
OTC products									
Forward rate agreements	20,211	30	25	20,266	31,006	7	-	1	-
Interest-rate swaps	160,139	465,942	663,742	1,289,824	1,173,877	18,027	12,777	18,921	11,710
Interest-rate options – bought	12,097	19,309	10,302	41,708	35,546	1,074	844	118	86
Interest-rate options – written	14,315	24,641	16,373	55,330	46,339	248	251	2,624	1,794
Other interest-rate contracts	117	96	-	213	917	-	126	150	24
Exchange-traded products									
Interest-rate futures	4,827	972	-	5,799	9,800	7	-	2	-
Interest-rate options	-	-	-	-	6	-	-	-	-
CURRENCY-LINKED CONTRACTS	**148,047**	**29,990**	**8,626**	**186,663**	**142,093**	**3,168**	**1,495**	**3,193**	**1,757**
OTC products									
Cross-currency swaps (excl. portfolio hedging)	6,540	18,290	8,405	33,235	33,090	1,064	391	867	743
Forward forex transactions	117,149	9,222	204	126,574	94,105	1,909	1,011	2,156	944
Forex options – bought	11,115	618	-	11,733	5,973	52	27	65	19
Forex options – written	12,979	1,861	3	14,843	8,681	142	65	104	50
Exchange-traded products									
Forex futures	204	-	-	204	163	-	1	-	-
Forex options	60	-	14	74	81	-	-	1	1
SHARE-/INDEX-LINKED CONTRACTS	**18,720**	**12,677**	**1,902**	**33,299**	**33,603**	**599**	**900**	**1,920**	**1,578**
OTC products									
Share/index options – bought	2,359	19	19	2,396	3,009	8	44	-	-
Share/index options – written	340	313	-	653	538	-	-	52	22
Other share/index contracts	461	4,096	1,635	6,192	5,805	21	53	703	246
Exchange-traded products									
Share/index futures	1,638	72	-	1,711	1,257	1	-	10	-
Share/index options	13,923	8,177	248	22,348	22,994	570	802	1,154	1,311
OTHER CONTRACTS	**3,372**	**3,344**	**12,003**	**18,719**	**17,740**	**6**	**2**	**270**	**150**
OTC products									
Precious metal contracts (excl. gold derivatives)	1	-	-	1	1	-	-	-	-
Commodities contracts	-	10	23	33	-	2	-	-	-
Other contracts	3,122	3,334	11,944	18,400	17,521	1	1	262	141
Exchange-traded products									
Futures	101	-	-	101	81	1	1	-	1
Options	149	-	36	185	138	1	-	8	8
CREDIT DERIVATIVES	**3,135**	**9,645**	**3,741**	**16,521**	**17,614**	**187**	**380**	**107**	**82**
Protection buyer									
Credit default swaps	740	2,092	611	3,442	2,870	12	4	42	58
Protection seller									
Credit default swaps	2,391	7,532	3,123	13,046	14,702	174	377	64	23
Total return swaps	5	21	7	32	42	-	-	1	-
Total	**384,981**	**566,647**	**716,714**	**1,668,343**	**1,508,541**	**23,321**	**16,775**	**27,305**	**17,182**

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

	Fair value			
	Positive		Negative	
€ million	**Dec. 31, 2022**	Dec. 31, 2021	**Dec. 31, 2022**	Dec. 31, 2021
OECD central governments	**11**	45	**29**	106
OECD banks	**15,887**	13,753	**22,650**	14,480
OECD financial services institutions	**196**	228	**345**	237
Other companies, private individuals	**7,007**	2,715	**4,248**	2,256
Non-OECD banks	**219**	33	**33**	103
Total	**23,321**	**16,775**	**27,305**	**17,182**

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 €18,067 million (December 31, 2021: €17,157 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 €332 million (December 31, 2021: €363 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 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. Unexpected causes of hedge ineffectiveness may arise, primarily in the event of early (partial) termination of derivatives used for hedging or the unexpected sale or repayment of hedged items.

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, 2022

€ million	Carrying amount	Nominal amount of hedging instruments	Fair value hedge adjustments included in carrying amount of hedged items		Fair value changes as basis for measuring hedge ineffectiveness for the period
			Existing hedges	Terminated hedges	
Assets	**59,004**	**57,799**	**-5,196**	**-1,151**	**-1,416**
Loans and advances to banks	1		-	-	-
Loans and advances to customers	1,086		-279	66	-347
Investments	2,710		-215	11	-225
Portfolio hedges of interest-rate risk	53,637		-4,703	-1,228	-7,691
Hedging instruments (positive fair values)	1,568	57,799			6,848
Liabilities	**16,847**	**16,382**	**-587**	**-588**	**1,371**
Deposits from banks	83		-20	8	40
Deposits from customers	77		-20	11	147
Debt certificates issued including bonds	31		-10	4	18
Portfolio hedges of interest-rate risk	16,215		-537	-610	1,425
Hedging instruments (negative fair values)	442	16,382			-260

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€ million	Carrying amount	Nominal amount of hedging instruments	Fair value hedge adjustments included in carrying amount of hedged items		Fair value changes as basis for measuring hedge ineffectiveness for the period
			Existing hedges	Terminated hedges	
Assets	**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

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:

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	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years
Nominal amount (€ million)	318	1,427	4,940	38,254	29,242
Average hedged interest rate (%)	0.55	0.26	1.58	0.91	1.22

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

Reconciliation of hedge accounting effects to equity components by type of risk

Investments in foreign operations that had previously been designated as hedges of net investments in foreign operations were sold in 2021. Consequently, the negative reserve of €4 million from hedges of net investments in foreign operations that was still remaining after the hedging relationship ended was reclassified to the income statement.

» 87 Reform of interest-rate benchmarks

The German and European banking industry have carried out work to replace the existing interest-rate benchmarks with (nearly) 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. During a subsequent transition period, a synthetic (non-representative) USD Libor is to be published, giving more time for the amendment of contracts that have not yet been changed over. Until then, it can be used for existing business.

As it did in 2021, 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 hedging instruments that have not yet been switched over were pegged exclusively to USD Libor as at the balance sheet date. 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 will switch over these financial instruments over the course of 2023. 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:

	USD Libor 3M		CHF Libor 3M	
	Dec. 31, 2022	Dec. 31, 2021	**Dec. 31, 2022**	Dec. 31, 2021
Nominal amount (€ million)	3,117	1,985	-	97
Weighted average maturity (years)	8.6	6.5	-	0.5

Interest Rate Benchmark Reform – Phase 2 (Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4, and IFRS 16) is applied alongside the exceptions for phase 1. In the DZ BANK Group, the outstanding switch of USD Libor to SOFR is particularly significant. The transition phase before the replacement of the interest-rate benchmarks 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 discontinuation of the interest-rate benchmarks being replaced, 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 (nearly) risk-free interest-rate benchmarks in existing contracts. This may potentially lead to legal disputes.

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 had been 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. The DZ BANK Group has a specialist team that manages the scope and complexity of the changeover from USD Libor to SOFR. This team is putting the technical and process-related requirements in place and implementing the specific business changes. All relevant stakeholders are kept up to date on progress.

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 protocol for fallbacks for replacement of the ICE USD Libor swap rate, 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 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, 2022

€ million	Non-derivative financial assets	Non-derivative financial liabilities	Derivatives
USD Libor	3,420	438	93,523
Other	76	-	1,648

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	-	-

» 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 following chapters of the risk report in the group management report: VII.7 'Liquidity adequacy' and VII.9 'Credit risk', as well as VII.11 'Market risk' specifically for the Bank sector, and VII.17 'Actuarial risk' and VII.18 'Market risk' specifically 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 taken into account in the form of shift factors. The model-driven default probability profiles used in economic and regulatory risk management are adjusted on the basis of these shift factors (see the section 'Impact of macroeconomic conditions'). 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 as the ratio of the latest changes in the lifetime probability of default (lifetime PD) to the portfolio's past lifetime PD. Internal risk measurement systems, external credit ratings, and risk forecasts are also used to assess the credit risk of financial assets. The maximum value for these transfer thresholds is 200 percent.

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. These also have significantly increased credit risk and are assigned to stage 2, unless they need to be assigned to stage 3. 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, the low credit risk exemption means that these assets are transferred to stage 2 only if a qualitative transfer criterion applies or if a non-investment-grade credit rating is awarded. The low credit risk exemption applies to securities, loans and advances, loan commitments, and financial guarantee contracts.

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 ceases to apply and specified cure periods are taken into account.

Expected losses are calculated as the probability-weighted present value of the expected outstanding payments. In the case of transactions assigned to stage 1 of the impairment model, the analysis period is the next 12 months. For stage 2 transactions, the residual life is used. The expected losses are discounted with the original effective interest rate for the transaction and variable-rate assets with the current interest rate. The 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 parameters incorporate 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.

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 fully representative of future developments. In the retail consumer finance business, post-model adjustments were therefore carried out that had a total effect of €105 million as at December 31, 2021. The post-model adjustments were adapted to the changed circumstances as at the end of the first half of 2022. As the unique circumstances created by the COVID-19 pandemic have largely returned to normal and thus the associated uncertainty for the consumer finance business has dissipated, the related post-model adjustments were fully reversed in 2022. At the end of 2022, a new post-model adjustment was recognized owing to a procedural change to the replacement process in Germany. As a result of this change, loans are increasingly being issued in parallel (instead of internal replacement of existing loans and expansion of new loan volumes). This procedural change is distorting the lifetime risk measurement. The post-model adjustments in existence as at December 31, 2022 amounted to a total of €67 million.

Impact of macroeconomic conditions

The established models and processes for calculating expected losses on specific exposures or at portfolio level in line with IFRS 9 have generally been retained. The impact of the war in Ukraine is also examined at specific exposure level. Primary effects due to customer or supplier relationships and secondary effects such as rising energy prices are considered as part of impact analyses. These effects are factored into the calculation of specific loan loss allowances and, in a more nuanced manner, in the credit assessment and in decisions concerning inclusion in watchlists for the early identification of risk. At portfolio level, the forecast macroeconomic conditions are taken into account by adjusting the model-driven default probability profiles used in economic and regulatory risk management on the basis of shift factors.

The macroeconomic 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 and are based on economic forecasts provided by the Economic Roundtable, which is made up of representatives from the entities in the DZ BANK Group. The Economic Roundtable considers various scenarios when deciding on its macroeconomic forecasts. At a minimum, these scenarios must include a baseline scenario and a risk scenario that have a significant probability of occurrence in a relevant macroeconomic environment. The Economic Roundtable participants determine the probability of occurrence of the scenarios relative to each other.

The shift factors used as at December 31, 2022 are based on 2 macroeconomic scenarios developed by the Economic Roundtable of the DZ BANK Group in November 2022 (baseline scenario 80 percent and risk scenario 20 percent). The shift factors are then derived from macroeconomic inputs for various levels of default probability using stress test models that already existed or that were developed for IFRS 9. As is also the case when determining the measures of stress, the model shifts for some segments do not factor in the delayed impact of exogenous variables. The lag structure of the PD stress test models is removed in order to ensure that the macroeconomic developments set out in the scenario have a full and immediate effect in the first year of the scenario.

The risk parameters adjusted on the basis of the macroeconomic scenarios are then factored into the calculation of loss allowances.

The methods and assumptions, including the forecasts, are validated regularly.

The main macroeconomic forecasts for 2023 to 2026 used to calculate the expected loss as at December 31, 2022 were as follows:

		2023		2024		2025		2026	
		Baseline	Risk	Baseline	Risk	Baseline	Risk	Baseline	Risk
DAX 30, Germany	Index	14,120	11,120	15,110	12,790	15,710	13,300	16,340	13,830
EURO STOXX 50, European Monetary Union (EMU)	Index	3,850	3,010	4,120	3,460	4,290	3,600	4,460	3,750
Unemployment rate, Germany	%	3.40	3.60	3.30	3.40	3.20	3.20	3.00	3.00
Harmonized unemployment rates, EU	%	6.60	7.10	6.30	6.50	6.20	6.20	5.90	5.90
Real GDP growth, Germany (seasonally and calendar-adjusted)	Compared with prior year (%)	-2.00	-3.50	1.80	2.00	1.30	1.30	1.00	1.00
Real GDP growth, EU (seasonally and calendar-adjusted)	Compared with prior year (%)	-1.00	-2.50	2.00	2.00	1.50	1.50	1.30	1.30
Consumer price index, Germany	Compared with prior year (%)	6.50	10.00	3.00	7.00	2.00	5.00	2.00	3.50
Oil price (Brent), US$/bbl	At year-end	95	100	85	100	80	90	80	80
Natural gas price, US$/MMBtu	At year-end	7.50	8.50	6.00	7.00	6.00	6.00	5.50	6.00
Commercial real estate price index, Germany	Compared with prior year (%)	-8.00	-15.00	-2.00	-4.00	0.00	-1.00	0.00	0.00
3m Euribor, EMU	%	3.05	4.05	2.40	4.00	2.15	3.55	2.15	3.05
10-year government bonds, Germany	%	2.50	3.50	2.25	3.75	2.25	3.50	2.25	3.25

On the basis of consultation with relevant experts, the shift factors determined using statistical methods were overridden again in the fourth quarter of 2022 in order to better represent the currently critical market situation. 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 methodology for the process of overriding the model shift factors at group level was virtually unchanged compared with December 31, 2021. A crisis factor was added at sub-sector level, taking account of the degree to which the relevant sector is affected. This aspect includes all identifiable material increases in risk resulting from current developments and factors influencing the economy that have yet to be included in the credit rating. These factors specifically include the war in Ukraine, commodity shortages (particularly gas), supply chain difficulties, high inflation coupled with soaring energy prices, and the consideration of climate-related and environmental risks. Overall, additional loss allowances of €188 million were recognized as at December 31, 2022 due to the expert-led override of the shift factors determined using statistical methods.

The shifted lifetime PDs are then factored into the decision on stage assignment. An increase in the lifetime PDs resulting from the shift factors being overriden does not necessarily lead to a transfer to stage 2. Consequently, a second override was carried out for portfolios that were particularly affected. In contrast to the first override component, this second override component has resulted in a general stage 2 classification for all unimpaired exposures in the following sectors: automotive suppliers, hotels, department stores, shopping malls, inner-city commercial properties, building contractors, project developers, and office real estate. This decision reflects current macroeconomic developments, such as supply chain disruptions, high inflation, unavailability of materials, the shortage of skilled workers, the rise in interest rates, the gloomy economic outlook, persistently high energy prices, a changed competitor structure, and uncertainty about the spread of COVID-19, particularly during the winter months.

Since 2022, climate and environmental parameters have been included in the Economic Roundtable's scenario analysis. In the first instance, the focus is on carbon pricing, which is a factor in assessing macroeconomic variables. The scenarios devised by the Network for Greening the Financial System (NGFS), which show how climate change and action can affect key economic variables, are used in this context. In terms of the impact on macroeconomic variables, the Economic Roundtable's forecast table is based on the legal situation in Germany and the technical assumptions of the European Central Bank (ECB). The impact on macroeconomic variables has been minimal to date. The introduction of a carbon price should only have a minor to moderate increasing effect on the annual average rate of inflation in Germany and the eurozone. This price effect is already reflected in inflation rates. As the carbon price is not expected to rise significantly in either Germany or the eurozone in the next few years, the pressure on prices from climate parameters is expected to remain insignificant over the forecast period.

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

	Stage 1		Stage 2		Stage 3	
€ million	Loss allowances	Fair value	Loss allowances	Fair value	Loss allowances	Fair value
Balance as at Jan. 1, 2021	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
Addition/increase in loan drawdowns	7	22,807	-	166	-	-
Change to financial assets due to transfer between stages	1	-381	-1	372	-	9
Transfer from stage 1	-3	-1,877	3	1,873	-	5
Transfer from stage 2	4	1,496	-4	-1,500	-	5
Use of loss allowances/directly recognized impairment losses	-	-	-	-	-4	-4
Derecognitions and repayments	-10	-23,454	-6	-250	-	-8
Changes to models/risk parameters	-2	-	12	-	4	-
Additions	10	-	15	-	4	-
Reversals	-12	-	-3	-	-	-
Modifications	-	2	-	-	-	-
Modification gains	-	2	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-25,381	-	-172	-	-
Exchange differences and other changes	-	81	-	4	-	1
Balance as at Dec. 31, 2022	**24**	**95,034**	**8**	**795**	**25**	**32**

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, 2021	286	367,677	359	14,217	1,672	3,747	7	69
Restatements according to IAS 8	-	-	-	6	-	-	-	-
Balance restated as at Jan. 1, 2021	286	367,677	359	14,222	1,672	3,747	7	69
Addition/increase in loan drawdowns	170	15,652,720	81	29,837	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 non-current assets and 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**	**17,187**	**1,267**	**2,870**	**13**	**90**
Addition/increase in loan drawdowns	205	22,742,157	113	31,746	650	1,798	1	134
Change to financial assets due to transfer between stages	182	-23,064	-307	22,335	128	729	-	-
Transfer from stage 1	-69	-31,696	68	31,640	1	56	-	-
Transfer from stage 2	243	8,573	-397	-9,520	154	948	-	-
Transfer from stage 3	7	60	21	215	-27	-274	-	-
Use of loss allowances/directly recognized impairment losses	-	-1	-3	-	-318	-24	-4	-5
Derecognitions and repayments	-143	-22,707,324	-140	-33,280	-653	-2,694	-9	-111
Changes to models/risk parameters	-259	-	510	-	63	-	17	-
Additions	110	-	804	-	393	-	27	-
Reversals	-369	-	-294	-	-330	-	-10	-
Modifications	-	1	-	3	1	1	-	-
Modification gains	-	1	-	3	1	1	-	-
Amortization, fair value changes, and other changes in measurement	-	-639	-	-24	-	-34	-	-
Positive change in fair value of POCI assets	-	-	-	-	-	-	-	30
Exchange differences and other changes	-1	686	2	-16	46	70	1	5
Changes in the scope of consolidation	-	15	-	143	-	-	-	-
Addition of subsidiaries	-	15	-	143	-	-	-	-
Balance as at Dec. 31, 2022	**266**	**388,040**	**548**	**38,094**	**1,185**	**2,716**	**18**	**142**

The undiscounted expected credit losses on purchased or originated credit-impaired assets that were recognized for the first time during the reporting period totaled €181 million (2021: €120 million).

Non-current assets and disposal groups classified as held for sale that were previously recognized as financial assets measured at amortized cost

	Stage 1		Stage 2		Stage 3	
€ million	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount
Balance as at Jan. 1, 2021	-	4	-	-	-	-
Derecognitions and repayments	-	-4	-	-	-	-
Balance as at Dec. 31, 2021	**-**	**-**	**-**	**-**	**-**	**-**

Finance leases

	Stage 1		Stage 2		Stage 3	
€ million	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount
Balance as at Jan. 1, 2021	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
Addition/increase in loan drawdowns	3	151	5	7	14	2
Change to finance leases due to transfer between stages	-	-6	-1	6	-1	-
Transfer from stage 1	-1	-101	1	100	-	1
Transfer from stage 2	1	95	-2	-102	2	7
Transfer from stage 3	-	1	1	7	-3	-8
Derecognitions and repayments	-3	-258	-7	-77	-18	-11
Balance as at Dec. 31, 2022	**1**	**435**	**3**	**111**	**9**	**19**

Financial guarantee contracts and loan commitments

€ million	Stage 1		Stage 2		Stage 3		POCI assets	
	Loss allowances	Nominal amount	Loss allowances	Nominal amount	Loss allowances	Nominal amount	Loss allowances	Nominal amount
Balance as at Jan. 1, 2021	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
Addition/increase in loan drawdowns	83	105,380	69	7,101	68	342	5	8
Change to financial guarantee contracts and loan commitments due to transfer between stages	1	-3,947	-2	3,866	1	81	-	-
Transfer from stage 1	-9	-4,764	8	4,736	-	28	-	-
Transfer from stage 2	9	811	-11	-874	1	64	-	-
Transfer from stage 3	-	6	-	4	-1	-10	-	-
Derecognitions and repayments	-80	-100,024	-49	-6,466	-106	-450	-5	-9
Changes to models/risk parameters	-14	-	37	-	22	-	-1	-
Additions	23	-	70	-	64	-	2	-
Reversals	-37	-	-34	-	-42	-	-3	-
Amortization, fair value changes, and other changes in measurement	-	101	-	8	-	-3	-	-
Exchange differences and other changes	-	-214	-	240	-5	1	-	-
Balance as at Dec. 31, 2022	**53**	**80,472**	**95**	**7,903**	**89**	**242**	**-**	**2**

Contractual modifications and derecognitions

The negotiation or modification of contractually agreed cash flows relating to a financial asset leads to a modified asset.

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 in profit or loss as a modification gain or loss in the amount of the difference between the original gross carrying amount (taking account of any amortization or impairment) and the modified present value, calculated on the basis of the modified cash flows discounted with the original effective interest rate. If contractual modifications are credit-risk-related non-substantial contractual modifications, previously recognized loss allowances are used in the first instance. Any remaining difference is recognized under gains/losses from loss allowances. Gains/losses from market-related non-substantial contractual modifications are recognized as a modification gain or loss within net interest income.

If substantial modifications are made to the contract for a financial asset, the existing financial asset is derecognized and a new financial asset is recognized. These modifications are recognized in gains/losses from loss allowances. When the financial asset is derecognized, the previously recognized loss allowance is then used. The derecognition may potentially result in gains or losses on derecognition.

In 2022, contractually agreed cash flows from financial assets allocated to stage 2 or stage 3 of the impairment model were modified. The amortized costs of these financial assets amounted to €341 million

(2021: €636 million). The modifications resulted in a modification gain of €2 million (2021: modification loss of €2 million).

The gross carrying amount of financial assets whose contractually agreed cash flows were modified and that had been allocated to stage 2 or stage 3 in the impairment model since initial recognition but were transferred to stage 1 during the reporting period amounted to €124 million (2021: €36 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, 2022

€ million	Maximum exposure to credit risk	
FINANCIAL ASSETS MEASURED AT FAIR VALUE	162,547	
Financial assets measured at fair value through profit or loss	66,686	
Financial assets mandatorily measured at fair value through profit or loss	61,258	
Financial assets designated as at fair value through profit or loss	5,428	
Financial assets measured at fair value through other comprehensive income	95,861	
Financial assets mandatorily measured at fair value through other comprehensive income	95,861	
of which credit-impaired		
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	422,802	
of which credit-impaired		
FINANCE LEASES	552	
of which credit-impaired		
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	89,246	
of which credit-impaired		

AS AT DECEMBER 31, 2022

€ million	Maximum exposure to credit risk	
Non-current assets and disposal groups classified as held for sale from financial assets measured at fair value	19	

	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
	211	**-**	**12,372**	**372**	**3,356**	**932**
	146	**-**	**1**	**11**	**686**	**-**
	17	-	1	11	686	-
	129	-	-	-	-	-
	65	**-**	**12,371**	**361**	**2,670**	**932**
	65	-	12,371	361	2,670	932
	-	-	30	-	-	-
	7,700	**3,698**	**112,480**	**1,189**	**9,143**	**2,550**
	141	219	479	134	61	1
	5	**-**	**-**	**1**	**1**	**-**
	-	-	-	1	-	-
	178	**1,846**	**4,382**	**662**	**8**	**4**
	8	-	17	16	-	-

	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
	-	-	-	-	-	-

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	395,340	
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

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, 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 €40 million at the end of 2022 (December 31, 2021: €137 million). The cumulative gains/losses resulting from the change in fair values attributable to changes in credit risk amounted to a net loss of €24 million (December 31, 2021: net gain of €54 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 €101 million (December 31, 2021: €139 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, 2022

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Investment grade							
Fair value	Stage 1	43,547	23,122	12,770	10,045	2,013	115
	Stage 2	210	-	177	-	-	-
Gross carrying amount	Stage 1	221,793	14,823	48,128	59,847	6,019	-
	Stage 2	1,407	-	19,660	1,315	5,163	-
	POCI assets	-	-	5	-	-	-
Nominal amount	Stage 1	31,919	171	24,761	5,984	3,646	51
	Stage 2	30	-	4,082	6	60	-
Non-investment grade							
Fair value	Stage 1	-	789	557	874	-	-
	Stage 2	42	144	196	26	-	-
Gross carrying amount	Stage 1	1,705	134	9,504	13,270	20	-
	Stage 2	389	230	4,635	2,771	26	-
	Stage 3	-	-	-	9	-	-
Nominal amount	Stage 1	539	159	5,574	1,466	-	-
	Stage 2	161	336	2,770	72	57	-

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, 2022

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Default							
Fair value	Stage 3	15	-	8	9	-	-
Gross carrying amount	Stage 3	344	7	1,345	595	97	-
	POCI assets	-	-	77	-	-	-
Nominal amount	Stage 3	23	-	202	13	-	-
	POCI assets	-	-	2	-	-	-
Not rated							
Fair value	Stage 1	929	70	50	-	152	-
Gross carrying amount	Stage 1	2,047	181	2,625	8,274	106	-
	Stage 2	989	43	308	1,021	220	27
	Stage 3	-	-	6	333	-	-
	POCI assets	-	-	-	61	-	-
Nominal amount	Stage 1	1,301	-	1,871	3,011	20	-
	Stage 2	34	-	196	98	-	-
	Stage 3	-	-	3	1	-	-

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	840	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, 2022

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Investment grade						
Fair value	Stage 1	34,327	48,375	1,535	2,991	4,382
	Stage 2	229	158	-	-	-
Gross carrying amount	Stage 1	311,896	35,625	1,119	1,304	665
	Stage 2	25,774	1,701	70	-	-
	POCI assets	5	-	-	-	-
Nominal amount	Stage 1	57,751	8,101	177	501	-
	Stage 2	4,006	172	-	-	-
Non-investment grade						
Fair value	Stage 1	540	791	13	877	-
	Stage 2	145	164	-	100	-
Gross carrying amount	Stage 1	19,925	1,484	82	3,142	-
	Stage 2	6,349	701	95	906	-
	Stage 3	-	10	-	-	-
Nominal amount	Stage 1	5,899	576	179	1,084	-
	Stage 2	1,824	873	22	677	-

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, 2022

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Default						
Fair value	Stage 3	9	23	-	-	-
Gross carrying amount	Stage 3	1,723	274	66	324	-
	POCI assets	52	14	7	4	-
Nominal amount	Stage 3	201	-	2	35	-
	POCI assets	2	-	-	-	-
Not rated						
Fair value	Stage 1	76	1,125	-	-	-
Gross carrying amount	Stage 1	10,539	2,209	3	447	35
	Stage 2	1,754	772	7	77	-
	Stage 3	285	53	-	-	-
	POCI assets	56	5	-	-	-
Nominal amount	Stage 1	5,168	814	-	221	-
	Stage 2	317	11	-	-	-
	Stage 3	4	-	-	-	-

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	1,609	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	-	-	-	-

» 89 Maturity analysis

AS AT DECEMBER 31, 2022

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Financial assets	**151,134**	**17,417**	**44,675**	**173,742**	**257,423**	**23,967**
Cash and cash equivalents	93,405	-	-	-	-	-
Loans and advances to banks	17,129	5,566	14,031	43,786	48,092	-
Loans and advances to customers	22,276	7,210	19,375	80,322	97,506	20
Derivatives used for hedging (positive fair values)	-	6	150	880	666	-
Financial assets held for trading	13,550	2,840	4,685	9,631	17,602	1,179
of which non-derivative financial assets held for trading	13,195	1,815	2,854	3,049	5,343	1,179
of which derivatives (positive fair values)	355	1,025	1,831	6,582	12,260	-
Investments	1,466	987	3,663	20,504	19,673	2,670
Investments held by insurance companies	710	783	2,647	18,552	73,883	20,039
of which non-derivative investments held by insurance companies	680	705	2,453	18,390	73,721	20,037
of which derivatives (positive fair values)	31	78	193	162	161	2
Other assets	2,597	26	124	67	1	60
Financial liabilities	**-131,789**	**-24,744**	**-40,004**	**-121,503**	**-114,322**	**-71,163**
Deposits from banks	-64,436	-7,980	-16,613	-58,412	-40,475	-1,275
Deposits from customers	-59,912	-6,884	-6,778	-7,379	-15,525	-66,751
Debt certificates issued including bonds	-4,570	-7,773	-10,057	-31,879	-30,400	-
Derivatives used for hedging (negative fair values)	-5	-7	-81	-242	-134	-
Financial liabilities held for trading	-1,635	-1,615	-5,452	-21,437	-22,685	-425
of which non-derivative financial liabilities held for trading	-584	-754	-3,219	-13,912	-6,943	-425
of which derivatives (negative fair values)	-1,052	-861	-2,233	-7,525	-15,741	-
Other liabilities	-1,230	-447	-400	-913	-1,452	-2,686
of which non-derivative other liabilities	-946	-437	-380	-887	-1,361	-2,685
of which derivatives (negative fair values)	-284	-10	-20	-26	-91	-1
Subordinated capital	-1	-37	-622	-1,241	-3,651	-25
Financial guarantee contracts and loan commitments	**-81,837**	**-504**	**-432**	**-2,012**	**-12**	**-3,821**
Financial guarantee contracts	-10,402	-60	-3	-108	-4	-28
Loan commitments	-71,435	-444	-429	-1,904	-8	-3,793

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	**124,589**	**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	2,652	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

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 chapter VII.7.2.5 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	2022 New issues	2022 Repur-chases	2022 Repayments	2021 New issues	2021 Repur-chases	2021 Repayments
DEBT CERTIFICATES ISSUED INCLUDING BONDS	**43,753**	**-2,250**	**-36,388**	37,340	-3,973	-24,570
Bonds issued	**12,243**	**-2,235**	**-6,409**	12,958	-3,331	-5,714
Mortgage Pfandbriefe	3,808	-67	-2,119	4,741	-1	-2,474
Public-sector Pfandbriefe	-	-	-461	-	-10	-197
Other bonds	8,435	-2,169	-3,830	8,217	-3,320	-3,043
Other debt certificates issued	**31,510**	**-14**	**-29,978**	24,382	-642	-18,856
FINANCIAL LIABILITIES HELD FOR TRADING	**6,679**	**-1,961**	**-6,238**	9,690	-8,569	-1,178
SUBORDINATED CAPITAL	**1,320**	**-3**	**-143**	215	-353	-118
Total	**51,752**	**-4,214**	**-42,768**	**47,245**	**-12,895**	**-25,866**

The transactions shown under other debt certificates issued all relate to commercial paper. The transactions presented under financial liabilities held for trading are carried out using bonds issued, including share certificates, index-linked certificates, and other debt certificates. The transactions under subordinated capital are mainly carried out using subordinated bearer bonds.

F Other disclosures

» 91 Contingent liabilities

€ million	Dec. 31, 2022	Dec. 31, 2021
Contingent liabilities arising from contributions to the resolution fund for CRR credit institutions	137	111
Contingent liabilities in respect of litigation risk	4	22
Total	141	134

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.

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.

» 92 Financial guarantee contracts and loan commitments

€ million	Dec. 31, 2022	Dec. 31, 2021
Financial guarantee contracts	**10,606**	**9,750**
Loan guarantees	5,076	4,776
Letters of credit	781	965
Other guarantees and warranties	4,749	4,010
Loan commitments	**78,012**	**72,854**
Credit facilities to banks	27,579	24,900
Credit facilities to customers	38,481	37,326
Guarantee credits	1,144	1,059
Letters of credit	288	147
Global limits	10,520	9,422
Total	88,618	82,604

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, 2022	Dec. 31, 2021
Trust assets	**2,171**	**2,312**
Loans and advances to banks	2,095	2,049
Loans and advances to customers	9	10
Investments	67	252
Trust liabilities	**2,171**	**2,312**
Deposits from banks	1,957	2,031
Deposits from customers	214	281

Trust assets and trust liabilities each include trust loans amounting to €1,957 million (December 31, 2021: €2,031 million).

» 94 Business combinations

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, 2021: €155 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 cash-generating unit is, by definition, compared with the relevant recoverable amount. The carrying amount is equivalent to the equity attributable to the goodwill-bearing cash-generating unit. 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 the war in Ukraine and its fallout lead to a recession in the eurozone triggered by energy prices. The growth forecast has also been lowered for the United States. The eurozone is expected to slip into recession in the next 12 months, which will see very weak consumer spending owing to high inflation rates. This year and next year, the ECB is likely to take a tighter monetary policy line than previously anticipated. Higher interest rates and higher inflation rates are expected for the period 2024 to 2026 in Germany and the wider eurozone. A technical recession is predicted for the United States in the first half of 2023 in view of the Federal Reserve's aggressive monetary policy aimed at bringing down inflation from its elevated levels. However, a deeper recession is not expected. 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 (2021: 0.5 percent) for the UMH subgroup operating segment. 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 2022, which was determined on the basis of the capital asset pricing model, was 16.00 percent (2021: 13.38 percent).

There were no impairment losses in the reporting year. In 2021, there had been indications that the goodwill allocated to the TeamBank operating segment might be impaired. The subsequent impairment test had resulted in the recognition of an impairment loss of €2 million in respect of the goodwill.

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 arose 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 also active as a lessor. The companies in the VR Smart Finanz subgroup enter into leases with customers, for example 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, 2022	Dec. 31, 2021
Gross investment	**595**	**789**
Up to 1 year	225	314
More than 1 year and up to 2 years	149	207
More than 2 years and up to 3 years	93	125
More than 3 years and up to 4 years	65	68
More than 4 years and up to 5 years	32	40
More than 5 years	31	34
less unearned finance income	**-29**	**-37**
Net investment	565	752
less present value of unguaranteed residual values	**-17**	**-17**
Present value of minimum lease payment receivables	**548**	**735**

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 €2 million were recognized in 2022 (2021: €3 million). Losses on disposals amounted to €2 million (2021: €2 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, 2022	Dec. 31, 2021
Land and buildings	4,336	3,808
Office furniture and equipment	13	9
Total	**4,349**	**3,817**

Income from operating leases amounted to €290 million in the reporting year (2021: €268 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, 2022	Dec. 31, 2021
Total future minimum lease payments under non-cancelable leases	**1,366**	**1,107**
Up to 1 year	290	237
More than 1 year and up to 2 years	177	147
More than 2 years and up to 3 years	148	123
More than 3 years and up to 4 years	127	111
More than 4 years and up to 5 years	112	98
More than 5 years	510	391

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, bicycles, and workplace equipment. The lease terms are up to 7 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, 2021	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
Additions	83	14
Revaluation	96	4
Depreciation	-89	-19
Disposals	-10	-1
Changes attributable to currency translation	3	-
Carrying amounts as at Dec. 31, 2022	**655**	**31**

Lease liabilities of €717 million were recognized under other liabilities and insurance companies' other liabilities (December 31, 2021: €632 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, 2022**	Dec. 31, 2021
Up to 1 year	**94**	93
More than 1 year and up to 3 years	**181**	160
More than 3 years and up to 5 years	**162**	140
More than 5 years	**319**	257

The total cash outflows for lease liabilities in 2022 amounted to €157 million (2021: €140 million).

The following income and expenses have been recognized in the income statement for rights to use underlying assets in leases:

€ million	**2022**	2021
Expenses relating to short-term leases	**-1**	-2
Expenses relating to leases for low-value assets	**-22**	-20
Expenses relating to variable lease payments not included in the lease liability	**-11**	-8
Income from subleasing right-of-use assets	**13**	11
Gains and losses on sale and leaseback transactions	**-**	22

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 €540 million (2021: €446 million).

As at the reporting date, there were also future commitments amounting to €0 million (December 31, 2021: €1 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, 2021, most of these leases had been real estate leases for offices and ATM sites, for example.

In 2021, 2 sale-and-leaseback transactions had been entered into for business premises. The term of the sale-and-leaseback transactions is 8 years and the contracts include 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

2022

€ 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	45	-	-	
Other fee and commission income	88	-	98	
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	-	77	-	
Other operating income	49	-	9	
Total	**181**	**149**	**111**	
Main geographical markets				
Germany	172	136	111	
Rest of Europe	9	13	-	
Rest of World	-	-	-	
Total	**181**	**149**	**111**	
Type of revenue recognition				
At a point in time	159	12	111	
Over a period of time	23	137	-	
Total	**181**	**149**	**111**	

	UMH	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	Other/ Consolidation	**Total**
	3,470	498	-	219	-	-98	4,089
	23	-	-	325	-	-5	344
	-	269	-	2	-	61	332
	-	109	7	-	-	42	162
	-	69	5	-	-	-3	72
	-	13	-	-	-	-	13
	-	-	-	-	-	-	45
	-	62	11	3	4	-76	190
	-	-	-	-	-	-	73
	-	-	-	-	-	-	77
	12	-	-	-	-	31	102
	3,506	**1,020**	**23**	**550**	**4**	**-47**	**5,498**
	2,634	1,020	23	202	4	-64	4,240
	872	-	-	346	-	16	1,256
	-	-	-	2	-	-	2
	3,506	**1,020**	**23**	**550**	**4**	**-47**	**5,498**
	509	367	20	66	4	-54	1,195
	2,996	653	4	484	-	6	4,303
	3,506	**1,020**	**23**	**550**	**4**	**-47**	**5,498**

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	Other/ Consolidation	**Total**
	3,774	490	-	239	-	-93	**4,410**
	16	-	-	384	-	-6	**394**
	-	244	-	2	-	50	**295**
	-	82	7	-	-	35	**128**
	-	62	8	-	-	-3	**67**
	-	12	-	-	-	-	**12**
	-	-	-	-	-	-	**43**
	-	64	18	2	4	-143	**162**
	-	-	-	-	-	-	**73**
	-	-	-	-	-	-	**71**
	8	-	-	-	-	36	**53**
	3,799	**954**	**33**	**627**	**4**	**-125**	**5,708**
	2,906	954	33	258	4	-154	**4,408**
	893	-	-	365	-	29	**1,297**
	-	-	-	3	-	-	**3**
	3,799	**954**	**33**	**627**	**4**	**-125**	**5,708**
	559	343	29	165	4	-218	**1,162**
	3,239	611	4	462	-	93	**4,546**
	3,799	**954**	**33**	**627**	**4**	**-125**	**5,708**

In 2022, the DZ BANK Group recognized no revenue from contracts with customers that had been included in contract liabilities at the beginning of the year (2021: revenue of €3 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.

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, 2021	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	-
Additions	147	595	3,084	-
Derecognitions	-138	-602	-3,109	-
Other	-	-	3	-
Balance as at Dec. 31, 2022	**22**	**132**	**209**	**-**

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 participates in the program as part of a bidder group comprising DZ BANK, TeamBank, and DZ HYP. The bidder group's total volume of €11,000 million (December 31, 2021: €32,416 million) is recognized under deposits from banks on the balance sheet. The DZ BANK Group made a repayment amounting to €21,405 million ahead of schedule on November 23, 2022.

The basic interest rate in the period January 1, 2022 to June 23, 2022 was minus 0.5 percent. For the period from after June 23, 2022 to November 22, 2022, the interest rate to be applied was the average deposit facility rate for the period from the start of the relevant TLTRO III tranche to November 22, 2022. From November 23, 2022 until maturity or early repayment of the relevant outstanding TLTRO III tranche, the basic interest rate is pegged to the average deposit facility rate for this period. In this period, the calculation of the basic interest rate assumes that the tranches will be held to maturity. The basic interest rate was recognized in net interest income in an amount of €99 million (2021: €149 million).

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 net lending volume of the bidder group was higher than the required reference volume in the period October 1, 2020 to December 31, 2021, so a 0.5 percentage point lower interest rate applied in the period June 24, 2021 to June 23, 2022. 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 €78 million was recognized in net interest income in 2022 (2021: €183 million).

In addition to the TLTRO III program, government grants of €25 million were deducted from the carrying amount of investment property held by insurance companies (December 31, 2021: €23 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 (2021: €1 million).

» 98 Letters of comfort

DZ BANK has issued letters of comfort for its subsidiaries DZ PRIVATBANK S.A., DZ HYP, and Reisebank AG, Frankfurt am Main. Except in the event of political risk, DZ BANK has thus undertaken to ensure, in proportion to its shareholding, that these companies are able to meet their contractual obligations.

DZ BANK has also issued letters of comfort for Lodestone Parts (Malta) Ltd., Floriana, Malta, and Chiefs Aircraft Holding (Malta) Ltd., Floriana, Malta. Liability under the letter of comfort for Lodestone Parts (Malta) Ltd. exists only in connection with this company’s annual financial statements for 2021 and then only if its equity is negative; liability under the letter of comfort is limited to US$ 29,965. Liability under the letter of comfort for Chiefs Aircraft Holding (Malta) Ltd. exists only in connection with this company’s annual financial statements for 2014 to 2021 and then only if its equity is negative; liability under the letter of comfort is limited to US$ 4,061,125.

These entities are identified in the list of DZ BANK’s shareholdings (note 108) as being covered by a letter of comfort.

» 99 Employees

Average number of employees by employee group:

	2022	2021
Female employees	**15,160**	**14,705**
Full-time employees	9,292	9,152
Part-time employees	5,868	5,552
Male employees	**17,825**	**17,566**
Full-time employees	16,571	16,405
Part-time employees	1,254	1,160
Total	**32,985**	**32,271**

» 100 Provisions for defined benefit plans

The provisions for defined benefit plans, which are recognized under provisions and other liabilities (provisions for defined benefit plans of insurance companies), 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. The majority of new employees in Germany are offered defined contribution pension plans, for which it is not generally necessary to recognize a provision. The expense for defined contribution pension plans attributable to provisions and to other liabilities came to €19 million (2021: €21 million) and €18 million (2021: €25 million) respectively in 2022. 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, as can be seen from the table below.

Present value of defined benefit obligations

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

	Provisions		Other liabilities	
€ million	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Final-salary-dependent plans	**2,165**	2,812	**-**	-
Germany	2,071	2,676	-	-
Other countries	95	136	-	-
Defined benefit contributory plans	**952**	1,228	**1,497**	2,091
Germany	733	966	1,495	2,089
Other countries	219	262	2	2
Accessorial plans	**82**	77	**-**	-
Germany	82	77	-	-
Total	**3,199**	**4,117**	**1,497**	**2,091**

The level of market interest rates for investment-grade fixed-income corporate bonds is a significant risk factor for all plans because the discount rate determined from these rates significantly 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 lifelong 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. With the exception of the obligations managed through R+V Pensionsversicherung a.G., the contributions for most obligations are linked to remuneration. The majority of these plans are closed.

A considerable share of the volume is attributable to obligations managed through R+V Pensionsversicherung a.G., which have been treated as defined benefit pension plans since December 31, 2021. The phase of low interest rates, which prevailed until part way through 2022, and the related granting of initial fund loans by companies in the DZ BANK Group to R+V Pensionsversicherung a.G. in 2021 had necessitated a reassessment of the probability of drawdown by the pension providers on the basis of their subsidiary liability. Furthermore, a change to the accounting treatment had been required due to the rules of IDW AcP HFA 50 – IAS 19 – M1. If the value of the plan assets exceeds the present value of the defined benefit obligations, the notional surplus is not recognized as an asset and instead reduces the plan assets to the present value of the defined benefit obligations via the asset ceiling mechanism. This is because the plan assets cannot flow back to the extended initial fund's sponsor entities.

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.

Actuarial assumptions

The 2018 G mortality tables published by Professor Dr. Klaus Heubeck are used to estimate average life expectancy in the context of measuring defined benefit obligations in Germany. Outside Germany, the measurement of defined benefit obligations is based on the Pri-2012 Private Retirement Plans Mortality Table in the United States, the S3PMA LT for males and S3PFA for females in the United Kingdom, the mortality tables pursuant to BVG 2020 GT in Switzerland, and the Dutch Prognosis Table AG2022 in the Netherlands. The following actuarial assumptions are also used:

	Provisions		Other liabilities	
Percent	**Dec. 31, 2022**	Dec. 31, 2021	**Dec. 31, 2022**	Dec. 31, 2021
Weighted salary increases	2.16	1.85	2.50	2.25
Weighted pension increases	2.09	1.66	2.30	1.80

The uniform discount rate used was 3.70 percent (December 31, 2021: 1.10 percent).

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.

	Provisions		Other liabilities	
€ million	**Dec. 31, 2022**	Dec. 31, 2021	**Dec. 31, 2022**	Dec. 31, 2021
Change in the present value of defined benefit obligations as at balance sheet date if				
the discount rate were 50 basis points higher	-184	-278	-88	-161
the discount rate were 50 basis points lower	207	319	102	184
the future salary increase were 50 basis points higher	30	35	1	2
the future salary increase were 50 basis points lower	-30	-33	-1	-2
the future pension increase were 25 basis points higher	58	88	6	10
the future pension increase were 25 basis points lower	-55	-84	-6	-10
the life expectancy of a 65-year-old man were 1 year higher	114	152	39	63
the life expectancy of a 65-year-old man were 1 year lower	-104	-147	-41	-72

The duration of the defined benefit obligations as at December 31, 2022 was 12.45 years under provisions (December 31, 2021: 15.11 years) and 13.34 years under other liabilities (December 31, 2021: 13.89 years).

Plan assets

Defined benefit obligations are offset by plan assets. The changes in the funded status of the defined benefit obligations were as follows:

	Provisions		Other liabilities	
€ million	**Dec. 31, 2022**	Dec. 31, 2021	**Dec. 31, 2022**	Dec. 31, 2021
Present value of defined benefit obligations funded by plan assets	2,664	3,469	1,439	1,888
Present value of defined benefit obligations not funded by plan assets	535	647	58	203
Present value of defined benefit obligations	**3,199**	**4,117**	**1,497**	**2,091**
less fair value of plan assets	-2,352	-2,891	-1,653	-2,006
Asset ceiling	55	23	275	118
Defined benefit obligations (net)	903	1,248	119	203
Recognized surplus	19	3	-	-
Provisions for defined benefit obligations	**922**	**1,251**	**119**	**203**
Reimbursement rights recognized as assets	4	4	3	3

Of the plan assets under provisions, assets of €1,450 million (December 31, 2021: €1,886 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 plan assets under other liabilities consist of assets at pension providers and in reinsured pension schemes.

The asset ceiling equates almost entirely to the amount of the notional surplus, i.e. the amount by which the fair value of the plan assets exceeds the present value of the defined benefit obligations resulting from the pension obligations managed through R+V Pensionsversicherung a.G.

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

As at December 31, 2022

€ million	Provisions		Other liabilities	
	With quoted market price in an active market	Without quoted market price in an active market	With quoted market price in an active market	Without quoted market price in an active market
Cash and money market investments	-	55	-	-
Bonds and other fixed-income securities	1,109	-	-	-
Shares	150	-	-	-
Investment fund units	185	248	-	-
Other shareholdings	-	27	-	-
Derivatives	2	1	-	-
Land and buildings	-	5	-	-
Entitlements arising from insurance policies	-	152	-	223
Investments of R+V Pensionsversicherung a.G.	-	280	-	1,431
Other assets	-	138	-	-
Total	**1,446**	**906**	**-**	**1,653**

As at December 31, 2021

€ million	Provisions		Other liabilities	
	With quoted market price in an active market	Without quoted market price in an active market	With quoted market price in an active market	Without quoted market price in an active market
Cash and money market investments	-	46	-	-
Bonds and other fixed-income securities	1,466	-	-	-
Shares	183	-	-	-
Investment fund units	237	291	-	-
Other shareholdings	-	28	-	-
Derivatives	-1	-	-	-
Land and buildings	-	5	-	-
Entitlements arising from insurance policies	-	162	-	218
Investments of R+V Pensionsversicherung a.G.	-	348	-	1,788
Other assets	-	126	-	-
Total	**1,885**	**1,006**	**-**	**2,006**

The plan assets included under bonds and other fixed-income securities and under investments of R+V Pensionsversicherung a.G. – the latter had been included in other assets in 2021 – continue to be predominantly invested in bonds and other fixed-income securities. If market interest rates rise (as occurred in the year under review), the prices of the fixed-income assets fall; if the interest rates fall, the prices of the fixed-income assets rise. 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, 2022, the plan assets included €142 million of the group’s own, transferable financial instruments (December 31, 2021: €227 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, entitlements arising from insurance contracts, short-term investments, other shareholdings, and real estate assets.

Contributions to plan assets of €36 million under provisions (2022: €72 million) and €27 million under other liabilities (2022: €6 million) are expected for 2023.

Defined benefit obligations (net)

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

Provisions

€ million	Present value of defined benefit obligations	Fair value of plan assets	Asset ceiling	Defined benefit obligations (net)
Balance as at Jan. 1, 2021	3,856	-2,535	-	1,321
Current service cost	65	-	-	**65**
Interest income/expense	29	-19	-	**10**
Return on plan assets/reimbursement rights (excluding interest income)	-	-369	-	**-369**
Actuarial gains and losses due to changes in demographic assumptions	-3	-	-	**-3**
Actuarial gains (-)/losses (+) due to changes in financial assumptions	205	-	-	**205**
relating to the discount rate	-190	-	-	-190
relating to the annuity trend	69	-	-	69
other	326	-	-	326
Actuarial gains and losses arising from experience adjustments	66	-	-	**66**
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	23	**23**
Past service cost	-1	-	-	**-1**
Contributions from employers	-	-24	-	**-24**
Contributions from beneficiaries (employees)	6	-6	-	**-**
Pension benefits paid including plan settlements	-123	75	-	**-48**
ongoing	-119	72	-	-47
as part of plan settlements	-4	3	-	-1
Plan takeovers	4	-3	-	**1**
Reclassifications	-	-1	-	**-1**
Changes attributable to currency translation	12	-10	-	**2**
Balance as at Dec. 31, 2021	4,117	-2,891	23	1,248
Current service cost	66	-	-	**66**
Interest income/expense	45	-32	-	**14**
Return on plan assets/reimbursement rights (excluding interest income)	-	599	-	**599**
Actuarial gains and losses due to changes in demographic assumptions	-1	-	-	**-1**
Actuarial gains (-)/losses (+) due to changes in financial assumptions	-982	-	-	**-982**
relating to the salary trend	54	-	-	54
relating to the discount rate	-1,295	-	-	-1,295
relating to the annuity trend	176	-	-	176
other	83	-	-	83
Actuarial gains and losses arising from experience adjustments	21	-	-	**21**
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	32	**32**
Past service cost	3	-	-	**3**
Contributions from employers	-	-96	-	**-96**
Contributions from beneficiaries (employees)	8	-8	-	**-**
Pension benefits paid including plan settlements	-137	84	-	**-53**
ongoing	-136	82	-	-54
as part of plan settlements	-1	2	-	1
Plan takeovers	5	-6	-	**-**
Reclassifications	2	-	-	**2**
Changes attributable to currency translation	1	-2	-	**-1**
Acquisition/addition of subsidiaries	52	-	-	**52**
Balance as at Dec. 31, 2022	**3,199**	**-2,352**	**55**	**903**

Other liabilities

€ million	Present value of defined benefit obligations	Fair value of plan assets	Asset ceiling	Defined benefit obligations (net)
Balance as at Jan. 1, 2021	443	-217	-	226
Current service cost	6	-	-	**6**
Interest income/expense	3	-1	-	**2**
Return on plan assets/reimbursement rights (excluding interest income)	-	-1,790	-	**-1,790**
Actuarial gains (-)/losses (+) due to changes in financial assumptions	1,659	-	-	**1,659**
relating to the discount rate	-18	-	-	**-18**
relating to the annuity trend	8	-	-	**8**
other	1,669	-	-	**1,669**
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	118	**118**
Contributions from beneficiaries (employees)	1	-10	-	**-9**
Pension benefits paid including plan settlements	-21	12	-	**-9**
Balance as at Dec. 31, 2021	2,091	-2,006	118	203
Current service cost	44	-	-	**44**
Interest income/expense	23	-22	1	**2**
Return on plan assets/reimbursement rights (excluding interest income)	-	352	-	**352**
Actuarial gains (-)/losses (+) due to changes in financial assumptions	-652	-	-	**-652**
relating to the salary trend	1	-	-	**1**
relating to the discount rate	-673	-	-	**-673**
relating to the annuity trend	20	-	-	**20**
Actuarial gains and losses arising from experience adjustments	56	-	-	**56**
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	156	**156**
Contributions from beneficiaries (employees)	1	-34	-	**-33**
Pension benefits paid including plan settlements	-66	57	-	**-9**
Balance as at Dec. 31, 2022	**1,497**	**-1,653**	**275**	**119**

The transactions to be recognized in profit or loss are included in staff expenses.

The actuarial gains of €982 million to be recognized in other comprehensive income that were due to changes in the financial assumptions used to calculate the present value of the defined benefit obligations under provisions (2021: losses of €205 million) primarily resulted from the increase in the underlying discount rate to 3.70 percent as at December 31, 2022 (December 31, 2021: 1.10 percent). The majority of the financial assumptions relating to the annuity trend for the period since December 31, 2021 were changed to 2.30 percent as at December 31, 2022. The other changes in financial assumptions included losses of €80 million resulting from the one-off inflation-related and virtual increase in current pension entitlements of employees carried out by a number of group entities. The increases range from 5.5 percent to 9.9 percent. Their impact on the actual payment run will not materialize until the regular adjustment date. Furthermore, the majority of the financial assumptions relating to the salary trend for the period since December 31, 2021 were changed to 2.30 percent as at December 31, 2022.

The actuarial gains of €652 million to be recognized in other comprehensive income that were due to changes in the financial assumptions used to calculate the present value of the defined benefit obligations under other liabilities (2021: losses of €1,659 million) primarily resulted from the increase in the underlying discount rate to 3.70 percent as at December 31, 2022 (December 31, 2021: 1.10 percent). The financial assumption relating to the annuity trend for the period since December 31, 2021 was changed to 2.30 percent as at December 31, 2022. A one-off inflation-related and virtual increase in current pension entitlements of employees was not carried out because the effects were immaterial. The financial assumption relating to the salary trend for the period since December 31, 2021 was changed to 2.50 percent as at December 31, 2022.

Schwäbisch Hall Facility Management GmbH (SHF), Schwäbisch Hall Wohnen GmbH (SHW), and BAUFINEX GmbH, which are all companies based in the German town of Schwäbisch Hall, were included in the BSH sub-group’s financial statements for the first time in 2022. The present value of defined benefit obligations recognized under acquisition/addition of subsidiaries in an amount of €52 million is the result of the first-time consolidation of these 3 companies.

The change in the carrying amounts since December 2021 is largely attributable to the accounting treatment of the pension obligations managed through R+V Pensionsversicherung a.G. In 2021, actuarial losses due to changes in the financial assumptions amounting to €325 million under provisions and €1,670 million under other liabilities had arisen as a result of corresponding additions to the present value of the defined benefit obligations. The remeasurement effects recognized in other comprehensive income that are attributable to plan assets are shown under return on plan assets (excluding interest income). Of these total amounts in 2021, €348 million under provisions and €1,788 million under other liabilities had related to gains to be recognized in other comprehensive income resulting from the addition of plan assets for the pension obligations managed through R+V Pensionsversicherung a.G. The asset ceiling affected plan assets resulting from the initial recognition of the pension obligations managed through R+V Pensionsversicherung a.G. as defined benefit pension plans. In 2021, the change in the asset ceiling had resulted in losses to be recognized in other comprehensive income of €23 million under provisions and €118 million under other liabilities.

Multi-employer plans

Along with other financial institutions in Germany, entities of the DZ BANK Group 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 current employees and adding the employer contribution. The tariffs of the pension providers cover both fixed annuity payments with policyholder participation and capital payments. The member entities participate in a settlement class containing the actuarial risk of all pension beneficiaries. There are no agreements about the distribution of deficits or surpluses if the plan is wound up or if a member entity withdraws from the plan. As at December 31, 2022, the two BVV pension providers did not disclose any deficit or surplus. Each member entity is liable only for its own employment-law obligations in accordance with the insurance terms and conditions, benefit plans, and articles of association. The pension provider cannot allocate the assets in question and the defined benefit obligations relating to current and former employees to the individual member entities. The multi-employer defined benefit plans are therefore accounted for as if they were defined contribution plans in accordance with IAS 19.34. Of the 784 entities that are members of the BVV, 4 are DZ BANK Group entities. Approximately 0.6 percent of the current and former employees covered by the BVV are current or former employees of the DZ BANK Group.

Obligations with minimum funding requirements outside Germany

Measured using the present value of the defined benefit obligations, a volume of €301 million was attributable to plans outside Germany that are subject to minimum funding requirements (December 31, 2021: €381 million). Occupational pension provision in Luxembourg is governed by the Luxembourg Occupational Pensions Act of June 8, 1999 in its most recent version dated January 1, 2019. DZ PRIVATBANK S.A. and IPConcept (Luxemburg) S.A., Strassen, Luxembourg, have decided to manage occupational pension provision through a pension fund. The legally independent pension fund is subject to the Luxembourg Pension Fund Act of July 13, 2005. The pension plan at DZ BANK's London branch is bound by the funding rules of the United Kingdom's Pensions Regulator. The pension obligations for employees of DZ BANK's New York branch are governed by the minimum funding requirements pursuant to the US Employee Retirement Income Security Act (ERISA). The rules laid down by the Swiss Federal Law on Occupational Retirement, Survivors' and Disability Pension Plans (Swiss BVG) apply to DZ PRIVATBANK Schweiz and IPConcept (Schweiz) AG, Zurich, Switzerland.

» 101 Auditor fees

The total fees charged for 2022 by the independent auditors of the consolidated financial statements, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, and its affiliated companies can be broken down by type of service as follows:

€ million	2022	2021
Auditing services	12.6	12.2
Other attestation services	1.5	0.6
Tax consultancy services	-	0.2
Other services	0.4	1.0
Total	**14.5**	**13.9**

The fees for auditing services comprise expenses relating to the audit of the consolidated financial statements and group management report of DZ BANK as well as the audits of the annual financial statements and management reports of DZ BANK and consolidated subsidiaries carried out by the auditors of the consolidated financial statements. The fees for auditing services also comprise expenses relating to the review by the auditor of the condensed interim consolidated financial statements and interim group management report. The fees for other attestation services comprise the fees charged for the audit in accordance with section 89 of the German Securities Trading Act (WpHG) and for other audits for which the auditors' professional seal must or can be applied, mainly in connection with regulatory requirements. The fees for other services predominantly include fees for consultancy services.

» 102 Remuneration for the Board of Managing Directors and Supervisory Board of DZ BANK

In 2022, overall remuneration for DZ BANK's Board of Managing Directors from the group in accordance with IAS 24.17 amounted to €15.4 million (2021: €14.6 million). This total is broken down into short-term employee benefits of €10.2 million (2021: €9.1 million), post-employment benefits of €3.4 million (2021: €3.8 million), and share-based payments of €1.8 million (2021: €1.7 million). The remuneration for the Board of Managing Directors in 2022 and 2021 included the total bonus awarded to the Board of Managing Directors for the year in question. Supervisory Board remuneration amounted to €1.0 million (2021: €1.0 million) and consisted of payments due in the short term.

The remuneration for the Board of Managing Directors included contributions of €0.4 million (2021: €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 €27.8 million (December 31, 2021: €36.0 million).

In 2022, 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 €12.4 million (2021: €11.1 million), while the total remuneration for the Supervisory Board for the performance of these duties amounted to €1.0 million (2021: €1.0 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 €9.2 million in 2022 (2021: €9.9 million). DZ BANK has defined benefit obligations for former members of the Board of Managing Directors or their surviving dependants amounting to €131.0 million (2021: €177.0 million).

» 103 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, 2021	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
Remuneration granted	0.7	0.4
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.4	-0.1
Unpaid share-based payments as at Dec. 31, 2022	**1.9**	**0.5**

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, 2021	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
Remuneration granted	1.0	0.1
Payment of remuneration granted in previous years	-0.8	-0.1
Unpaid share-based payments as at Dec. 31, 2022	**2.9**	**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, 2021	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
Remuneration granted	0.5	0.1
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.2	-
Unpaid share-based payments as at Dec. 31, 2022	**1.4**	**0.2**

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. 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, 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, a value per share of €8.80 as at December 31, 2021, and a value per share of €9.05 as at December 31, 2022, 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, 2021	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
Remuneration granted	1.9	4.8
Payment of remuneration granted in 2021	-0.5	-3.2
Payment of remuneration granted in previous years	-1.0	-4.1
Unpaid share-based payments as at Dec. 31, 2022	**3.6**	**12.4**

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, 2021	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
Remuneration granted	0.4	0.1
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.3	-0.1
Unpaid share-based payments as at Dec. 31, 2022	**1.1**	**0.4**

DZ PRIVATBANK has entered into an agreement on variable remuneration components with the members of its Board of Managing Directors and risk takers. 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 7 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	Risk takers
Unpaid share-based payments as at Jan. 1, 2021	1.6	-
Remuneration granted	0.6	0.5
Payment of remuneration granted in 2020	-0.1	-0.1
Payment of remuneration granted in previous years	-0.3	-
Unpaid share-based payments as at Dec. 31, 2021	1.8	0.4
Remuneration granted	0.7	0.1
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.2	-0.1
Reduction of share-based payments	-0.2	-
Unpaid share-based payments as at Dec. 31, 2022	**2.0**	**0.4**

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, 2021	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
Remuneration granted	0.4
Payment of remuneration granted in 2021	-0.1
Payment of remuneration granted in previous years	-0.3
Reduction of share-based payments	-0.2
Unpaid share-based payments as at Dec. 31, 2022	**1.1**

If the variable remuneration granted to the Board of Managing Directors and risk takers at DVB exceeded €50,000 for a financial year, it was not paid out immediately and was instead subject to certain deferral periods and additional retention periods. The employee became entitled immediately (in the following year) to 40 percent of the granted variable remuneration. Only 50 percent of this amount was paid immediately; the remaining 50 percent was subject to an additional one-year retention period, during which it was pegged to the change in the DVB Bank Group's enterprise value. The remaining 60 percent of the variable remuneration was 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 was subject to an additional one-year retention period and was 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 had been 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 had been sold that was attributable to share-based payments was shown under disposal of share-based payments in 2021. The disposal of share-based payments in 2022 was due to the merger of DVB Bank SE into DZ BANK AG.

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, 2021	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
Remuneration granted	0.1	1.0
Payment of remuneration granted in 2021	-0.1	-0.2
Payment of remuneration granted in previous years	-	-0.4
Disposal of share-based payments	-0.4	-2.6
Unpaid share-based payments as at Dec. 31, 2022	**-**	**-**

In 2022, the agreements described above gave rise to expenses for share-based payment transactions in the DZ BANK Group of €11.6 million (2021: €10.3 million) and income from the reversal of provisions for share-based payments of €0.2 million (2021: €3.0 million). As at December 31, 2022, the provisions recognized for share-based payment transactions in the DZ BANK Group amounted to €54.4 million (December 31, 2021: €44.9 million).

» 104 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, 2022	Dec. 31, 2021
Loans and advances to banks	**24**	**22**
to joint ventures	24	22
Loans and advances to customers	**140**	**154**
to subsidiaries	44	43
to joint ventures	11	10
to associates	69	50
to pension plans for the benefit of employees	15	13
to other related parties (entities)	-	38
Financial assets held for trading	**2**	**-**
of other related parties (entities)	2	-
Investments	**11**	**5**
of subsidiaries	6	-
of joint ventures	5	5
Investments held by insurance companies	**210**	**200**
of subsidiaries	126	131
of pension plans for the benefit of employees	84	69
Other assets	**34**	**41**
of subsidiaries	28	22
of associates	1	1
of pension plans for the benefit of employees	5	18
Non-current assets and disposal groups classified as held for sale	**-**	**25**
of associates	-	25
Deposits from banks	**305**	**74**
owed to subsidiaries	7	-
owed to joint ventures	298	74
Deposits from customers	**184**	**219**
owed to subsidiaries	122	173
owed to associates	4	3
owed to other related parties (entities)	58	43
Financial liabilities held for trading	**5**	**6**
of other related parties (entities)	5	6
Other liabilities	**27**	**33**
of subsidiaries	20	23
of joint ventures	1	3
of pension plans for the benefit of employees	7	7
Subordinated capital	**23**	**19**
of pension plans for the benefit of employees	22	18
of other related parties (entities)	1	1

€ million	Dec. 31, 2022	Dec. 31, 2021
Financial guarantee contracts	**1**	**1**
for subsidiaries	-	1
Loan commitments	**926**	**743**
to subsidiaries	45	60
to joint ventures	250	10
to associates	1	2
to pension plans for the benefit of employees	630	672

Income of €15 million (2021: income of €6 million) in the total reported net interest income, expenses of €1 million (2021: expenses of €3 million) in the total reported net fee and commission income, and expenses of €56 million (2021: expenses of €14 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, 2022, the DZ BANK Group's loans and loan commitments to related parties (persons) amounted to €0.3 million (December 31, 2021: €0.5 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.

» 105 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

Souâd Benkredda
(Member of the Board of Managing Directors since September 1, 2022)
Responsibilities: Capital Markets Trading; Capital Markets Institutional Clients; Capital Markets Retail Clients; Group Treasury

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
(Member of the Board of Managing Directors until December 31, 2022)

Michael Speth
Responsibilities: Group Risk Controlling; Group Risk Management & Services; Credit

Thomas Ullrich
Responsibilities: Group Human Resources; Operations; Payments & Accounts; Transaction Management

» 106 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

Ingo Stockhausen
(Deputy Chairman of the Supervisory Board)
Chief Executive Officer
Volksbank Oberberg eG

Uwe Barth
Spokesman of the Board of Managing Directors
Volksbank Freiburg eG

Heiner Beckmann
Senior manager
Sales Director South-West
R+V Allgemeine Versicherung AG

Pia Erning
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank
(Member of the Supervisory Board since May 25, 2022)

Timm Häberle
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

Marija Kolak
President
Bundesverband der Deutschen Volksbanken
und Raiffeisenbanken e.V. (BVR)

Renate Mack
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank
(Member of the Supervisory Board until May 25, 2022)

Sascha Monschauer
Chief Executive Officer
Volksbank RheinAhrEifel eG

Wolfgang Nett
Sales Director
Union Investment Privatfonds GmbH

Rolf Dieter Pogacar
Employee
R+V Allgemeine Versicherung AG

Stephan Schack
Chief Executive Officer
Volksbank Raiffeisenbank eG, Itzehoe

Uwe Spitzbarth
Departmental coordinator
ver.di Bundesverwaltung (until July 31, 2022)
(Member of the Supervisory Board until December 31, 2022)

Sigrid Stenzel
Labor union secretary
Social security group
ver.di Niedersachsen-Bremen

Kevin Voß
Labor union secretary
Banking industry group
ver.di Bundesverwaltung
(Member of the Supervisory Board since January 1, 2023)

Dr. Gerhard Walther
Chief Executive Officer
VR-Bank Mittelfranken Mitte eG

Supervisory Board committees

Nominations Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Pia Erning, member since May 25, 2022*
Timm Häberle
Renate Mack, member until May 25, 2022*
Wolfgang Nett*
Ingo Stockhausen

Audit Committee
Timm Häberle, Chairman
Henning Deneke-Jöhrens
Pia Erning, member since May 25, 2022*
Dr. Peter Hanker
Andrea Hartmann*
Marija Kolak
Renate Mack, member until May 25, 2022*
Rolf Dieter Pogacar*
Stephan Schack
Ingo Stockhausen

Remuneration Control Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Pia Erning, member since May 25, 2022*
Dr. Peter Hanker
Renate Mack, member until May 25, 2022*
Wolfgang Nett*
Ingo Stockhausen

Risk Committee
Dr. Peter Hanker, Chairman
Heiner Beckmann*
Henning Deneke-Jöhrens
Timm Häberle
Andrea Hartmann, member since May 25, 2022*
Dr. Dierk Hirschel*
Renate Mack, member until May 25, 2022*
Sascha Monschauer
Ingo Stockhausen
Dr. Gerhard Walther

Mediation Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Dr. Dierk Hirschel, member since January 17, 2023*
Uwe Spitzbarth, member until December 31, 2022*
Ingo Stockhausen

*Employee representatives.

» 107 Supervisory mandates held by members of the Board of Managing Directors and employees

Within DZ BANK

As at December 31, 2022, 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
Souâd Benkredda	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board (since January 1, 2023)
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 Chairman 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 (Member until December 31, 2022)	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board (until December 31, 2022)
Michael Speth	BAG Bankaktiengesellschaft, Hamm Member 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 Member 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

Rolf Büscher	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, 2022, 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. Dirk Ottenbach Senior manager Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Facility Management GmbH, Schwäbisch Hall Member 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
	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
Dr. Klaus Endres Member of the Board of Managing Directors R+V Versicherung AG	R+V Direktversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board
	Securitas Holding GmbH, Berlin (*) Member of the Supervisory Board
	Sprint Sanierung GmbH, Cologne (*) Chairman 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
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 (*) 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
Sonja Albers Member of the Board of Managing Directors Union Asset Management Holding AG	Union Investment Institutional Property GmbH, Hamburg (*) Deputy Chairwoman of the Supervisory Board Union Investment Privatfonds GmbH, Frankfurt am Main (*) Deputy Chairwoman of the Supervisory Board Union Investment Service Bank AG, Frankfurt am Main (*) Chairwoman of the Supervisory Board
Dr. Frank Engels Member of the Board of Managing Directors Union Asset Management Holding AG	Quoniam Asset Management GmbH, Frankfurt am Main (*) Member of the Supervisory Board Union Investment Institutional Property GmbH, Hamburg (*) Deputy Chairman of the Supervisory Board

André Haagmann 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 Property GmbH, Hamburg (*) Chairman of the Supervisory Board Union Investment Real Estate GmbH, Hamburg (*) 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 (*) Deputy Chairman 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
Harald Rieger Member of the Board of Managing Directors Union Investment Institutional GmbH	Quoniam Asset Management GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board
Dr. Michael Bütter Chief Executive Officer Union Investment Real Estate GmbH	Union Investment Institutional Property GmbH, Hamburg (*) Member of the Supervisory Board
Jörg Kotzenbauer Chief Executive Officer ZBI GmbH	ZBI Fondsmanagement GmbH, Erlangen (*) Chairman of the Supervisory Board
Marco Knopp Member of the Board of Managing Directors ZBI GmbH	ZBI Fondsmanagement GmbH, Erlangen (*) Member of the Supervisory Board

» 108 List of shareholdings

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Alchemy Parts (Ireland) Limited i.L.	Dublin, Ireland	-		n/a	n/a
Alchemy Parts (Malta) Limited	Floriana, Malta	-		n/a	n/a
APZ Beteiligungs GmbH 1)	Darmstadt	88.50	100.00	6,047	1,104 *
APZ CarMotion GmbH 1)	Fischamend, Austria	100.00		778	33 *
APZ GmbH 1)	Darmstadt	100.00		7,135	- *
APZ Mobility GmbH 1)	Darmstadt	100.00		-	-275 *
APZ Smart Repair GmbH 1)	Munich	100.00		n/a	n/a
Arlanda Leasing Limited i.L.	Floriana, Malta	-		n/a	n/a
Assimoco S.p.A. 1)	Milan, Italy	68.94		279,535	18,767
Assimoco Vita S.p.A. 1)	Milan, Italy	82.14		302,343	17,323
Attrax Financial Services S.A. 1)	Senningerberg, Luxembourg	100.00		90,750	30,724
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		946	-28 *
BAUFINEX GmbH 1)	Schwäbisch Hall	70.00		781	-879
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	Frankfurt am Main	94.90		18,256	771 *
BWG Baugesellschaft Württembergischer Genossenschaften mbH 1)	Stuttgart	94.78		9,965	- *
carexpert Kfz-Sachverständigen GmbH 1)	Mainz	60.00		1,500	331 *
CHEMIE Pensionsfonds AG 1)	Wiesbaden	100.00		31,818	300
Chiefs Aircraft Holding (Malta) Limited 3)	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		3,013	-742 *
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		510	52 *
Condor Lebensversicherungs-Aktiengesellschaft 1)	Hamburg	94.98		51,742	- *
DCAL Aircraft Malta Ltd. i.L.	Floriana, Malta	-		-99	-15,219 *
Delfco Leasing (Malta) Limited	Floriana, Malta	-		n/a	n/a
Deucalion Capital II (MALTA) Limited	Valletta, Malta	-		20	17 *
Deucalion Capital II Limited	George Town, Cayman Islands	-		-609	1,463 *
Deucalion Capital VIII Limited	George Town, Cayman Islands	-		-74	-6,698 *
Deucalion Capital X Ltd.	George Town, Cayman Islands	-		n/a	n/a
Deucalion Ltd.	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
Dilax Beteiligungs Verwaltungsgesellschaft mbH 1)	Berlin	100.00		25	- *
Dilax Beteiligungsgesellschaft mbH & Co. KG 1)	Berlin	92.39		10,499	-161 *
Dilax France SAS 1)	Valence, France	100.00		759	200 *
Dilax Intelcom AG 1)	Ermatingen, Switzerland	100.00		471	156 *
Dilax Intelcom GmbH 1)	Berlin	97.01		3,865	-628 *
Dilax Intelcom Iberica S.L.U. 1)	Madrid, Spain	100.00		384	25 *
Dilax Management Investment Reserve GmbH 1)	Berlin	100.00		229	2 *
Dilax Management Investment Verwaltungsgesellschaft mbH 1)	Berlin	100.00		16	-1 *
Dilax Management Investmentgesellschaft mbH & Co. KG 1)	Berlin	99.50		172	-7 *
Dilax Systems Inc. 1)	Saint Lambert, Canada	100.00		982	194 *
Dilax Systems UK Ltd. 1)	London, UK	100.00		79	-297 *
DILAX Systems US Inc 1)	Wilmington, USA	100.00		19	7 *
DVB Asia Ltd. i.L.	Singapore, Singapore	100.00		23,995	111 *
DVB Bank America N.V. i.L.	Willemstad, Curaçao	100.00		147,140	62,086 *
DVB Fontainburg Aviation Capital Services Ltd (Cayman Islands)	Grand Cayman, Cayman Islands	-		n/a	n/a
DVB Transport Finance Limited	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		51	-
DZ BANK Kunststiftung gGmbH	Frankfurt am Main	100.00		13	-12 *
DZ BANK Sao Paulo Representacao Ltda. 2)	São Paulo, Brazil	100.00		340	4 *
DZ Beteiligungsgesellschaft mbH Nr. 11 4)	Frankfurt am Main	100.00		4,220	-
DZ Beteiligungsgesellschaft mbH Nr. 14 4)	Frankfurt am Main	100.00		51	-
DZ Beteiligungsgesellschaft mbH Nr. 18 4)	Frankfurt am Main	100.00		69,634	-
DZ Beteiligungsgesellschaft mbH Nr. 21 4)	Frankfurt am Main	100.00		25	-
DZ Beteiligungsgesellschaft mbH Nr. 22	Frankfurt am Main	100.00		14	-3 *
DZ Beteiligungsgesellschaft mbH Nr. 23 4)	Frankfurt am Main	100.00		25	-
DZ Beteiligungsgesellschaft mbH Nr. 24	Frankfurt am Main	100.00		13	-4 *
DZ CompliancePartner GmbH 4)	Neu-Isenburg	100.00		2,086	- *
DZ FINANCIAL MARKETS LLC	New York, USA	100.00		10,295	3,754 *
DZ Gesellschaft für Grundstücke und Beteiligungen mbH 4)	Frankfurt am Main	100.00		1,350	-
DZ HYP AG 3) 4)	Hamburg/Münster	96.42		1,762,331	-
DZ PRIVATBANK (Schweiz) AG 1)	Zurich, Switzerland	100.00		192,784	7,549
DZ PRIVATBANK S.A. 3)	Strassen, Luxembourg	91.78		1,168,122	79,441
DZ Versicherungsvermittlung Gesellschaft mbH 4)	Frankfurt am Main	100.00		51	- *
easymize GmbH 1)	Wiesbaden	100.00		960	-2,285 *
Englische Strasse 5 GmbH 1)	Wiesbaden	90.00		16,129	469 *
Evolit Consulting GmbH 1)	Vienna, Austria	100.00		3,010	2,828 *
Fischer Privatkunden Makler GmbH 1)	Herrenberg	90.00		n/a	n/a
FKS-NAVIGIUM GmbH 1)	Eschborn	100.00		-4,718	375
FPAC (Malta) Limited	Floriana, Malta	100.00		5	-3,499 *
Fundamenta Erteklanc Ingatlanközvetitö es Szolgaltato Kft. 1)	Budapest, Hungary	100.00		-1,395	-346
Fundamenta-Lakáskassza Lakás-takarékpénztár Zrt. 1)	Budapest, Hungary	51.25		158,065	13,838
Fundamenta-Lakáskassza Pénzügyi Közvetitö Kft. 1)	Budapest, Hungary	100.00		8,515	554
GAF Active Life 1 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	96.56		50,920	-528 *
GAF Active Life 2 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	95.03		69,437	-1,992 *
GENO Broker GmbH 4)	Frankfurt am Main	100.00		10,000	- *
Genoflex GmbH 1)	Nuremberg	70.00		839	-160 *
GMS Development - Gesellschaft für Softwareentwicklung m.b.H 1)	Paderborn	100.00		5,233	944 *
GMS Holding GmbH 1)	Paderborn	88.89	75.00	20,479	1,509 *
GMS Management und Service GmbH 1)	Nidderau	100.00		203	101 *
GWG 1. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		2,000	1,292 *
GWG 2. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		3,000	563 *
GWG 3. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		7,000	1,684 *
GWG 4. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		9,000	1,369 *
GWG Beteiligungsgesellschaft mbH 1)	Stuttgart	100.00		29	1 *
GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG 1)	Stuttgart	91.57		387,218	14,962
GWG Hausbau GmbH 1)	Stuttgart	94.48		2,750	- *
GWG ImmoInvest GmbH 1)	Stuttgart	94.90		12,263	1,101 *
GWG Wohnpark Sendling GmbH 1)	Stuttgart	94.00		4,028	- *
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		481	201 *
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		53	18 *
IMPETUS Bietergesellschaft mbH 4)	Düsseldorf	100.00		42,708	-
INFINDO Development GmbH 1)	Düsseldorf	100.00		92,076	1,657
IPConcept (Luxemburg) S.A. 1)	Strassen, Luxembourg	100.00		20,487	10,407
IPConcept (Schweiz) AG 1)	Zurich, Switzerland	100.00		7,308	531
KBIH Beteiligungsgesellschaft für Industrie und Handel mbH	Frankfurt am Main	100.00		35,712	387 *
KRAVAG Umweltschutz und Sicherheitstechnik GmbH 1)	Hamburg	100.00		586	192 *
KRAVAG-ALLGEMEINE Versicherungs-Aktiengesellschaft 1)	Hamburg	100.00		74,115	3,209
KRAVAG-LOGISTIC Versicherungs-Aktiengesellschaft 1)	Hamburg	51.00		255,480	6,959
KV MSN 27602 Aircraft Ltd. i.L.	Dublin, Ireland	-		-	- *
Lantana Aircraft Leasing Limited i.L.	Floriana, Malta	-		-176	2,916 *
Lodestone Parts (Ireland) Ltd. i.L.	Dublin, Ireland	-		n/a	n/a
Lodestone Parts (Malta) Ltd. 3)	Floriana, Malta	-		n/a	n/a
Lodestone Parts 2 (Ireland) Limited i.L.	Dublin, Ireland	-		n/a	n/a
MD Aviation Capital Pte. Ltd.	Singapore, Singapore	100.00		-19,705	14 *
MDAC 1 Pte Ltd. i.L.	Singapore, Singapore	100.00		1,378	-119 *
MDAC 3 Pte Ltd. i.L.	Singapore, Singapore	100.00		23	-192 *
MDAC 6 Pte Ltd.	Singapore, Singapore	100.00		-241	-549 *

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
MDAC 9 Pte Ltd. i.L.	Singapore, Singapore	100.00		-114	-54 *
MDAC Malta Ltd. i.L.	Floriana, Malta	-		10,599	-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)	Wiesbaden	100.00		108,925	1,659
MSN1164 Freighter Ltd. i.L.	Dublin, Ireland	-		-	- *
MSU Management-, Service- und Unternehmensberatung GmbH 1)	Landau in der Pfalz	60.00		925	106 *
NTK Immobilien GmbH 1)	Hamburg	100.00		44	- *
NTK Immobilien GmbH & Co. Management KG 1)	Hamburg	100.00		1,008	- *
Okoye Beteiligungsverwaltungs GmbH 1)	Vienna, Austria	80.00		9,520	1,526 *
Pascon GmbH 1)	Wiesbaden	100.00		42	3 *
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		6,069	-
PW 4168 Engine Solutions (Ireland) Ltd i.L.	Dublin, Ireland	-		-21	1 *
PW 4168 Solutions (Malta) Ltd.	Floriana, Malta	-		-21	1 *
Quoniam Asset Management GmbH 1)	Frankfurt am Main	95.31	100.00	21,061	5,215
R+V AIFM S.à.r.l. 1)	Munsbach, Luxembourg	100.00		1,004	183 *
R+V Allgemeine Versicherung Aktiengesellschaft 1) 4)	Wiesbaden	95.00		1,024,175	-
R+V Deutschland Real (RDR) 1)	Hamburg	-		n/a	n/a
R+V Dienstleistungs GmbH 1)	Wiesbaden	100.00		694	35 *
R+V Direktversicherung AG 1) 4)	Wiesbaden	100.00		13,320	- *
R+V INTERNATIONAL BUSINESS SERVICES Ltd., Dublin 1)	Dublin, Ireland	100.00		n/a	n/a
R+V KOMPOSIT Holding GmbH 1) 4)	Wiesbaden	100.00		2,074,733	-
R+V Krankenversicherung AG 1)	Wiesbaden	100.00		168,485	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		38,803	1,630
R+V Pensionskasse AG 1)	Wiesbaden	100.00		107,478	-6,555
R+V Personen Holding GmbH 1)	Wiesbaden	100.00		1,230,426	105,903
R+V Rechtsschutz-Schadenregulierungs-GmbH 1)	Wiesbaden	100.00		329	51 *
R+V Service Center GmbH 1) 4)	Wiesbaden	100.00		2,869	- *
R+V Service Holding GmbH 1) 4)	Wiesbaden	100.00		204,236	-
R+V Treuhand GmbH 1)	Wiesbaden	100.00		58	7 *
R+V Versicherung AG 4)	Wiesbaden	92.28		2,397,253	-
RC II S.a.r.l. 1)	Munsbach, Luxembourg	90.00		8,982	124 *
Reisebank AG 1) 3)	Frankfurt am Main	100.00		19,267	10,148
RUV Agenturberatungs GmbH 1)	Wiesbaden	100.00		353	86 *
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		530,249	7,974 *
RV AIP S.C.S. SICAV-SIF – RV TF 6 Infra Debt II 1)	Luxembourg, Luxembourg	94.40		108,287	124 *
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		187,023	6,268 *
RV AIP S.C.S. SICAV-SIF – TF 3 Primaries 1)	Luxembourg, Luxembourg	99.25		5,682	-318 *
RV AIP S.C.S. SICAV-SIF – TF 4 Secondaries 1)	Luxembourg, Luxembourg	99.25		10,022	-129 *
RV AIP S.C.S. SICAV-SIF – TF 5 Co-Investments 1)	Luxembourg, Luxembourg	99.25		23,667	-166 *
RV Securitisation I S.à.r.l. 1)	Senningerberg, Luxembourg	100.00		12	- *
RV Securitisation I S.à.r.l. - Aviation Opportunities I 1)	Senningerberg, Luxembourg	-		n/a	n/a
RVL Grundstücks GmbH & Co. KG 1)	Frankfurt am Main	100.00		393,010	-
RVL Grundstücksverwaltung GmbH 1)	Wiesbaden	100.00		n/a	n/a
S2 Shipping and Offshore Ptd Ltd. i.L.	Singapore, Singapore	100.00		-	-6,516 *
Schwäbisch Hall Facility Management GmbH 1)	Schwäbisch Hall	100.00		4,329	-919
Schwäbisch Hall Kreditservice GmbH 1) 4)	Schwäbisch Hall	100.00		18,775	-
Schwäbisch Hall Transformation GmbH 1)	Schwäbisch Hall	100.00		3,187	-1,133
Schwäbisch Hall Wohnen GmbH 1)	Schwäbisch Hall	100.00		1,425	-1,878
Shipping and Intermodal Investment Management Fund I LLC	Majuro, Marshall Islands	-		-7,785	-4,266 *

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Sprint Italia S.r.l. 1)	Bolzano, Italy	51.00		261	-56 *
Sprint Sanierung GmbH 1)	Cologne	100.00		26,754	1,372 *
Taiping Fontainburg DVB Aviation Capital L.P. i.L.	Grand Cayman, Cayman Islands	-		n/a	n/a
TeamBank AG Nürnberg 2) 4)	Nuremberg	92.60		539,699	-
Twenty Holding Private Limited	Singapore, Singapore	-		-	- *
UI Infrastruktur Management SARL 1)	Senningerberg, Luxembourg	100.00		45	8
UI Management S.a.r.l. 1)	Senningerberg, Luxembourg	100.00		16	1 *
UI Private Debt Management S.à r.l. 1)	Senningerberg, Luxembourg	100.00		12	- *
UI Vario: 2 issued by Union Investment Luxembourg S.A. 1)	Senningerberg, Luxembourg	-		n/a	n/a
UII Anzinger Strasse 29 Verwaltung LP GmbH 1)	Hamburg	100.00		41	15
UII Issy 3 Moulins SARL 1)	Paris, France	100.00		6	-1 *
UII MS Immobilien GP GmbH 1)	Hamburg	100.00		30	4
UII MS Immobilien Verwaltung LP GmbH 1)	Hamburg	100.00		40	13
UII PSD KN ImmoInvest GP GmbH 1)	Hamburg	100.00		135	26
UII SCE Management GP GmbH 1)	Hamburg	100.00		92	14
UII Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		23	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. 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
UIN-Fonds Nr. 1086 1)	Frankfurt am Main	-		n/a	n/a
UIR Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		85	-6
UIW Austria Verwaltungs GmbH 1)	Erlangen	100.00		23	-2 *
UMB Unternehmens-Managementberatungs GmbH 1)	Wiesbaden	100.00		5,112	1,359 *
Union Asset Management Holding AG 2)	Frankfurt am Main	96.59		1,693,990	321,427
Union Investment Austria GmbH 1)	Vienna, Austria	100.00		19,090	2,135
Union Investment Institutional GmbH 1)	Frankfurt am Main	100.00		103,970	-
Union Investment Institutional Property GmbH 1)	Hamburg	90.00		44,882	16,020
Union Investment Luxembourg S.A. 1)	Senningerberg, Luxembourg	100.00		389,343	128,905
Union Investment Privatfonds GmbH 1)	Frankfurt am Main	100.00		980,942	-
Union Investment Real Estate Asia Pacific Pte. Ltd. 1)	Singapore, Singapore	100.00		883	-46 *
Union Investment Real Estate Austria AG 1)	Vienna, Austria	94.50		9,517	1,446
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		3,358	1,301 *
Union Investment Real Estate GmbH 2)	Hamburg	94.50		190,289	55,812
Union Investment Service Bank AG 1)	Frankfurt am Main	100.00		113,115	-
Union IT-Services GmbH 1) 5)	Frankfurt am Main	100.00		5,110	-2,524
Union Service-Gesellschaft mbH 1) 5)	Frankfurt am Main	100.00		11,155	-1,505
Unterstützungskasse der Condor Versicherungsgesellschaften GmbH 1)	Hamburg	66.67		26	- *
URA Verwaltung GmbH 1)	Vienna, Austria	100.00		32	-5
VisualVest GmbH 1)	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		5,182	-15 *
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	-
VR Factoring GmbH 4)	Eschborn	100.00		39,385	-
VR GbR 2)	Frankfurt am Main	100.00		205,107	60,140
VR HYP GmbH 1)	Hamburg	100.00		25	- *
VR Kreditservice GmbH 1) 4)	Hamburg	100.00		25	-
VR Makler GmbH 1)	Hannover	100.00		135	-1,983 *
VR Mittelstandskapital Unternehmensbeteiligungs GmbH 2)	Düsseldorf	100.00		7,855	827 *
VR Payment GmbH	Frankfurt am Main	90.00		57,392	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	-

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
VR Smart Guide GmbH 1)	Eschborn	100.00		1,135	-4,647
VR WERT Gesellschaft für Immobilienbewertung mbH 1) 4)	Hamburg	100.00		50	- *
VR-Leasing Beteiligungs GmbH 1)	Eschborn	100.00		98,637	-6
WBS Wohnwirtschaftliche Baubetreuungs- und Servicegesellschaft mbH 1)	Stuttgart	94.90		26,308	2,430
Zaventem Leasing (Ireland) Limited i.L.	Dublin, Ireland	-		n/a	n/a
ZBI Beteiligungs GmbH 1)	Erlangen	100.00		25	-21 *
ZBI Fondsmanagement GmbH 1)	Erlangen	100.00		8,133	-
ZBI Fondsverwaltungs GmbH 1)	Erlangen	100.00		2,554	5,454
ZBI GmbH 1)	Erlangen	94.90		14,662	5,297
ZBI Immobilienmanagement GmbH 1)	Erlangen	100.00		11,913	-
ZBI Professional Fondsverwaltungs GmbH 1)	Erlangen	100.00		208	358 *
ZBI Regiofonds Wohnen GF GmbH 1)	Erlangen	100.00		7	- *
ZBI Regiofonds Wohnen GmbH 1)	Erlangen	100.00		15	2 *
ZBI Vertriebskoordinations GmbH i.L. 1)	Erlangen	100.00		27	-11
ZBI Vorsorge - Plan Wohnen GF GmbH 1)	Erlangen	100.00		22	2 *
ZBI Vorsorge - Plan Wohnen GmbH 1)	Erlangen	100.00		22	1 *
ZBI Wohnen Plus Verwaltungs GmbH 1)	Erlangen	100.00		21	- *
ZBI WohnWert Verwaltungs GmbH 1)	Erlangen	100.00		16	- *
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		8,818	1,159 *
BEA Union Investment Management Limited 1)	Hong Kong, Hong Kong	49.00		61,415	10,990 *
Deutsche WertpapierService Bank AG	Frankfurt am Main	50.00		284,886	1,478
DZ BANK Galerie im Städel Kunstverwaltungsgesellschaft mbH	Frankfurt am Main	50.00		18	-4 *
Norafin Verwaltungs GmbH 1)	Mildenau	44.72	45.63	25,780	995 *
PolarXpress SCS 1)	Wasserbillig, Luxembourg	58.82		n/a	n/a
Prvá stavebná sporitel'na, a.s. 1)	Bratislava, Slovakia	32.50		291,197	6,585
R+V Kureck Immobilien GmbH Grundstücksverwaltung Braunschweig 1)	Wiesbaden	50.00		6,743	-67 *
Trustlog GmbH 1)	Hamburg	50.00		n/a	n/a
Versicherungs-Vermittlungsgesellschaft des Sächsischen Landesbauernverbandes mbH 1)	Dresden	50.00		215	2 *
Versicherungs-Vermittlungsgesellschaft mbH des Bauernverbandes Mecklenburg-Vorpommern e.V. (VVB) 1)	Neubrandenburg	50.00		282	51 *
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Brandenburg (VVB) 1)	Teltow	50.00		26	4 *
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Sachsen-Anhalt e.V. (VVB) 1)	Magdeburg	50.00		74	4 *
Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse) Ltd. 1)	Tianjin, China	24.90		404,049	10,290

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		30	1 *
aku.beteiligung GmbH 1)	Aalen	46.04		7,711	389 *
axytos Finance Holding GmbH 1)	Langen	25.12		43	-6 *
Bankenkonsortium der Zenit GmbH, GbR	Düsseldorf	33.30		-	- *
bbv-service Versicherungsmakler GmbH 1)	Munich	25.20		2,398	407 *
Berlin-AI Management S.à r.l. 1)	Luxembourg, Luxembourg	20.00		7	2
Blitz SKB GmbH 1)	Giessen	41.76		n/a	n/a
Bookwire Holding GmbH 1)	Frankfurt am Main	49.00		14,951	1,508 *
Cygna Labs Group GmbH 1)	Heilbronn	26.03		8,355	-303 *
DeSign Verbund GmbH 1)	Hochstadt am Main	49.80		1,520	-735 *
DITTRICH + CO Holding GmbH 1)	Frankfurt am Main	49.85		9,949	-17 *
Dr. Förster Holding GmbH 1)	Neu-Isenburg	20.06		-	-1,973 *
Erwerbergesellschaft 2022 I GmbH 1)	Frankfurt am Main	50.29	49.90	n/a	n/a
European Convenience Food GmbH 1)	Garrel	41.16	41.52	18,199	96 *
GBS Beteiligungsgesellschaft mbH 1)	Bayreuth	42.33		7,812	486 *
GHM MPP Reserve GmbH 1)	Remscheid	50.00		343	-2 *
GHM MPP Verwaltungs GmbH 1)	Remscheid	50.00		22	- *
Glas Strack Holding GmbH 1)	Bochum	51.06	49.90	n/a	n/a
Goldeck Zetti Beteiligungsgesellschaft mbH 1)	Leipzig	39.23		34,151	2,402 *
Groneweg Verwaltungsgesellschaft mbH 1)	Greven	49.00		20,347	602 *
Impleco GmbH 1)	Berlin	50.00		3,914	-2,617
Informatik Consulting Systems Holding GmbH 1)	Stuttgart	49.83	49.43	8,655	-231 *
Kapitalbeteiligungsgesellschaft für die mittelständische Wirtschaft in Nordrhein-Westfalen mbH - KBG -	Neuss	23.60		5,666	336 *
KTP Holding GmbH 1)	Bous	37.36		45,214	3,630 *
Kunststoffpartner Verwaltung GmbH 1)	Frankfurt am Main	49.00		n/a	n/a
Ostertag DeTeWe Group GmbH 1)	Walddorfhäslach	58.52	49.90	9	-51 *
payfree GmbH 1)	Düsseldorf	60.00		2,694	-831 *
Pesca Management GmbH 1)	Munich	49.30		13,391	-19 *
Solectrix Holding GmbH 1)	Fürth	49.90		10,425	-46 *
Treuhand- und Finanzierungsgesellschaft für Wohnungs- und Bauwirtschaft mit beschränkter Haftung. Treufinanz	Düsseldorf	33.14		1,434	-193 *
Votronic Elektronik-Systeme GmbH 1)	Lauterbach	49.80		4,713	2,131 *
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
amberra GmbH 2)	Berlin	20.00		n/a	n/a
Ares Infrastructure Debt Fund IV (EUR), L.P. 1)	Luxembourg, Luxembourg	39.84		468,409	31,709 *
Ares Infrastructure Debt Fund V (EUR), L.P. 1)	Luxembourg, Luxembourg	82.14		91,908	3,887 *
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 *
BREDS IV Aggregator SCSp 1)	Luxembourg, Luxembourg	90.91		119,711	7,682 *
Burghofspiele GmbH 1)	Eltville	20.00		-	-21 *
Bürgschaftsbank Brandenburg GmbH	Potsdam	25.31		34,206	2,105 *
Bürgschaftsbank Mecklenburg-Vorpommern GmbH	Schwerin	30.38		17,352	267 *
Bürgschaftsbank Sachsen-Anhalt GmbH	Magdeburg	29.73		17,000	423 *
Bürgschaftsbank Thüringen GmbH	Erfurt	22.13		27,524	240 *
Cheyne Real Estate Credit (CRECH) Fund IV Loans SCS SICAV-SIF 1)	Luxembourg, Luxembourg	20.83		366,933	-8,807 *
Cheyne Real Estate Credit Holdings VII 1)	Luxembourg, Luxembourg	21.56		401,935	1,296 *
CMMT Partners L.P. 1)	Camden, USA	47.07		815,845	53,796 *
Credit Suisse Global Infrastructure SCA SICAR 1)	Luxembourg, Luxembourg	30.09		8,612	-100 *
DigitalBridge II Foreign Feeder-MV, SCSp 1)	Luxembourg, Luxembourg	68.10		3,372,756	-87,446 *
EIG Global Project Fund V-A, L.P. 1)	Wilmington, USA	51.28		80,017	4,428 *
Evolit Slovakia s.r.o. 1)	Poprad, Slovakia	75.00		n/a	n/a
Finatem II GmbH & Co. KG 1)	Frankfurt am Main	20.20		3,595	-9,241 *
FREUNDE DER EINTRACHT FRANKFURT Aktiengesellschaft 1)	Frankfurt am Main	32.05	19.84	7,644	3,024 *
GENOPACE GmbH 1) 5)	Berlin	27.49		200	- *
Global Energy & Power Infrastructure Fund III E, SCSp 1)	Luxembourg, Luxembourg	35.34		121,901	9,883 *
Global Infrastructure Partners III-C2, L.P. 1)	New York, USA	27.97		524,421	104,476 *
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		233,613	-26,664 *
Hudson Chemical Tankers Ltd	Middlesex, UK	25.00		-	- *
ICG Infrastructure Equity Fund I SCSp 1)	Senningerberg, Luxembourg	24.54		n/a	n/a
KKR Global Impact Fund II EEA Feeder SCSp 1)	Luxembourg, Luxembourg	95.33		n/a	n/a
KKR North America Fund XIII EEA Feeder SCSp 1)	Luxembourg, Luxembourg	95.43		-595	-595 *
Kreditgarantiegemeinschaft in Baden-Württemberg Verwaltungs-GmbH	Stuttgart	20.00		1,023	- *
Macquarie Asia Infrastructure Fund 2 SCSp 1)	Luxembourg, Luxembourg	50.48		300,402	14,284 *
Macquarie Asia Infrastructure Fund EU Feeder L.P. 1)	London, UK	100.00		102	6 *
MB Asia Real Estate Feeder (Scot.) L.P. 1)	Edinburgh, UK	34.80		833	-53 *
Medico 12 GmbH & Co. KG 1)	Frankfurt am Main	99.98		48	-10 *
paydirekt GmbH	Frankfurt am Main	33.33		24,074	993 *
RV-CVIII Holdings, LLC 1)	Camden, USA	100.00		25,412	-14,763 *
Schroder Property Services B.V. S.à.r.l. 1)	Senningerberg, Luxembourg	30.00		32,546	-88 *
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		176,420	13,347 *
Swiss Life Health Care IV SICAV-FIS 1)	Luxembourg, Luxembourg	46.51		91,871	8,367 *
Technology DZ Venture Capital Fund I GmbH & Co. KG i.L. 1)	Munich	34.33		8,483	-59 *
TF H III Technologiefonds Hessen Gesellschaft mit beschränkter Haftung	Wiesbaden	25.00		6,493	-553 *
TF H Technologie-Finanzierungsfonds Hessen Gesellschaft mit beschränkter Haftung (TF H GmbH) i.L.	Wiesbaden	33.33		505	-24 *
Tishman Speyer Brazil Feeder (Scots/D), L.P. 1)	Edinburgh, UK	100.00		4,267	-2,509 *
Tishman Speyer European Real Estate Venture VIII Parallel SCSp 1)	Luxembourg, Luxembourg	55.88		53,087	9,943 *
TRUUCO GmbH 2)	Frankfurt am Main	49.00		n/a	n/a
TXS GmbH 1)	Hamburg	24.50		200	402 *
VAD Beteiligungen GmbH	Berlin	25.16		18,244	-6 *
VBI Beteiligungs GmbH 1)	Vienna, Austria	24.50		3,832	3,797 *
VR-NetWorld GmbH 2)	Bonn	43.48		6,762	777 *

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		637,235	38,068 *
EDEKABANK Aktiengesellschaft	Hamburg	8.35		166,890	7,551 *
Raiffeisendruckerei GmbH 1)	Neuwied	7.88		36,656	2,738 *
SCHUFA Holding AG 2)	Wiesbaden	19.73		146,880	48,427 *

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		1,175	-1,412 *
ABE Clearing S.A.S a Capital Variable	Paris, France	2.08		42,641	6,108 *
AERS Consortio AG 1)	Stuttgart	16.50		114	-18 *
AgroRisk Polska Spólka z ograniczona odpowiedzialnoscia 1)	Poznań, Poland	15.00		n/a	n/a
AKA Ausfuhrkredit-Gesellschaft mit beschränkter Haftung	Frankfurt am Main	0.31		273,601	14,936 *
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	10.49		3,401	-2,019 *
ARDIAN Infrastructure Fund V B S.C.S., SICAV-RAIF 1)	Luxembourg, Luxembourg	13.58		400,052	64,438 *
Assicoop-Assicurazioni Cooperative S.r.l. 1)	Catania, Italy	0.41		n/a	n/a
assistance partner GmbH & Co. KG 1)	Munich	5.01		1,248	248 *
Atruvia AG 2)	Frankfurt am Main	0.35		449,045	9,936 *
Bank Polskiej Spoldzielczosci Spolka Akcyjna	Warsaw, Poland	0.91		199,641	7,099 *
BayBG Bayerische Beteiligungsgesellschaft mbH	Munich	9.38		258,865	14,219 *
Bayerische Raiffeisen-Beteiligungs-Aktiengesellschaft 2)	Beilngries	1.85		879,428	54,032 *
Berliner Volksbank eG 1)	Berlin	-	0.10	1,164,826	19,090 *
Beteiligungs-Aktiengesellschaft der bayerischen Volksbanken 1)	Pöcking	1.14		232,160	159 *
BGG Bayerische Garantiegesellschaft mit beschränkter Haftung für mittelständische Beteiligungen	Munich	13.15		61,659	4,269 *
Blackrock Renewable Income Europe Fund 1)	Dublin, Ireland	7.69		564,384	1,760 *
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		281	126 *
BTG Beteiligungsgesellschaft Hamburg mbH	Hamburg	10.00		5,296	288 *
Bürgschaftsbank Bremen GmbH	Bremen	4.86		8,576	181 *
Bürgschaftsbank Hamburg GmbH	Hamburg	6.36		27,318	379 *
Bürgschaftsbank Hessen GmbH	Wiesbaden	15.87		23,749	943 *
Bürgschaftsbank Nordrhein-Westfalen GmbH Kreditgarantiegemeinschaft	Neuss	15.75		40,284	1,040 *
Bürgschaftsbank Rheinland-Pfalz GmbH	Mainz	14.31		17,356	132 *
Bürgschaftsbank Sachsen GmbH	Dresden	14.66	16.59	44,437	177 *
Bürgschaftsbank Schleswig-Holstein Gesellschaft mit beschränkter Haftung	Kiel	11.79		42,089	181 *
Cash Logistik Security AG 1)	Düsseldorf	4.10		5,031	1,300 *
CASSA CENTRALE BANCA - CREDITO COOPERATIVO ITALIANO S.P.A.	Trento, Italy	3.69		1,143,337	46,064 *
CI IV US AIV Non-QFPF K/S 1)	Copenhagen K, Denmark	15.24		115,022	-15,628 *
CLS Group Holdings AG	Lucerne, Switzerland	0.69		373,106	-9,894 *
Copenhagen Infrastructure Energy Transition Fund I K/S 1)	Copenhagen, Denmark	10.08		669,872	269,439 *
Copenhagen Infrastructure Energy Transition Fund I US Non-QFPF K/S 1)	Copenhagen, Denmark	10.08		n/a	n/a
Copenhagen Infrastructure III K/S 1)	Copenhagen K, Denmark	5.94		348,416	34,464 *
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	6.17		669,872	269,439 *
Copenhagen Infrastructure IV K/S 1)	Copenhagen K, Denmark	7.15		459,636	70,012 *
Crown Secondaries Special Opportunities II S.C.S. 1)	Luxembourg, Luxembourg	7.71		976,378	247,420 *
Crown Secondaries Special Opportunities III Feeder SCSp 1)	Luxembourg, Luxembourg	15.82		n/a	n/a
Curzon Capital Partners III LP 1)	London, UK	11.99		57,268	-1,612 *
Curzon Capital Partners IV LP 1)	London, UK	10.73		228,276	51,821 *
Deutsche Bauernsiedlung - Deutsche Gesellschaft für Landentwicklung (DGL) mbH 1)	Frankfurt am Main	16.26		5,864	-3,869 *
Deutsche Börse Commodities GmbH	Frankfurt am Main	16.20	14.48	10,479	7,109 *
DG IMMOBILIEN MANAGEMENT Gesellschaft mbH	Frankfurt am Main	5.01		22,504	5,405 *
DG Nexolution eG 2)	Wiesbaden	1.57	1.56	66,923	445 *
DI Rathaus-Center Pankow Nr.35 KG 1)	Düren	3.86		27,574	2,303 *
Die Familiengenossenschaft eG 1)	Mannheim	4.71		n/a	n/a
Domus Beteiligungsgesellschaft der Privaten Bausparkassen mbH Berlin 1)	Berlin	14.13		28	-2 *
EIG Energy Fund XVI (Scotland) L.P. 1)	Edinburgh, UK	14.02		391,961	54,680 *
EIG Energy Fund XVII (Scotland) L.P. 1)	Edinburgh, UK	15.61		582,147	-22,906 *
EPI Company SE	Brussels, Belgium	7.46		n/a	n/a
Euro Capital S.A.S. 1)	Metz, France	4.44		30,826	269 *
EURO Kartensysteme GmbH	Frankfurt am Main	19.60		12,442	150 *
European Property Investors Special Opportunities, L.P. 1)	London, UK	6.35		24,403	23,893 *
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	3,006 *
GBK Holding GmbH & Co. KG 1)	Kassel	0.02		462,484	19,643 *
GDV Dienstleistungs-GmbH 1)	Hamburg	2.82		n/a	n/a

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
GI Data Infrastructure Fund-A LP 1)	Wilmington, USA	13.60		841,563	70,936 *
GIP Capital Solutions Feeder Fund II (EEA) 1)	Luxembourg, Luxembourg	15.00		77,699	-1,412 *
GLADBACHER BANK Aktiengesellschaft von 1922	Mönchengladbach	17.53		40,078	1,697 *
Global Infrastructure Partners IV-C2, L.P. 1)	Luxembourg, Luxembourg	17.17		617,582	42,308 *
Global Renewable Power Infrastructure Fund III (C), SCSp 1)	Luxembourg, Luxembourg	6.40		412,696	-7,088 *
GMB Systems GmbH & Co. KG 1)	Hamburg	10.75		n/a	n/a
GMS Mitarbeiter Beteiligungsgesellschaft UG & Co.KG 1)	Paderborn	4.00		968	-5 *
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		11,364	-652 *
HANDWERKSBAU NIEDERRHEIN AKTIENGESELLSCHAFT	Düsseldorf	10.15		29,481	1,874 *
heal.capital I GmbH & Co. KG 1)	Berlin	0.99		25,050	-2,492 *
Hines European Value Fund SCSp 1)	Luxembourg, Luxembourg	13.87		638,455	101,102 *
Immigon portfolioabbau ag i.A.	Vienna, Austria	3.79		726,692	8,811 *
Immo Feest en Cultuurpaleis Oostende SA 1)	Brussels, Belgium	-		15,530	-480 *
Interessengemeinschaft Frankfurter Kreditinstitute GmbH	Frankfurt am Main	7.01		24,176	8,494 *
IVS Immobilien GmbH 1)	Schiffweiler	6.00		26	- *
K in Kortrijk S.A. 1)	Brussels, Belgium	-		88,265	-2,615 *
KLAAS MESSTECHNIK GmbH 1)	Seelze-Harenberg	15.00		61	20 *
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		11,637	756 *
MBG Mittelständische Beteiligungsgesellschaft Baden-Württemberg Gesellschaft mit beschränkter Haftung	Stuttgart	9.94	8.33	92,210	8,859 *
MBG Mittelständische Beteiligungsgesellschaft Rheinland-Pfalz mbH	Mainz	9.80	11.11	16,702	349 *
MBG Mittelständische Beteiligungsgesellschaft Schleswig-Holstein mbH	Kiel	14.59	15.22	47,094	2,884 *
MED Platform II S.L.P. 1)	Lyon, France	4.32		n/a	n/a
Mittelständische Beteiligungsgesellschaft Berlin-Brandenburg mbH	Potsdam	8.89		25,346	1,191 *
Mittelständische Beteiligungsgesellschaft Mecklenburg-Vorpommern mbH	Schwerin	16.00		19,341	1,379 *
Mittelständische Beteiligungsgesellschaft Niedersachsen (MBG) mit beschränkter Haftung	Hannover	19.92		16,427	1,330 *
Mittelständische Beteiligungsgesellschaft Sachsen mbH	Dresden	9.38		49,447	1 *
Mittelständische Beteiligungsgesellschaft Sachsen-Anhalt (MBG) mbH	Magdeburg	19.84		24,673	403 *
Mittelständische Beteiligungsgesellschaft Thüringen mbH	Erfurt	10.28		28,607	1,185 *
Münchener Hypothekenbank eG 2)	Munich	1.01		1,682,329	59,071 *
Munster S.A. 1)	Senningerberg, Luxembourg	0.08		1,450	-473 *
Niedersächsische Bürgschaftsbank (NBB) Gesellschaft mit beschränkter Haftung	Hannover	17.68		32,694	2,554 *
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	-		10,456	-484 *
PANELLINIA BANK SOCIETE ANONYME (under special liquidation)	Athens, Greece	8.42	5.28	-	- *
Partners Group Direct Equity IV (EUR) S.C.A., SICAV-RAIF 1)	Luxembourg, Luxembourg	6.84		1,268,470	133,732 *
Partners Group Direct Infrastructure 2020 (EUR), L.P.S.C.Sp.,SICAV-RAIF 1)	Luxembourg, Luxembourg	15.80		210,050	2,342 *
Partners Group Global Mezzanine 2007 S.C.A., SICAR 1)	Luxembourg, Luxembourg	2.24		45,799	1,580 *

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000
Prosa Beteiligungs GmbH & Co. KG 1)	Frankfurt am Main	15.63		587	-408 *
Protektor Lebensversicherungs-AG 1)	Berlin	5.27		7,854	2 *
Raiffeisen Waren-Zentrale Rhein-Main eG	Cologne	2.00		151,222	7,599 *
Raiffeisen-Kassel A-Beteiligungs GmbH & Co. KG	Kassel	8.22		212,123	18,734 *
Raiffeisen-Kassel B-Beteiligungs GmbH & Co. KG	Kassel	8.22		212,123	18,734 *
Royale 120 S.A. 1)	Brussels-Zaventem, Belgium	0.01		976	-129 *
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	0.25		601,053	108,755 *
Saarländische Wagnisfinanzierungsgesellschaft mbH	Saarbrücken	2.59		8,609	342 *
SALEG Sachsen-Anhaltinische Landesentwicklungs GmbH 1)	Magdeburg	1.15		13,878	414 *
Sana Kliniken AG 1)	Ismaning	0.69		1,017,094	66,685 *
Schulze-Delitzsch-Haus, eingetragene Genossenschaft 1)	Bonn	0.97		1,702	210 *
SGB-Bank Spólka Akcyjna	Poznań, Poland	0.19		171,616	2,832 *
Société de la Bourse de Luxembourg S.A. 1)	Senningerberg, Luxembourg	0.04		132,577	9,242 *
Splash Investment GmbH 1)	Kerpen	11.68		213,713	-118 *
Strategie Invest SICAV 1)	Zurich, Switzerland	0.07		n/a	n/a
Süddeutsche Zuckerrübenverwertungs-Genossenschaft eG	Ochsenfurt	4.44	4.55	212,806	11,132 *
Target Partners Capital GmbH & Co. KG 1)	Munich	10.00	10.01	273	-8 *
Technologiezentrum Schwäbisch Hall GmbH 1)	Schwäbisch Hall	4.17	5.56	577	- *
Teko - Technisches Kontor für Versicherungen Gesellschaft mit beschränkter Haftung 1)	Düsseldorf	10.00		142	31 *
True Sale International GmbH	Frankfurt am Main	7.69		4,536	-88 *
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 *
UIR Belgique 1 S.A. 1)	Brussels, Belgium	0.13		68,596	2,084 *
UIR Le Président 1 1)	Brussels-Zaventem, Belgium	-	0.06	4,940	-1,599 *
UIR MU III S.A. de C.V. 1)	Mexico City, Mexico	-		6,759	-706 *
Verimi GmbH	Berlin	5.41		33,006	-26,623 *
Visa Inc.	San Francisco, USA	-		33,197,033	11,421,885 *
VNT Automotive GmbH 1)	Langenwang, Austria	10.00		10,110	1,195 *
VR-Bank Heilbronn Schwäbisch Hall eG 1)	Schwäbisch Hall	-	0.01	259,661	11,929 *
VR-IMMOBILIEN-LEASING GmbH 1)	Eschborn	6.00		15,145	675 *
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 Vorsorge-Plan Wohnen 1 GmbH & Co. KG 1)	Erlangen	0.57		1,970	45 *
ZG Raiffeisen eG	Karlsruhe	1.01	0.02	69,084	4,192 *

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.