Notes

A General disclosures

» 01 Basis of preparation

Pursuant to section 115 of the German Securities Trading Act (WpHG) in conjunction with section 117 no. 2 WpHG, the interim consolidated financial statements of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK) for the first half of the 2023 financial year have been prepared in accordance with the provisions of the International Financial Reporting Standards (IFRS), as adopted by the European Union (EU). In particular, the requirements of IAS 34 *Interim Financial Reporting* have been taken into account.

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

» 02 Accounting policies and estimates

Changes in accounting policies

The financial statements of the entities consolidated in the DZ BANK Group have been prepared using uniform accounting policies. The accounting policies used to prepare these financial statements were the same as those applied in the consolidated financial statements for the 2022 financial year, unless these policies are subject to the amendments described below.

First-time application in 2023 of changes in IFRS

The following new accounting standard and amendments to IFRS have been applied for the first time in DZ BANK's interim consolidated financial statements for the first half of the 2023 financial year:

– 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)

IFRS 17 *Insurance Contracts* superseded the previous standard for accounting for insurance contracts (IFRS 4 *Insurance Contracts*) with effect from January 1, 2023 and is required to be applied to insurance contracts, reinsurance contracts, and investment contracts with discretionary participation features. IFRS 17 establishes the principles for the recognition, measurement, presentation, and disclosure of insurance contracts issued.

The main difference between IFRS 17 and IFRS 4 is the uniform application of accounting policies in areas such as revenue recognition, the measurement of liabilities, and the realization of gains at the start of the contract. Under IFRS 4, entities were permitted to continue with their existing accounting approach. These approaches were shaped by various national accounting principles, making it almost impossible to compare financial statements.

IFRS 17 requires comparative information to be presented in the notes for the period immediately preceding the date of initial application of IFRS 17, i.e. for 2022 if initial application is in 2023. To calculate the comparative information, IFRS 17 requires fully retrospective application of the standard for insurance contract accounting in accordance with IAS 8. The fully retrospective approach stipulates that each group of insurance contracts (GIC) is recognized and measured at the transition date as if the insurance contracts had always been accounted for in accordance with IFRS 17. Any existing line items on the balance sheet that would not exist had IFRS 17 always applied must be derecognized and any resulting net differences must be recognized in equity. The idea is that the difference between balance sheet items under IFRS 4 and IFRS 17 is recognized in retained earnings, i.e. the IFRS 4 balance sheet items are derecognized, and the IFRS 17 balance sheet items recognized, in each case against retained earnings. If the fully retrospective approach is impracticable, IFRS 17.C5 in conjunction with IFRS 17.C3 permits use of a modified retrospective approach or a fair value approach at the transition date.

The objective of the modified retrospective approach is to achieve the closest outcome to fully retrospective application possible using reasonable and supportable information available without undue cost or effort. If the entity cannot obtain the reasonable and supportable information necessary to apply the modified retrospective approach, it must apply the fair value approach.

When applying the fair value approach, the entity determines the contractual service margin (CSM) or loss component of the liability for remaining coverage at the transition date as the difference between the fair value of a GIC at that date and the fulfillment cash flows measured at that date. The fair value of the GIC is determined on the basis of the price that would be paid in an orderly transaction between market participants at the measurement date (exit price). In determining that fair value, the entity must not apply the rules on fair value measurement in IFRS 13.47. To measure the market-based fair value of future cash flows, various adjustments are made to calculate a risk premium and the discount factors. Such adjustments might be made, for example, to cover costs that cannot be allocated directly.

For all non-life insurance business except for casualty insurance with premium refund, the measurement model developed for the liability for remaining coverage is used in the premium allocation approach. In the context of the transition, the premium allocation approach is generally applied fully retrospectively when determining the initial data. The risk part of the casualty insurance with premium refund business is measured using the general measurement model. For measurement at the transition date, adjustments are generally made fully retrospectively.

In personal insurance, the modified retrospective approach is used for the past in accordance with IFRS 17.C8 from the time at which the fully retrospective approach is not possible. This means that the CSM is determined using the modified retrospective approach at a time before the transition date so that it can then be updated to the transition date in accordance with IFRS 17.44 and IFRS 17.45. The measurement modifications here relate to the CSM, the loss component, and the amounts recognized in other comprehensive income and are largely based on information available pursuant to the German Regulation on the Reporting by Insurance Undertakings to the Federal Financial Supervisory Authority (BerVersV). All other measurement components adhere to the requirements for the fully retrospective approach. The fair value approach is generally not used for personal insurance.

For insurance contracts with direct participation features in personal insurance, the CSM and loss components are measured in accordance with IFRS 17.C17. The CSM at the transition date is calculated from the fair value of the underlying item less the fulfillment cash flows at that date, and an adjustment for the following amounts: amounts charged by the entity to the policyholder before that date, amounts paid before that date that would not have varied based on the underlying items, and amounts equal to the changes to the risk adjustment for non-financial risk caused by the release from risk before that date. If this results in a loss component, the loss component is adjusted to nil and the liability for remaining coverage is increased by the same amount. Otherwise, the amount determined is reduced by the estimated amortization of the CSM for services provided.

In accordance with IFRS 17.C12, the future cash flows for personal insurance contracts without direct participation features are estimated at the date of initial recognition as the amount of the future cash flows at the transition date. The cash flows are subsequently adjusted by the cash flows that occurred between initial recognition of the contracts and the transition date. This adjustment also includes cash flows for contracts that ended before the transition date. The discount rates to be applied upon initial recognition of a GIC are determined using an observable yield curve that, for at least 3 years immediately before the transition date, approximates the yield curve estimated applying IFRS 17.36 and IFRS 17.B72 (lock-in yield curve). The risk adjustment at the date of initial recognition of a GIC is determined from the risk adjustment for non-financial risk at the date of initial recognition by adjusting this adjustment by the expected release of the risk adjustment before the transition date. This released amount is estimated by reference to the release of the risk adjustment for similar insurance contracts that the insurance company issues at the transition date. The estimate is based on the current release of the risk adjustment at the transition date for each GIC. The CSM is determined as if interim financial statements had not been prepared before the transition date. If a CSM arises at the date of initial recognition, the CSM is determined at the transition date by applying the aforementioned lock-in yield curve pursuant to IFRS 17.C13(a). In addition, the CSM amounts that would have been recognized in profit or loss for services already provided under the insurance contracts are estimated by comparing the remaining coverage units at the transition date with the coverage units in existence before the transition date. At the transition date, there was no loss component for insurance contracts without direct participation features. Exercising the option of recognition in other comprehensive income in accordance with IFRS 17.88(b), the amount recognized in other comprehensive income in accordance with IFRS 17.C19(b)(i) is calculated on the basis of the lock-in yield curve.

In the personal insurance business, insurance acquisition cash flows are not allocated to future contract renewals. All insurance acquisition cash flows are allocated to the GICs at the time of initial recognition. This is also implemented for the transition date.

In inward reinsurance, the GICs are generally measured at the transition date using the fully retrospective approach for underwriting years starting with the 2015 financial year. In view of the data available, the modified retrospective approach pursuant to IFRS 17.C6 is used for underwriting years before the 2015 financial year. The modification relates to the lock-in yield curves and approximations of historical data for individual GICs. The fair value approach is not used.

The fully retrospective approach is used for the fire, property, and hail portfolios in the inward reinsurance business and for reinsurance contracts held. The data needed for this, particularly the forecasts for future cash flows for premiums, amortization patterns, and actual cash flows, is available owing to the short coverage periods.

Retrospective initial application resulted in the following adjustments to the income statement, statement of comprehensive income, and balance sheet:

Income statement for the period January 1 to June 30, 2022

€ million	Jan. 1– Jun. 30, 2022 before restatement	Amount of restatement	Jan. 1– Jun. 30, 2022 after restatement
(…)			
Premiums earned	9,746	-9,746	-
Insurance service result	-	1,051	1,051
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-3,364	-238	-3,602
(…)			
Insurance benefit payments	-4,735	4,735	-
Insurance business operating expenses	-1,628	1,628	-
Insurance finance income or expenses	-	2,367	2,367
(…)			
Profit before taxes	1,141	-203	938
Income taxes	-360	-2	-362
Net profit	**781**	**-204**	**577**
Attributable to:			
Shareholders of DZ BANK	753	-124	629
Non-controlling interests	28	-81	-53

Statement of comprehensive income for the period January 1 to June 30, 2022

€ million	Jan. 1– Jun. 30, 2022 before restatement	Amount of restatement	Jan. 1– Jun. 30, 2022 after restatement
Net profit	781	-204	577
Other comprehensive income/loss	-4,731	1,979	-2,752
Items that may be reclassified to the income statement	**-4,699**	**2,313**	**-2,386**
Gains and losses on debt instruments measured at fair value through other comprehensive income	-6,918	-10,863	-17,781
Exchange differences on currency translation of foreign operations	6	29	35
Insurance finance income or expenses included in other comprehensive income	-	14,190	14,190
(…)			
Income taxes	2,206	-1,043	1,163
Items that will not be reclassified to the income statement	**-32**	**-335**	**-367**
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-372	-568	-940
(…)			
Gains and losses arising from remeasurement of defined benefit plans	442	10	452
Income taxes	-87	223	136
Total comprehensive income/loss	**-3,950**	**1,774**	**-2,176**
Attributable to:			
Shareholders of DZ BANK	-3,461	1,674	-1,787
Non-controlling interests	-489	100	-389

Balance sheet as at January 1, 2022

ASSETS

€ million	Jan. 1, 2022 before restatement	Amount of restatement	Jan. 1, 2022 after restatement
(…)			
Investments held by insurance companies	129,119	-538	128,581
(…)			
Income tax assets	1,141	4,703	5,844
Other assets	6,501	-599	5,902
(…)			
Total assets	**627,273**	**3,565**	**630,838**

EQUITY AND LIABILITIES

€ million	Jan. 1, 2022 before restatement	Amount of restatement	Jan. 1, 2022 after restatement
(…)			
Insurance liabilities	118,863	-118,863	-
Insurance contract liabilities	-	117,461	117,461
Income tax liabilities	1,456	5,540	6,996
Other liabilities	10,797	-2,082	8,715
(…)			
Equity	28,661	1,510	30,171
Shareholders' equity	26,860	1,143	28,003
(…)			
Retained earnings	12,581	976	13,557
Reserve from other comprehensive income	1,651	168	1,818
(…)			
Non-controlling interests	1,801	366	2,167
Total equity and liabilities	**627,273**	**3,565**	**630,838**

Balance sheet as at December 31, 2022

ASSETS

€ million	Dec. 31, 2022 before restatement	Amount of restatement	Dec. 31, 2022 after restatement
(…)			
Investments held by insurance companies	105,955	-407	**105,548**
(…)			
Income tax assets	3,428	2,349	**5,777**
Other assets	7,204	-585	**6,619**
(…)			
Total assets	**627,041**	**1,356**	**628,397**

EQUITY AND LIABILITIES

€ million	Dec. 31, 2022 before restatement	Amount of restatement	Dec. 31, 2022 after restatement
(…)			
Insurance liabilities	103,795	-103,795	**-**
Insurance contract liabilities	-	97,649	**97,649**
Income tax liabilities	1,063	4,509	**5,572**
Other liabilities	10,999	-2,039	**8,960**
(…)			
Equity	23,076	5,033	**28,109**
Shareholders' equity	21,967	4,290	**26,257**
(…)			
Retained earnings	13,482	1,274	**14,756**
Reserve from other comprehensive income	-4,142	3,015	**-1,127**
(…)			
Non-controlling interests	1,109	743	**1,852**
Total equity and liabilities	**627,041**	**1,356**	**628,397**

Initial application of IFRS 17 has also resulted in adjustments to the statement of changes in equity and statement of cash flows as well as to the disclosures in the notes to the financial statements listed below. Where relevant, the new balance sheet and income statement structures have been used. The adjustments have been made in note 05 (segment information), note 11 (insurance service result), note 12 (gains and losses on investments held by insurance companies and other insurance company gains and losses), note 13 (insurance finance income or expenses), note 18 (items reclassified to the income statement), note 19 (income taxes relating to components of other comprehensive income), note 26 (investments held by insurance companies), note 28 (other assets), note 37 (insurance contract liabilities), note 38 (other liabilities), note 40 (equity), note 41 (classes, categories, and fair values of financial instruments), note 43 (assets and liabilities measured at fair value on the balance sheet), note 46 (nature and extent of risks arising from financial instruments), and all notes in chapter E 'Insurance business disclosures'.

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. There is no material impact on DZ BANK's interim consolidated financial statements.

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 interim 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 contract liabilities, other assets held by insurance companies, 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.

Insurance contract liabilities and other assets held by insurance companies

The measurement of insurance contract liabilities and other assets held by insurance companies involves the exercise of judgment, estimates, and assumptions, especially in relation to mortality, claims, rates of return on investment, lapse, 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 contract liabilities are described in the insurance business disclosures in note 03.

» 03 Insurance business

General information on the accounting treatment of insurance business

The insurance business comprises insurance contracts, investment contracts, and service contracts. It also includes financial guarantee contracts with policyholders.

Under an insurance contract, the issuer accepts significant insurance risk from a policyholder by agreeing to compensate the policyholder if an uncertain future event adversely affects the policyholder. Insurance contracts are recognized in accordance with the requirements of IFRS 17. Investment contracts are mainly pension fund contracts based on defined benefit plans or contracts to protect semi-retirement employment models. Investment contracts are classified as financial instruments within the scope of IFRS 9. Service contracts comprise, in particular, separable components of insurance contracts that contain services other than services pursuant to IFRS 17. 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 is reported under specific insurance items in the income statement and on the 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 05 of the consolidated financial statements for the year ended December 31, 2022. 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 or in the reserve from other comprehensive income. Loss allowances are presented on a net basis within the two balance sheet items 'investments held by insurance companies' and 'other assets held by insurance companies'. However, in the notes on these balance sheet items, the loss allowances are presented on a gross basis.

Other liabilities of insurance companies include the performance obligations under investment contracts for which no material insurance risk is assumed when the policy is concluded. These are reported under liabilities from investment contracts within payables and residual other liabilities. The underlying financial instruments in these contracts 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. On subsequent measurement, 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.

General measurement methods

IFRS 17 includes 3 measurement methods, the main one being the general measurement model. The others are the premium allocation approach – a simplified approach for short-term business – and the variable fee approach for insurance contracts with direct participation features. All of the measurement models are used. However, the degree to which the measurement models are used in the individual business segments varies due to the differences in the nature of the aggregated business segments.

General measurement model

For the general measurement model, IFRS 17 specifies that the liability for remaining coverage for a GIC at initial recognition is calculated as the sum of the fulfillment cash flows and the CSM. The fulfillment cash flows comprise the probability-weighted estimate of 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 CSM is essentially the unearned profit that will be recognized in the future during the coverage period. It is recognized in profit or loss in accordance with an amortization pattern. In the general measurement model, measurement is based on GICs instead of individual contracts. To form the GICs, portfolios are defined that comprise contracts that are subject to similar risks and managed together. These portfolios are divided into GICs based on profitability, measurement approach, and annual cohorts.

On subsequent measurement, the carrying amount of a GIC at the end of each reporting period is the sum of the liability for future coverage and the liability for incurred claims. On subsequent measurement of the liability for remaining coverage, each GIC is remeasured using current assumptions and parameters. As a result, the CSM incorporates changes to non-financial estimates regarding future coverage and new business margins and is updated in line with the provision of services. The liability for remaining coverage is calculated at each balance sheet date from the sum of the present value of the estimated cash outflows, the risk adjustment for non-financial risk, and the CSM.

The general measurement model is used for inward reinsurance and for reinsurance contracts held (with the exception of the fire, property, and hail portfolios in inward reinsurance), the risk part of the casualty insurance with premium refund business in non-life insurance, and credit insurance as part of the personal insurance business.

Premium allocation approach

The measurement of a GIC may be simplified using the premium allocation approach, provided that certain criteria are met. This simplification can be applied upon initial recognition of a GIC if an entity reasonably expects that use of the premium allocation approach will result in a measurement of the liability for future coverage that is not materially different from its measurement under the general measurement model or if the coverage period of each contract in the GIC is one year or less. When comparing the different possible measurements, the impact of the time value of money and the different amortization patterns of the capitalized future insurance cover on profit or loss is taken into account. In view of the nature of the underlying business, no significant variability in the fulfillment cash flows before claims are incurred is expected.

At initial recognition of each group of insurance contracts measured using the premium allocation approach, the carrying amount of the liability for remaining coverage is measured on the basis of the premiums received at initial recognition less any insurance acquisition cash flows that have been allocated to the GIC. The carrying amount is also adjusted for any amounts arising from the derecognition of any assets or liabilities that were previously recognized for cash flows related to the GIC, including any assets for insurance acquisition cash flows.

Reinsurance contracts held are measured on the same basis as the underlying insurance contracts. If a loss is recognized at initial recognition of a group of onerous underlying insurance contracts or if further onerous underlying insurance contracts are added to a GIC, a loss recovery component is calculated, provided that corresponding reinsurance is in place. It is calculated by multiplying the loss recognized for the underlying contracts by the percentage of claims from the reinsurance contracts held.

On subsequent measurement, the carrying amount of the liability for remaining coverage is increased by premiums received and by the amortization of the insurance acquisition cash flows, which are recognized as an expense, and is reduced by the amount recognized as insurance revenue for services provided and by all additional insurance acquisition cash flows allocated after initial recognition. The same applies to subsequent measurement of reinsurance contracts held, with the exception of insurance acquisition cash flows recognized that are not available for these contracts.

The premium allocation approach is used for the non-life insurance business (except for casualty insurance with premium refund), for the fire, property, and hail portfolios in inward reinsurance, for international travel healthcare insurance in personal insurance, and for reinsurance contracts held.

Variable fee approach

Insurance contracts with direct participation features are measured in accordance with the rules of the variable fee approach. Initial measurement is the same as under the general measurement model, whereas subsequent measurement – particularly regarding the updating of the CSM – takes policyholder participation features into account.

The annual cohort rule under IFRS 17.22 as endorsed by the EU is optional; this option is exercised. The European Commission permits users in the EU to choose whether to apply the requirement under IFRS 17.22 for certain contracts or not. This decision affects the portfolios pursuant to article 2 (2) letter a) of Regulation (EU) 2021/2036. These comprise GICs with direct participation features, groups of investment contracts with discretionary participation features, and insurance contracts with cash flows that affect or are affected by other insurance contracts in accordance with IFRS 17.B67 and IFRS 17.B68 (mutualization). This mutualization takes place across annual cohorts. In the personal insurance business involving contracts with direct participation features and with mutualization, and in casualty insurance business with premium refund involving endowment life insurance, annual cohorts are generally not formed.

On subsequent measurement of a GIC with direct participation features, the fulfillment cash flows for the entirety of the changes to the obligation to pay policyholders are adjusted by an amount corresponding to the fair value of the underlying items. These changes do not relate to future services and are therefore recognized in profit or loss. The CSM is then adjusted by the changes to the entity’s share of the fair value of the underlying items that relate to future services.

The variable fee approach is used for the personal insurance business (except for credit insurance and international travel healthcare insurance) and for the savings component in casualty insurance with premium refund in the non-life insurance business.

Insurance contract assets and liabilities

Liability for remaining coverage

Fulfillment cash flows

For the non-life portfolios, cash flows – calculated using the general measurement model – for estimated future claims and the associated premiums and costs are needed to be able to determine the liability for remaining coverage. The estimated future cash flows are determined using estimated ratios, realization patterns, estimated premiums written, and estimated premiums earned.

The following ratios are modeled:

- Estimated ultimate claims rates in order to model the future claims expenses for compensation payments, recourse, excess proceeds, and loss sharing agreements as well as external claim settlement costs
- Expected ratios for internal claim settlement costs, insurance acquisition cash flows, administration costs, fire protection taxes, premium refunds, and lapse

Various realization patterns are modeled for settlement purposes. The payment pattern for future compensation payments, recourse, excess proceeds, loss sharing agreements and claim settlement costs is derived from the settlement pattern used in the recognition of claims provisions. In addition, various payment patterns for the insurance acquisition cash flows, administration costs, fire protection taxes, and premium refunds are modeled.

In the personal insurance business, the fulfillment cash flows are based on a projection of future cash flows within the contract boundaries. This takes account of all cash inflows and outflows that are needed to settle the insurance liabilities during their term to maturity. These comprise premium payments and related cash flows, all payments to policyholders and beneficiaries (including future policyholder participation), and all expenses incurred in order to fulfill the insurance obligations, where these can be allocated directly.

Premiums, guaranteed benefits, and costs are projected for the main portfolios on an individual contract basis until expiry. The stochastic measurement is primarily based on these deterministic cash flows, with other factors such as dynamic policyholder behavior also taken into account. Business that is not modeled on an individual contract basis is taken into account using an appropriate scaling approach.

In addition to the product and portfolio data at the start of the projection, assumptions about changes in the portfolio over the course of the projection are also incorporated. These are assumptions about biometrics and policyholder behavior, such as second-order mortality probabilities, probabilities for lump-sum payments, and lapse probabilities. Inflation assumptions are taken into account in the cost projection.

To measure the policyholder participation payments, the policyholder participation is allocated for each year of the projection depending on the funds available from the provision for premium refunds under the German Commercial Code (HGB). The HGB provision for premium refunds is updated in accordance with the German Minimum Addition Regulation (MindZV).

The value of the options and guarantees is determined using stochastic simulation.

In inward reinsurance, the fulfillment cash flows – both for the liability for remaining coverage and for the liability for incurred claims – are measured using estimates of future cash flows determined in accordance with IFRS 17.33-35 and taking account of IFRS 17.B65, B66, and B66(a). A distinction is made in the modeling between cash flows related to premiums, cash flows related to benefits, and cash flows related to costs. The costs modeled are the administration costs that can be allocated and other insurance-related costs. IFRS 17.59(a) applies only if insurance acquisition cash flows within the meaning of IFRS 17 exist.

The estimates of future cash flows are determined for each GIC, broken down into items relating to premiums, claims, and costs, using a multi-stage model as a best estimate on the basis of past data and future forecasts. The future cash flows of the outstanding payments are generated using actuarial payment flow patterns. Changes to estimates of future cash flows are predominantly based on information from previous insurers and on historic and current data. Changes to estimates that are based on the exercise of judgment are documented separately. The modeling of the estimated cash flows is based on the 5 biggest currencies in terms of volume (euro, US dollar, pound sterling, Japanese yen, and South African rand).

The outstanding cash flows are then divided into those for coverage already provided (liability for incurred claims) and those for coverage still outstanding (liability for remaining coverage). The future cash flows are determined on an underwriting year basis, although forecasts of future claims and the settlement of claims incurred are combined. It is therefore necessary to allocate the remaining claims provision to future coverage and past coverage. The basis for this distribution draws on the breakdown of the total estimate of premiums at each balance sheet date. Analysis of the settlement year enables the premium payments to be allocated to the actual coverage provided by the previous insurer.

Risk adjustment for non-financial risks

A confidence level technique is used to determine the risk adjustment for non-financial risk. A confidence level of 75 percent has been set for the Group. The option to not split the change in the risk adjustment into an insurance service component and an insurance finance component is not exercised. When determining the risk adjustment for each GIC, no risk compensation effects are taken into account that go beyond the level of the individual legal entity.

Discount rates

All cash flows are discounted with a risk-free yield curve that has been adjusted to reflect the liquidity characteristics of the insurance contracts. The liquidity of an insurance contract is determined by the predictability of its cash flows. The amount of the liquidity premium is derived from the liquidity of the reference market. Uncertainties in determining the discount rates and, in particular, the differences between different insurance contracts are taken into account in the measurement of the fulfillment cash flows at another point and are thus not taken into account by adjusting the yield curve. The relevant uncertainties arising from financial risk are factored into the estimate of the cash flows as part of a stochastic measurement that is based on up-to-date market prices of relevant hedging instruments. Non-financial uncertainties are reflected in the risk adjustment for non-financial risks. No further differentiation in terms of liquidity is therefore made in the measurement yield curve. The yield curve is determined for each currency using a bottom-up approach. In a two-step process, the risk-free and liquid basic yield curve is determined and then adjusted for an illiquidity premium.

The risk-free, liquid basic yield curve is determined using the liquid, risk-free swap rates based on 6M Euribor, which are derived from observable market prices and are extrapolated for maturities for which no observable market prices can be determined. The Nelson Siegel method is used for the extrapolation. If no suitable discount rates are observable in the market, they have to be estimated in accordance with IFRS 17.B78. Market data that is fundamentally observable but cannot be obtained from liquid markets with sufficient transaction volumes is not regarded as reliable. In this case, judgment has to be exercised in order to assess the degree of similarity between the features of the insurance contracts to be measured and the observable market prices.

To reflect the liquidity characteristics of the insurance contracts, the risk-free, liquid basic yield curve is adjusted for an illiquidity premium. As the complete illiquidity of a cash flow is, by definition, not observable in the market, it is determined only approximately from observable market data. This process of determination results in a lower-end barrier for the complete illiquidity premium and thus in an abstract, risk-free, and completely illiquid yield curve pursuant to IFRS 17.B84. Higher illiquidity premiums cannot be established due to a lack of available data and are thus not estimated on the basis of reliable data. To determine the illiquidity premium from market data, the yield differential between German Pfandbriefe and German government securities with 1, 5, and 10-year maturities as at the reporting date are used, with interpolation between these maturities. Estimation uncertainties are also taken into account for longer yield differentials.

In inward reinsurance, there are transactions in foreign currencies for which yield curves for discounting are also provided in the following main currencies: US dollar, pound sterling, Japanese yen, and South African rand. The foreign currency curves are determined using a methodology that involves determining the difference between the risk-free interest rates and the risk-free euro yield curve and adjusting the euro IFRS 17 discount curve by the individual maturity-related interest-rate differentials.

Investment component

The investment component of a contract is determined by calculating the amount that has to be repaid to the policyholder in all scenarios that have commercial substance, irrespective of the occurrence of an insured event. Investment component payments are not recognized as part of insurance revenue or insurance service expenses.

In personal insurance, the investment component is calculated as the cash surrender value defined in the contract terms and conditions less any fees due. Policyholder participation in the form of interest-bearing accumulated surpluses or unit-linked policyholder participation also constitutes an investment component.

In inward reinsurance, the amount of the guaranteed payment to the ceding insurer and thus the investment component is calculated as the minimum of the benefit and the contractual agreements if no claim is made. Owing to the nature of the reinsurance business, it is assumed that the guaranteed benefit if no claim is made is smaller than the benefits in a loss event. As the contractual terms and conditions are clearly defined, the amount of the investment component can be unequivocally determined when the contract is signed.

Contractual service margin

At initial measurement, the CSM of a GIC essentially represents the unearned profit that will be recognized as the entity provides services under the insurance contracts in the group.

In the case of insurance contracts without direct participation features, the CSM is calculated at each reporting date from the carrying amount at the end of the preceding reporting period, adjusted by the following:

- The CSM for all new contracts added to the GIC over the course of the year
- The interest accreted on the carrying amount of the CSM during the reporting period
- The changes to the fulfillment cash flows relating to future services
- The effect of any currency exchange differences on the CSM
- The amount recognized as insurance revenue on the basis of the services performed during the year

In the case of insurance contracts with direct participation features, the CSM is calculated at each reporting date from the carrying amount at the end of the preceding reporting period, adjusted by the following:

- The CSM for all new contracts added to the GIC over the course of the year
- The change in the amount of the entity’s share of the fair value of the underlying items
- The changes to the fulfillment cash flows relating to future services
- The effect of any currency exchange differences on the CSM
- The amount recognized as insurance revenue on the basis of the services performed during the year

In each period, a share of the CSM of a GIC is recognized in profit or loss in order to reflect the services provided on the basis of the number of coverage units provided in the year. At each reporting date, the coverage units are reviewed and updated for each contract, taking account of the scope of the services provided and the expected coverage period.

The projected risk result, which can be applied consistently across all life insurance product types, is used as a measure of the benefits provided by insurance coverage in personal insurance. In health insurance, the total value – calculated for each rate scale – of the profile of benefit drawdown normalized to a single age is used. For investment-related services, the amounts invested in the capital markets are used. The projected benefit reserve under HGB is an equivalent value derived from the setting of insurance rates and HGB accounting principles.

In the case of biometric products, the relative weighting between the benefits provided by insurance coverage and the investment-related service is significantly different from that for savings-focused products. This difference reflects the character of the service being provided. Biometric protection predominates in the case of biometric products. By contrast, the investment-related service is a more important aspect in the case of savings-focused products, although biometric protection is not to be regarded as immaterial.

In the personal insurance business, policyholders of insurance contracts with direct participation features share in both the risk result and the gains and losses on investments. This participation can be structured as a variable fee paid to the entity for the services to be provided. The insurance coverage protection is weighted using the projected risk result, with the weighting determined in line with MindZV. The weighting of the investment-based service is based on the range determined for shareholders' historical share of gains and losses on investments held by insurance companies from the projected HGB benefit reserve. Finally, the weighting factors are used to determine the ratio of the fees for the benefits provided by insurance coverage to the investment-related service.

In inward reinsurance, the settlement pattern for premiums earned is used to measure the coverage units and amortize the CSM. Due to the contract-specific, complex structure of reinsurance products, there is not a more objective method of quantifying the insurance benefit payment that could be used to compare and contrast the individual contracts. Using premiums earned rather than premiums written ensures that amounts are accrued and recognized accordingly.

Liability for incurred claims

In non-life insurance, the liability for incurred claims in respect of a GIC is recognized in the amount of the fulfillment cash flows related to claims incurred. The future cash flows are discounted at current discount rates.

To calculate the liability for incurred claims, the following 3 components must be measured:

Claims provision

Claims provisions are provisions for known claims and claims incurred but not reported. The final amount of the claims and the timing of payment are not known. Claims provisions contain compensation payments, annuities that have not been accepted, external claim settlement costs, internal claim settlement costs, recourse, excess proceeds, and loss sharing agreements.

Claims provisions are mainly calculated using the chain ladder method or other actuarial loss reserving technique. The chain ladder method is an actuarial method of calculating claims provisions on the basis of claim payments and claims expenses. This multiplicative reserving technique is the market standard in non-life insurance. It is based on the assumption that historical claim settlement patterns are indicative of future claim settlement patterns. It is also assumed that the individual years in which claims are incurred are independent of each other. Settlement for a particular year is based on a settlement pattern that is identical for all years. This settlement pattern is then used to estimate the expected future cash flows.

The very short period for the settlement of claims in the personal insurance business means that the claims provision in this business is calculated in the amount of the nominal values of the expected payments for claims incurred. In the life insurance business, benefits paid due to occupational incapacity or total unfitness for work are part of the liability for remaining coverage.

For calculation of the claims provision in inward reinsurance, please refer to the section on the liability for remaining coverage and the information on the difference between the liability for remaining coverage and the liability for incurred claims.

Provision for accepted annuities

Provisions for accepted annuities cover obligations from claims that previously had to be recognized in the claims provisions and were annuitized. Annuities can arise in the liability insurance, casualty insurance, and motor vehicle liability insurance businesses. These annuities are measured in the same way as in the life insurance business.

Risk adjustment

A confidence level technique is used to determine the risk adjustment. A confidence level of 75 percent has been set for the Group. The necessary distribution assumptions are determined on the basis of stochastic simulations and using market-standard distributions, particularly log-normal distribution. The parameters used include the expected values and the forecasting errors in the recognition of claims provisions.

Recognition of onerous business on the balance sheet

If at any time during the coverage period, facts and circumstances indicate that a GIC is onerous, the loss is recognized in profit or loss and the liability for remaining coverage is increased by the amount by which the current estimates of the fulfillment cash flows relating to remaining coverage exceed the carrying amount of the liability for remaining coverage (loss component).

The change in the liability for remaining coverage due to onerous contracts also results in a pro rata change in the loss recovery component from reinsurance contracts held.

Option of recognition in other comprehensive income

The accounting policy choice to disaggregate and recognize the total insurance finance income or expenses in profit or loss and in other comprehensive income is exercised (‘option of recognition in other comprehensive income’). Exercising this option pursuant to IFRS 17.89(b) for insurance contracts with direct participation features, the amount recognized in other comprehensive income at the transition date is equal to the cumulative amount of the underlying items recognized in other comprehensive income. On subsequent measurement, insurance finance income or expenses is disaggregated in such a way that this amount combined with the income and expenses recognized in profit or loss for the underlying items gives a balance of nil for the items presented separately in profit or loss. Exercising the option of recognition in other comprehensive income in accordance with IFRS 17.88(b) for insurance contracts without direct participation features, the amount recognized in other comprehensive income in accordance with IFRS 17.C19(b)(i) is calculated on the basis of the discount rates determined at initial recognition of a GIC. On subsequent measurement, insurance finance income or expenses is disaggregated in such a way that the cumulative amount recognized in other comprehensive income always corresponds to the difference between the carrying amount of the GIC applying the yield curve valid as at the reporting date and the carrying amount of the GIC applying the yield curve valid at the time of initial recognition of the GIC (lock-in yield curve). The lock-in yield curve to be used for the claims provision for insurance contracts under the premium allocation approach is determined on the basis of when the claim is incurred.

» 04 Revenue in the insurance business

The amounts recognized in the income statement and statement of comprehensive income are disaggregated into an insurance service result – comprising insurance revenue and insurance service expenses – and insurance finance income or expenses. Insurance revenue is the amount recognized to depict the provision of services relating to the GIC in an amount that reflects the consideration to which the entity expects to be entitled in exchange for these services. The insurance revenue and insurance service expenses recognized in profit or loss must not contain any investment components.

Insurance finance income or expenses generally comprises the changes in the carrying amount of the GIC arising from the effect of the time value of money, the effect of financial risk, and changes in these effects. Depending on the measurement approach, various accounting policy choices can be made, such as the option of recognition in other comprehensive income

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

» 05 Segment information

INFORMATION ON OPERATING SEGMENTS FOR THE PERIOD JANUARY 1 TO JUNE 30, 2023

€ million	BSH	R+V	TeamBank	UMH
Net interest income	244	-	268	17
Net fee and commission income	-6	-	-22	988
Gains and losses on trading activities	-	-	-	-
Gains and losses on investments	-	-	-	-2
Other gains and losses on valuation of financial instruments	3	-	-1	71
Gains and losses from the derecognition of financial assets measured at amortized cost	-	-	-	-
Insurance service result	-	1,152	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	2,104	-	-
Insurance finance income or expenses	-	-2,496	-	-
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	-	3	-	-
Loss allowances	-4	-	-51	-
Administrative expenses	-269	-	-143	-595
Other net operating income	18	-2	6	-37
Profit/loss before taxes	**-14**	**762**	**57**	**442**
Cost/income ratio (%)	>100.0	-	57.0	57.4
Regulatory RORAC (%)	-2.3	17.1	23.4	>100.0
Average own funds/solvency requirement	1,261	8,895	487	649
Total assets/total equity and liabilities as at Jun. 30, 2023	85,258	124,760	10,595	4,334

	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DZ BANK – holding function	Other/ Consolidation	**Total**
	658	346	70	60	-55	255	1,863
	203	5	109	-14	-	51	1,314
	584	-1	10	-	-	-300	293
	-1	-	-	-	-	-5	-8
	-91	27	3	-	-	51	63
	5	-	-	-	-	-	5
	-	-	-	-	-	11	1,163
	-	-	-	-	-	-29	2,075
	-	-	-	-	-	-	-2,496
	-	-	-	-	-	-	3
	36	-20	-	-12	-	-1	-52
	-732	-153	-144	-37	-139	-108	-2,320
	35	9	5	-3	-	20	51
	697	**212**	**53**	**-6**	**-194**	**-55**	**1,954**
	52.5	39.6	73.1	86.0	-	-	53.6
	25.7	31.4	33.0	-7.7	-	-	21.1
	5,421	1,354	320	160	-	-	18,548
	387,901	88,423	24,194	3,419	23,832	-99,342	653,374

INFORMATION ON OPERATING SEGMENTS FOR THE PERIOD JANUARY 1 TO JUNE 30, 2022

€ million	BSH	R+V	TeamBank	UMH
Net interest income	419	-	247	-
Net fee and commission income	13	-	8	1,000
Gains and losses on trading activities	-	-	-	-
Gains and losses on investments	-46	-	-	-49
Other gains and losses on valuation of financial instruments	-1	-	4	-56
Gains and losses from the derecognition of financial assets measured at amortized cost	6	-	-	-
Insurance service result	-	975	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-3,576	-	-
Insurance finance income or expenses	-	2,367	-	-
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	-	6	-	-
Loss allowances	-6	-	-53	-
Administrative expenses	-258	-	-141	-564
Other net operating income	42	-5	3	39
Profit/loss before taxes	**168**	**-233**	**68**	**371**
Cost/income ratio (%)	59.6	-	53.8	60.4
Regulatory RORAC (%)	25.9	-5.0	22.9	>100.0
Average own funds/solvency requirement	1,299	9,326	593	542
Total assets/total equity and liabilities as at Dec. 31, 2022	85,599	119,300	10,611	4,818

	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DZ BANK – holding function	Other/ Consolidation	**Total**
	474	387	34	58	-9	-135	1,475
	262	12	112	-15	-	-28	1,364
	347	-1	11	-	-	2	359
	-1	33	-	-	-	10	-53
	-6	73	-2	-	-	93	105
	5	-	-2	-	-	2	11
	-	-	-	-	-	76	1,051
	-	-	-	-	-	-26	-3,602
	-	-	-	-	-	-	2,367
	-	-	-	-	-	-	6
	-44	-14	-	-3	-	60	-60
	-679	-162	-137	-38	-133	-130	-2,242
	12	7	2	-	-	56	156
	369	**335**	**19**	**3**	**-143**	**-19**	**938**
	62.1	31.7	88.4	88.4	-	-	69.2
	12.6	48.8	11.1	3.5	-	-	9.6
	5,846	1,372	341	169	-	-	19,488
	367,462	89,181	25,447	3,367	21,557	-98,945	628,397

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 the former DVB Bank SE, Frankfurt am Main, (DVB) into DZ BANK in the second half of 2022, changes were made to the internal reporting. DVB no longer constitutes a separate management unit and is therefore included under ‘Other/Consolidation’. The figures for the prior-year period 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.

» 06 Net interest income

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
INTEREST INCOME AND CURRENT INCOME AND EXPENSE	**6,135**	**2,228**
Interest income from	**6,093**	**2,193**
Lending and money market business	5,101	2,362
Bonds and other fixed-income securities	404	210
Portfolio hedges of interest-rate risk	595	-204
Financial assets with a negative effective interest rate	-6	-176
Other assets	-1	-
Current income and expense from	**42**	**35**
Shares and other variable-yield securities	15	10
of which income from other shareholdings	9	9
Investments in subsidiaries	2	2
Entities accounted for using the equity method	25	23
of which relating to investments in joint ventures	19	25
of which relating to investments in associates	6	-2
INTEREST EXPENSE ON	**-4,273**	**-752**
Deposits from banks and customers	-3,294	-907
Debt certificates issued including bonds	-720	-243
Subordinated capital	-75	-30
Portfolio hedges of interest-rate risk	-187	44
Financial liabilities with a positive effective interest rate	12	387
Provisions and other liabilities	-8	-3
Total	**1,863**	**1,475**

The interest income from other assets included gains from non-credit-risk-related modifications of €2 million (first half of 2022: €0 million) and losses from non-credit-risk-related modifications of €3 million (first half of 2022: €0 million), such gains and losses resulting from financial assets. The interest expense on provisions and other liabilities included interest expense on lease liabilities of €4 million (first half of 2022: €2 million).

» 07 Net fee and commission income

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Fee and commission income	**2,599**	**2,732**
Securities business	1,989	2,156
Asset management	167	179
Payments processing including card processing	190	161
Lending business and trust activities	91	74
Financial guarantee contracts and loan commitments	44	35
International business	6	7
Building society operations	18	22
Other	94	98
Fee and commission expenses	**-1,285**	**-1,368**
Securities business	-929	-980
Asset management	-101	-114
Payments processing including card processing	-108	-84
Lending business	-40	-34
Financial guarantee contracts and loan commitments	-6	-6
Building society operations	-36	-28
Other	-65	-122
Total	**1,314**	**1,364**

In the reporting period, fee and commission income included revenue from contracts with customers pursuant to IFRS 15 in an amount of €2,592 million (first half of 2022: €2,723 million); see note 59.

» 08 Gains and losses on trading activities

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Gains and losses on non-derivative financial instruments and embedded derivatives	-937	3,628
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	-68	2,026
Gains and losses on derivatives	1,216	-3,387
Gains and losses on exchange differences	14	118
Total	**293**	**359**

Gains and losses on exchange differences included currency translation gains of €9 million on financial instruments not measured at fair value through profit or loss (first half of 2022: losses of €6 million).

» 09 Gains and losses on investments

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Gains and losses on the disposal of bonds and other fixed-income securities	**-1**	-14
Gains and losses on the disposal of shares and other variable-yield securities	**-2**	-49
Gains and losses on investments in associates	**-5**	11
Disposals	-	11
Impairment losses	-8	-
Reversals of impairment losses	3	-
Total	**-8**	**-53**

» 10 Other gains and losses on valuation of financial instruments

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Gains and losses from fair value hedge accounting	**-27**	6
Gains and losses on derivatives used for purposes other than trading	**68**	66
Gains and losses on financial instruments designated as at fair value through profit or loss	**-21**	82
Gains and losses on non-derivative financial instruments and embedded derivatives that are not related to derivatives held for trading purposes	-79	240
Gains and losses on derivatives	58	-158
Gains and losses on financial assets mandatorily measured at fair value through profit or loss	**43**	-50
Total	**63**	**105**

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.

» 11 Insurance service result

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Insurance revenue	**6,209**	6,380
Insurance service expenses	**-4,957**	-5,266
Net income/expenses from reinsurance contracts held	**-89**	-63
Reinsurance revenue	-130	-158
Reinsurance service expenses	41	95
Total	**1,163**	**1,051**

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

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Income from investments held by insurance companies	**3,369**	2,980
Interest income and current income	1,247	1,230
Income from reversals of impairment losses and reversals of loss allowances, and unrealized gains	119	781
Gains on valuation through profit or loss of investments held by insurance companies	1,791	623
Gains on disposals	212	347
Expenses in connection with investments held by insurance companies	**-1,098**	-6,631
Administrative expenses	-96	-102
Depreciation/amortization expense, additions to loss allowances, and impairment losses and unrealized losses	-236	-159
Losses on valuation through profit or loss of investments held by insurance companies	-452	-5,354
Losses on disposals	-315	-1,016
Other non-insurance gains and losses	**-196**	49
Total	**2,075**	**-3,602**

Income from and expenses in connection with investments held by insurance companies included additions to loss allowances of €11 million (first half of 2022: €41 million) and reversals of loss allowances of €32 million (first half of 2022: €25 million).

» 13 Insurance finance income or expenses

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Insurance finance income or expenses	-2,496	2,367
Insurance finance income or expenses of reinsurance companies	1	-
Total	**-2,496**	**2,367**

» 14 Loss allowances

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Loss allowances for loans and advances to banks	**9**	-13
Additions	-19	-32
Reversals	27	18
Recoveries on loans and advances to banks previously impaired	1	1
Loss allowances for loans and advances to customers	**-81**	-42
Additions	-1,122	-1,077
Reversals	985	995
Directly recognized impairment losses	-23	-12
Recoveries on loans and advances to customers previously impaired	60	39
Other	18	12
Loss allowances for investments	**6**	3
Additions	-6	-7
Reversals	12	10
Loss allowances for other assets	**-1**	-
Reversals	1	-
Directly recognized impairment losses	-2	-
Other loss allowances for loans and advances	**14**	-7
Additions to and reversals of provisions for loan commitments	18	-5
Additions to and reversals of provisions for financial guarantee contracts	-4	-
Additions to and reversals of other provisions for loans and advances	-1	-2
Total	**-52**	**-60**

Gains and losses from credit-risk-related modifications and other gains and losses on financial assets that are purchased or originated credit-impaired assets (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.

» 15 Administrative expenses

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Staff expenses	-1,044	-1,001
General and administrative expenses	-1,135	-1,100
Depreciation and amortization	-141	-140
Total	**-2,320**	**-2,242**

» 16 Other net operating income

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Income from the reversal of provisions and accruals	74	72
Impairment losses on other intangible assets	-50	-
Gains on the disposal of other assets	11	23
Expenses for other taxes	-11	-10
Gains and losses on non-current assets and disposal groups classified as held for sale	3	27
Residual other net operating income	25	43
Total	**51**	**156**

» 17 Income taxes

IAS 34 states that income taxes in interim consolidated financial statements are to be calculated on the basis of the best possible estimate of the weighted average tax rate for the year as a whole. This tax rate is based on the legislation that is in force or has been adopted at the relevant balance sheet date.

» 18 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	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Gains and losses on debt instruments measured at fair value through other comprehensive income	**935**	**-17,781**
Gains (+)/losses (-) arising during the reporting period	845	-17,907
Gains (-)/losses (+) reclassified to the income statement during the reporting period	90	126
Exchange differences on currency translation of foreign operations	**-1**	**35**
Gains (+)/losses (-) arising during the reporting period	-1	34
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-	1
Insurance finance income or expenses included in other comprehensive income	**-1,107**	**14,190**
Gains (+)/losses (-) arising during the reporting period	-1,107	14,190
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	**-8**	**8**
Gains (+)/losses (-) arising during the reporting period	-8	8

» 19 Income taxes relating to components of other comprehensive income

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

	Jan. 1–Jun. 30, 2023			Jan. 1–Jun. 30, 2022		
€ million	Amount before taxes	Income taxes	Amount after taxes	Amount before taxes	Income taxes	Amount after taxes
Items that may be reclassified to the income statement	**-180**	**-7**	**-188**	**-3,549**	**1,163**	**-2,386**
Gains and losses on debt instruments measured at fair value through other comprehensive income	935	-239	696	-17,781	5,570	-12,211
Exchange differences on currency translation of foreign operations	-1	2	1	35	-3	32
Insurance finance income or expenses included in other comprehensive income	-1,107	230	-877	14,190	-4,403	9,786
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-8	-	-8	8	-	8
Items that will not be reclassified to the income statement	**549**	**-153**	**397**	**-503**	**136**	**-367**
Gains and losses on equity instruments for which the fair value OCI option has been exercised	267	-67	201	-940	262	-678
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	316	-99	217	-15	6	-9
Gains and losses arising from remeasurement of defined benefit plans	-34	13	-21	452	-133	319
Total	**369**	**-160**	**209**	**-4,052**	**1,299**	**-2,752**

C Balance sheet disclosures

» 20 Cash and cash equivalents

€ million	Jun. 30, 2023	Dec. 31, 2022
Cash on hand	272	312
Balances with central banks	113,079	93,405
Total	**113,351**	**93,717**

» 21 Loans and advances to banks

	Repayable on demand		Other loans and advances		Total	
€ million	Jun. 30, 2023	Dec. 31, 2022	Jun. 30, 2023	Dec. 31, 2022	Jun. 30, 2023	Dec. 31, 2022
Domestic banks	**7,306**	6,666	**115,751**	107,350	**123,057**	114,015
Affiliated banks	3,815	4,033	112,511	103,471	116,326	107,505
Other banks	3,491	2,632	3,240	3,878	6,731	6,510
Foreign banks	**2,377**	2,636	**4,632**	6,793	**7,008**	9,429
Total	**9,682**	9,301	**120,383**	114,142	**130,065**	123,444

» 22 Loans and advances to customers

€ million	Jun. 30, 2023	Dec. 31, 2022
Loans and advances to domestic customers	177,997	176,145
Loans and advances to foreign customers	27,410	27,501
Total	**205,407**	**203,646**

» 23 Hedging instruments (positive fair values)

Hedging instruments (positive fair values) amounted to €1,292 million (December 31, 2022: €1,568 million) and resulted solely from derivatives used as fair value hedges.

» 24 Financial assets held for trading

€ million	Jun. 30, 2023	Dec. 31, 2022
DERIVATIVES (POSITIVE FAIR VALUES)	**18,850**	**21,474**
Interest-linked contracts	16,017	17,779
Currency-linked contracts	1,854	2,956
Share-/index-linked contracts	771	547
Other contracts	10	6
Credit derivatives	198	187
BONDS AND OTHER FIXED-INCOME SECURITIES	**9,661**	**7,729**
Money market instruments	1,040	212
Bonds	8,620	7,517
SHARES AND OTHER VARIABLE-YIELD SECURITIES	**1,386**	**1,388**
Shares	1,382	1,381
Investment fund units	4	7
RECEIVABLES	**7,893**	**18,318**
of which from affiliated banks	274	76
of which from other banks	7,038	16,915
Money market placements	**6,868**	**17,058**
with banks	6,758	16,322
with customers	110	737
Promissory notes and registered bonds	**1,025**	**1,259**
from banks	553	669
from customers	471	590
Total	**37,790**	**48,909**

» 25 Investments

€ million	Jun. 30, 2023	Dec. 31, 2022
Bonds and other fixed-income securities	**43,325**	**40,731**
Money market instruments	1,488	1,070
Bonds	41,837	39,661
Shares and other variable-yield securities	**2,691**	**1,962**
Shares and other shareholdings	441	470
Investment fund units	2,250	1,491
Other variable-yield securities	-	1
Investments in subsidiaries	**232**	**236**
Investments in joint ventures	**329**	**320**
Investments in associates	**133**	**144**
Total	**46,710**	**43,393**

The carrying amount of investments in joint ventures accounted for using the equity method totaled €326 million (December 31, 2022: €317 million). €128 million of the investments in associates has been accounted for using the equity method (December 31, 2022: €131 million).

» 26 Investments held by insurance companies

€ million	Jun. 30, 2023	Dec. 31, 2022
Investment property	3,974	4,028
Investments in subsidiaries	819	840
Investments in joint ventures	71	69
Investments in associates	1	1
Mortgage loans	11,365	10,960
Promissory notes and loans	5,903	5,946
Registered bonds	5,370	5,430
Other loans	1,039	834
Variable-yield securities	12,563	13,023
Fixed-income securities	50,671	47,652
Derivatives (positive fair values)	90	278
Deposits with ceding insurers and other investments	73	56
Assets related to unit-linked contracts	19,268	16,429
Total	**111,206**	**105,548**

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

€ million	Jun. 30, 2023	Dec. 31, 2022
Land and buildings	861	867
Office furniture and equipment	174	179
Investment property	289	293
Right-of-use assets	589	622
Total	**1,913**	**1,960**

» 28 Other assets

€ million	Jun. 30, 2023	Dec. 31, 2022
Other assets held by insurance companies	3,373	3,799
Goodwill	155	155
Other intangible assets	446	508
of which software	405	415
of which acquired customer relationships	10	60
Other loans and advances	521	464
Residual other assets	1,160	1,693
Total	**5,654**	**6,619**

Residual other assets included initial margins from client clearing of €660 million (December 31, 2022: €1,129 million).

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

€ million	Jun. 30, 2023	Dec. 31, 2022
Intangible assets	**136**	145
Reinsurance contract assets	**391**	560
Liability for remaining coverage	40	36
Liability for incurred claims	351	524
Insurance contract assets	**-**	2
Liability for remaining coverage	3	3
Liability for incurred claims	-3	-1
Receivables	**901**	1,033
Credit balances with banks, checks and cash on hand	**297**	703
Property, plant and equipment	**420**	410
Residual other assets	**1,229**	947
Loss allowances	**-1**	-1
Total	3,373	3,799

Property, plant and equipment included right-of-use assets amounting to €70 million (December 31, 2022: €64 million).

» 29 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, 2022	14	2	8	264	364	1,267	13
Additions	16	6	10	154	417	490	15
Utilizations	-	-	-	-	-1	-214	-2
Reversals	-14	-2	-1	-246	-205	-534	-9
Other changes	-1	1	-1	102	-162	103	-
Balance as at Jun. 30, 2022	**15**	**6**	**16**	**274**	**413**	**1,113**	**17**
Balance as at Jan. 1, 2023	17	5	32	244	535	1,157	18
Additions	15	1	3	120	434	553	14
Utilizations	-	-	-	-	-1	-96	-2
Reversals	-17	-3	-8	-218	-293	-461	-13
Other changes	-	-	1	108	-163	54	-5
Balance as at Jun. 30, 2023	**16**	**3**	**27**	**255**	**512**	**1,208**	**11**

	Investments			Other assets	Total
€ million	Stage 1	Stage 2	Stage 3	Stage 1	
Balance as at Jan. 1, 2022	4	13	5	2	1,956
Additions	1	2	-	-	1,111
Utilizations	-	-	-	-	-217
Reversals	-1	-3	-2	-	-1,017
Other changes	-	-	-	-	42
Balance as at Jun. 30, 2022	**4**	**12**	**3**	**2**	**1,874**
Balance as at Jan. 1, 2023	4	11	4	2	2,029
Additions	1	1	1	-	1,143
Utilizations	-	-	-	-	-100
Reversals	-4	-2	-1	-1	-1,021
Other changes	3	-3	-	-	-5
Balance as at Jun. 30, 2023	**3**	**6**	**4**	**1**	**2,047**

» 30 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.

The disposal groups not qualifying as discontinued operations include units in various investment funds. The non-current assets individually classified as held for sale comprise real estate, investments in associates, and other shareholdings. The sale of these non-current assets individually classified as held for sale is expected to take place in the second half of 2023.

The sale of non-current assets individually classified as held for sale gave rise to income of €3 million in the first half of 2023, which was recognized under other net operating income.

» 31 Deposits from banks

€ million	Repayable on demand Jun. 30, 2023	Repayable on demand Dec. 31, 2022	With agreed maturity or notice period Jun. 30, 2023	With agreed maturity or notice period Dec. 31, 2022	Total Jun. 30, 2023	Total Dec. 31, 2022
Domestic banks	**36,684**	46,067	**120,935**	124,645	**157,619**	170,712
Affiliated banks	31,646	41,487	30,842	33,705	62,488	75,192
Other banks	5,038	4,580	90,093	90,940	95,132	95,520
Foreign banks	**12,100**	7,093	**11,786**	8,983	**23,886**	16,075
Total	**48,784**	53,160	**132,721**	133,628	**181,505**	186,787

» 32 Deposits from customers

€ million	Repayable on demand Jun. 30, 2023	Repayable on demand Dec. 31, 2022	With agreed maturity or notice period Jun. 30, 2023	With agreed maturity or notice period Dec. 31, 2022	Total Jun. 30, 2023	Total Dec. 31, 2022
Domestic customers	35,315	30,418	100,681	99,261	135,996	129,679
Foreign customers	21,545	17,265	6,850	12,485	28,395	29,750
Total	**56,860**	47,682	**107,531**	111,747	**164,391**	159,429

» 33 Debt certificates issued including bonds

€ million	Jun. 30, 2023	Dec. 31, 2022
Bonds issued	**80,062**	68,271
Mortgage Pfandbriefe	30,058	28,968
Public-sector Pfandbriefe	1,626	1,232
Other bonds	48,378	38,071
Other debt certificates issued	**19,991**	14,077
Total	**100,053**	82,349

As was also the case as at December 31, 2022, all other debt certificates issued are commercial paper.

» 34 Hedging instruments (negative fair values)

Hedging instruments (negative fair values) amounted to €651 million (December 31, 2022: €442 million) and resulted solely from derivatives used as fair value hedges.

» 35 Financial liabilities held for trading

€ million	Jun. 30, 2023	Dec. 31, 2022
DERIVATIVES (NEGATIVE FAIR VALUES)	**21,858**	**26,641**
Interest-linked contracts	18,140	21,217
Currency-linked contracts	1,904	3,148
Share-/index-linked contracts	1,523	1,899
Other contracts	206	270
Credit derivatives	84	107
SHORT POSITIONS	**2,094**	**1,017**
BONDS ISSUED	**21,582**	**20,014**
DEPOSITS	**7,274**	**4,806**
of which from affiliated banks	3,570	3,705
of which from other banks	3,553	954
Money market deposits	**7,122**	**4,652**
from banks	7,056	4,592
from customers	67	60
Promissory notes and registered bonds issued	**151**	**155**
to banks	68	68
to customers	83	87
Total	**52,807**	**52,478**

As was also the case as at December 31, 2022, bonds issued mainly comprise share certificates and index-linked certificates.

» 36 Provisions

€ million	Jun. 30, 2023	Dec. 31, 2022
Provisions for employee benefits	**1,331**	**1,356**
Provisions for defined benefit plans	950	922
Provisions for other long-term employee benefits	185	200
of which for semi-retirement schemes	69	72
Provisions for termination benefits	180	206
of which for early retirement schemes	25	26
of which for restructuring	114	135
Provisions for short-term employee benefits	16	28
Provisions for share-based payment transactions	**41**	**51**
Other provisions	**1,692**	**1,841**
Provisions for onerous contracts	23	30
Provisions for restructuring	8	16
Provisions for loan commitments	129	147
Provisions for financial guarantee contracts	93	89
Other provisions for loans and advances	53	51
Provisions relating to building society operations	977	1,053
Residual provisions	410	455
Total	**3,064**	**3,248**

The underlying discount rate used to measure the defined benefit obligations fell from 3.70 percent as at December 31, 2022 to 3.60 percent as at June 30, 2023. The assumptions about salary and annuity trends were unchanged compared with December 31, 2022.

» 37 Insurance contract liabilities

€ million	Jun. 30, 2023	Dec. 31, 2022
Insurance contract liabilities	**102,238**	**97,648**
Liability for remaining coverage	90,805	85,989
Liability for incurred claims	11,433	11,659
Reinsurance contract liabilities	**1**	**-**
Liability for remaining coverage	2	1
Liability for incurred claims	-1	-
Total	**102,239**	**97,649**

» 38 Other liabilities

€ million	Jun. 30, 2023	Dec. 31, 2022
Other liabilities of insurance companies	5,565	5,534
Accruals	987	1,485
Other payables	220	221
Lease liabilities	610	637
Residual other liabilities	1,045	1,083
Total	**8,426**	**8,960**

Residual other liabilities included initial margins from client clearing of €637 million (December 31, 2022: €764 million).

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

€ million	Jun. 30, 2023	Dec. 31, 2022
Other provisions	352	354
Payables and residual other liabilities	5,213	5,180
Total	**5,565**	**5,534**

Other provisions included provisions for defined benefit plans of €122 million (December 31, 2022: €119 million). The underlying discount rate used to measure the defined benefit obligations fell from 3.70 percent as at December 31, 2022 to 3.60 percent as at June 30, 2023. The assumptions about salary and annuity trends were unchanged compared with December 31, 2022.

Payables and residual other liabilities included lease liabilities of €81 million (December 31, 2022: €80 million).

» 39 Subordinated capital

€ million	Jun. 30, 2023	Dec. 31, 2022
Subordinated liabilities	4,377	4,510
Share capital repayable on demand	12	12
Total	**4,389**	**4,521**

» 40 Equity

Reserve from other comprehensive income

As a result of the introduction of IFRS 17, the breakdown of the reserve from other comprehensive income, which was described in the consolidated financial statements for the year ended December 31, 2022, has been expanded to include a reserve for insurance contracts measured at fair value through other comprehensive income. This reserve contains the cumulative insurance finance income or expenses that were recognized in other comprehensive income taking deferred taxes into account.

Additional equity components

Additional Tier 1 notes

In the period under review, DZ BANK issued a tranche of additional Tier 1 notes (AT1 bonds) with a total volume of €1,143 million.

The AT1 bonds are split into 3 types depending on their interest-rate arrangements (types A to C). Type A has a variable interest rate, whereas types B and C have fixed interest rates. At the end of the fixed-interest period, type B is aligned with the variable interest rate attaching to type A. In the case of type C, a new interest rate will be fixed every 5 years. Interest is payable annually. The date for the payment of interest has been specified as August 1 each year.

In previous years, DZ BANK had issued tranches of 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. In addition, the competent supervisory authority can prohibit the interest payments, either wholly or in part. 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.

Breakdown of changes in equity by component of other comprehensive income

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 compre-hensive income	Currency translation reserve	Reserve for insurance contracts measured at fair value through other compre-hensive income
Equity as at Jan. 1, 2022	621	-54	1,025	58	-
Restatements according to IAS 8	572	-	2,355	3	-2,762
Equity restated as at Jan. 1, 2022	1,193	-54	3,380	61	-2,762
Other comprehensive income/loss	-609	-9	-10,941	41	8,795
Total comprehensive income/loss	**-609**	**-9**	**-10,941**	**41**	**8,795**
Changes in scope of consolidation	4	-	-	-	-
Acquisition/disposal of non-controlling interests	-	-	2	-	-
Reclassifications within equity	-110	-5	-	-	-
Equity as at Jun. 30, 2022	**478**	**-67**	**-7,559**	**102**	**6,033**
Equity as at Jan. 1, 2023	690	59	-10,786	80	8,829
Other comprehensive income/loss	179	217	603	-12	-780
Total comprehensive income/loss	**179**	**217**	**603**	**-12**	**-780**
Acquisition/disposal of non-controlling interests	-	-	16	-	-16
Reclassifications within equity	-190	-1	-	-	-
Equity as at Jun. 30, 2023	**679**	**275**	**-10,166**	**68**	**8,034**

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

	Investments		**Investments held by insurance companies**			**Total**
€ million	Stage 1	Stage 3	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2022	7	24	19	2	1	53
Restatements according to IAS 8	-	-	22	6	-	27
Balance restated as at Jan. 1, 2022	7	24	40	8	1	81
Additions	4	-	22	16	2	45
Utilizations	-	-	-	-	-2	-2
Reversals	-3	-	-16	-9	-	-29
Other changes	-	-	-5	-2	-	-7
Balance as at Jun. 30, 2022	**8**	**24**	**42**	**14**	**1**	**89**
Balance as at Jan. 1, 2023	7	24	34	17	1	83
Additions	3	-	4	1	6	15
Utilizations	-	-	-	-	-6	-6
Reversals	-4	-	-27	-5	-	-37
Other changes	-	-	17	-8	-	9
Balance as at Jun. 30, 2023	**6**	**24**	**27**	**5**	**1**	**63**

The information on regulatory capital and on capital management pursuant to IAS 1.134-136, which also forms part of these IFRS interim consolidated financial statements, can be found in the interim group management report in chapter VI 'Risk report', section 5 'Capital adequacy'.

D Financial instruments and fair value disclosures

» 41 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	Jun. 30, 2023 Carrying amount	Jun. 30, 2023 Fair value	Dec. 31, 2022 Carrying amount	Dec. 31, 2022 Fair value
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**185,123**	**185,144**	**187,855**	**187,870**
Financial assets measured at fair value through profit or loss	**77,245**	**77,266**	**85,556**	**85,571**
Financial assets mandatorily measured at fair value through profit or loss	***72,124***	***72,145***	***80,128***	***80,142***
Loans and advances to customers	205	205	192	192
Hedging instruments (positive fair values)	1,292	1,292	1,568	1,568
Financial assets held for trading	37,790	37,811	48,909	48,923
Investments	3,206	3,206	2,489	2,489
Investments held by insurance companies	29,630	29,630	26,970	26,970
Financial assets designated as at fair value through profit or loss	***5,121***	***5,121***	***5,428***	***5,428***
Loans and advances to banks	1,248	1,248	1,340	1,340
Loans and advances to customers	595	595	753	753
Investments	3,278	3,278	3,336	3,336
Financial assets measured at fair value through other comprehensive income	**107,822**	**107,822**	**102,280**	**102,280**
Financial assets mandatorily measured at fair value through other comprehensive income	***102,046***	***102,046***	***95,861***	***95,861***
Loans and advances to banks	55	55	55	55
Loans and advances to customers	2,063	2,063	2,070	2,070
Investments	27,799	27,799	25,244	25,244
Investments held by insurance companies	72,130	72,130	68,492	68,492
Financial assets designated as at fair value through other comprehensive income	***5,776***	***5,776***	***6,419***	***6,419***
Investments	467	467	504	504
Investments held by insurance companies	5,310	5,310	5,916	5,916
Non-current assets and disposal groups classified as held for sale	**56**	**56**	**19**	**19**
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**451,132**	**429,854**	**422,802**	**401,048**
Cash and cash equivalents	113,079	113,078	93,405	93,400
Loans and advances to banks	128,715	119,049	121,994	111,969
Loans and advances to customers	200,049	184,757	198,125	182,465
Investments	11,492	11,273	11,354	11,129
Investments held by insurance companies	90	99	85	73
Other assets	1,599	1,599	2,011	2,011
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-3,891		-4,173	
FINANCE LEASES	**510**	**506**	**552**	**555**
Loans and advances to customers	509	505	552	555

€ million	Jun. 30, 2023 Carrying amount	Jun. 30, 2023 Fair value	Dec. 31, 2022 Carrying amount	Dec. 31, 2022 Fair value
FINANCIAL LIABILITIES MEASURED AT FAIR VALUE	**79,116**	**79,053**	**78,755**	**78,668**
Financial liabilities mandatorily measured at fair value through profit or loss	**53,545**	**53,488**	**53,142**	**53,068**
Hedging instruments (negative fair values)	651	651	442	442
Financial liabilities held for trading	52,807	52,750	52,478	52,404
Other liabilities	87	87	223	223
Financial liabilities designated as at fair value through profit or loss	**25,571**	**25,564**	**25,612**	**25,600**
Deposits from banks	3,734	3,734	3,888	3,887
Deposits from customers	6,220	6,213	6,089	6,081
Debt certificates issued including bonds	15,618	15,618	15,565	15,562
Subordinated capital	-	-	69	69
FINANCIAL LIABILITIES MEASURED AT AMORTIZED COST	**425,708**	**411,232**	**408,306**	**392,653**
Deposits from banks	177,772	169,792	182,899	173,934
Deposits from customers	158,171	156,292	153,339	151,400
Debt certificates issued including bonds	84,435	79,163	66,783	61,413
Other liabilities	2,077	2,077	1,979	1,979
Subordinated capital	4,389	3,907	4,452	3,928
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-1,136		-1,147	
LEASES	**690**	**690**	**717**	**717**
Other liabilities	690	690	717	717
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**222**	**614**	**236**	**780**
Financial guarantee contracts	**93**	**93**	**89**	**89**
Provisions	93	93	89	89
Loan commitments	**129**	**522**	**147**	**691**
Provisions	129	522	147	691

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, is compared with the balance of the carrying amounts from building society operations below. The balance of the carrying amounts from building society operations amounted to minus €62,536 million (excess of liabilities; December 31, 2022: minus €64,430 million), whereas the collective present value came to minus €53,329 million (December 31, 2022: minus €54,469 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 valuation parameters.

» 42 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 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, plus deferral of the day-one profit or loss. The unrecognized difference is amortized to profit or loss over the term.

The following table shows the deferred, previously unrecognized differences.

	Measured at fair value	
€ million	Financial assets	Financial liabilities
Balance as at Jan. 1, 2022	57	14
Additions as a result of transactions	5	11
Differences amortized to profit or loss	-5	-3
Reclassifications	-40	40
Balance as at Jun. 30, 2022	**17**	**62**
Balance as at Jan. 1, 2023	14	87
Additions as a result of transactions	9	19
Differences amortized to profit or loss	-2	-42
Balance as at Jun. 30, 2023	**21**	**64**

» 43 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	**Jun. 30, 2023**	Dec. 31, 2022	**Jun. 30, 2023**	Dec. 31, 2022	**Jun. 30, 2023**	Dec. 31, 2022
Assets	**86,364**	69,475	**72,398**	94,824	**26,383**	23,570
Loans and advances to banks	-	-	1,303	1,395	-	-
Loans and advances to customers	-	-	2,230	2,419	632	596
Hedging instruments (positive fair values)	-	-	1,285	1,568	7	-
Financial assets held for trading	7,806	1,394	28,467	46,906	1,538	623
Investments	20,246	13,020	11,613	16,567	2,891	1,985
Investments held by insurance companies	58,312	55,061	27,443	25,951	21,314	20,366
Non-current assets and disposal groups classified as held for sale	-	-	56	19	-	-
Liabilities	**2,004**	3,059	**78,030**	77,080	**1,137**	572
Deposits from banks	-	-	3,734	3,887	-	-
Deposits from customers	-	-	6,086	6,081	127	-
Debt certificates issued including bonds	-	2,987	15,180	12,170	438	404
Hedging instruments (negative fair values)	-	-	648	442	3	-
Financial liabilities held for trading	1,994	51	50,188	52,255	568	98
Insurance contract liabilities	-	-	2,118	2,043	-	-
Other liabilities	9	21	77	201	-	-
Subordinated capital	-	-	-	-	-	69

The investments held by insurance companies measured at fair value include assets related to unit-linked contracts. These are offset within insurance contract liabilities by financial liabilities that arise from unit-linked insurance products and are measured using the variable fee approach under IFRS 17, and by liabilities measured at fair value from investment contracts that are allocated to unit-linked life insurance.

Transfers

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

	Transfers from Level 1 to Level 2		Transfers from Level 2 to Level 1	
€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Financial assets measured at fair value	**2,038**	791	**15,103**	468
Financial assets held for trading	46	-	6,394	-
Investments	1,552	5	8,060	35
Investments held by insurance companies	440	786	649	433
Financial liabilities measured at fair value	**2,534**	-	**1,665**	-
Debt certificates issued including bonds	2,520	-	-	-
Financial liabilities held for trading	13	-	1,665	-

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 material valuation parameter 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.

Prices in active markets are used (provided these prices are available) for the fair value measurement of loans and advances as well as unstructured bonds. Otherwise, the DCF method is mainly used. 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 material 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 measurement of shares and other variable-yield securities and of other shareholdings is 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 measurement of investment fund units is 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 measurement is 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. Next, 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.

If the value of the financial instruments is based on unobservable inputs and they are thus assigned to Level 3 of the fair value hierarchy, the exact value of these inputs can be determined as at the balance sheet date from a range of appropriate possible alternatives. Determining the value for the inputs from a range has an impact on the fair value recognized. The following disclosures explain the material unobservable input categories (known as risk categories) for Level -3 financial instruments. These categories are factored into the significance analysis. Their areas of application are also shown below.

The method for assessing the observability of inputs was refined as at June 30, 2023. In respect of financial instruments with unrecognized differences at the time of initial recognition, the resulting change of estimate led to the amortization to profit or loss of the day-one profit or loss previously deferred of €41 million.

Risk categories

ABS spreads

ABS spreads encompass ABS spread curves derived from sector, rating, or expert assessments. These curves are used, for example, to measure asset-backed securities (ABSs) and other structured bonds. The presentation of the sensitivities to ABS spreads relates to a shift of plus 1 basis point.

Adjustment spreads

Adjustment spreads help to calibrate model prices to transaction prices. They are particularly factored into the measurement of bonds and registered securities. Financial instruments for which adjustment spreads are available are all assigned to Level 3 as these generally have their own specific unobservable spreads with a significant effect on fair value. The presentation of the sensitivities to adjustment spreads relates to a shift of plus 1 basis point.

Probability of default

Probability of default describes a banking regulation-related risk parameter used to measure credit risk. The probability of default of a borrower, issuer, or counterparty is the probability that the borrower, issuer, or counterparty will not be able to meet its payment obligations or other contractual obligations in the future. The presentation of the sensitivities to probability of default relates to a shift of plus 1 basis point.

Bond spreads

Bond spreads contain both credit rating-related and issuer-related spread curves for corporates and governments. Also in this category are benchmark bond spread curves that, for example, are factored into the measurement of issues, bonds, promissory notes, bond futures, and bond options. The presentation of the sensitivities to bond spreads relates to a shift of plus 1 basis point.

Commodity prices

This category includes not only commodity prices but also prices for commodity indices. These are frequently factored into the measurement of futures, options, swaps, and structured issues. The presentation of the sensitivities to commodity prices relates to a shift of plus 1 percent in relation to fair value.

Credit default swap spreads (CDS spreads)
CDS spreads encompass credit default swap spreads for corporates and governments. They are used to measure credit default swaps and are factored into the measurement of structured issues. The presentation of the sensitivities to CDS spreads relates to a shift of plus 1 basis point.

Discount rate for investments in companies
The discount rate for investments in companies largely comprises the risk-free basic interest rate, the premium for market risk, and the company-specific beta factor. The presentation of the sensitivities to the discount rate for investments in companies relates to a shift of plus 1 percentage point.

Dividends
This category covers estimated future dividend yields as well as repo yields and convenience yields. The presentation of the sensitivities to dividends relates to a shift of plus 1 percentage point.

Duration
Duration is the unobservable, weighted average lifetime of mortgage-backed securities. The presentation of the sensitivities to duration relates to a shift of plus 1 year.

Equity prices
This category includes not only equity prices but also prices for equity indices. Equity prices are used to measure equities and derivative products based on equities, but they are also used to measure issues and profit-sharing rights. The presentation of the sensitivities to equity prices relates to a shift of plus 1 percent in relation to fair value.

Fair value adjustments
As a component of fair value, fair value adjustments must be taken into account in the significance analysis in their full absolute amount, provided they are unobservable. The absolute amount of the fair value adjustment must be disclosed as the sensitivity.

Fund prices
This category contains prices both for commodity funds and for equity funds. Fund prices are factored into the measurement of funds and issues. The presentation of the sensitivities to fund prices relates to a shift of plus 1 percent in relation to fair value.

Funding and treasury spreads
Funding spreads and treasury spreads are internal measurement spreads for determining the fair values of own issues. The presentation of the sensitivities to funding and treasury spreads relates to a shift of plus 1 basis point.

FX rates
Foreign exchange rates belong to this category. They are factored into the measurement of all products traded in a foreign currency or in which at least one of the underlying instruments being measured is denominated in a foreign currency. The presentation of the sensitivities to FX rates relates to a change in the absolute amount in relation to the euro exchange rate.

Impairment
Impaired financial instruments are generally assigned to Level 3 of the fair value hierarchy. The absolute amount must be disclosed as the sensitivity.

Correlations
These include, for example, correlations between equities, commodities, and currencies that are used in the measurement of derivatives and investment certificates. The presentation of the sensitivities to correlations relates to a shift of plus 1 percentage point.

Mean reversion
This category comprises the unobservable parameter 'mean reversion' in the Hull-White model, which is used to model short rates. The presentation of the sensitivities to mean reversion relates to a shift of plus 1 basis point.

Subordinated spreads
Subordinated spreads include mark-ups for the measurement of tier bonds, depending on the capital's subordination level. They are particularly factored into the measurement of bonds and registered securities. Financial instruments for which subordinated spreads are available are all assigned to Level 3 of the fair value hierarchy as these generally have their own specific unobservable spreads with a significant influence on fair value. The presentation of the sensitivities to subordinated spreads relates to a shift of plus 1 basis point.

Illiquid market prices
In some circumstances, depending on the liquidity of the bond spread curve, liquid market price information may not be available as at the valuation date for marked-to-market financial instruments such as bonds. Where this is the case, the prices are assigned to Level 3 of the fair value hierarchy. The presentation of the sensitivities to illiquid market prices relates to a shift of plus 1 percent in relation to fair value (fair value changes by 1 percent of the current market price).

Volatilities
These include various volatilities for commodities, equities, and currencies as well as cap/floor volatilities and swaption volatilities. For the latter, particularly derivative products such as swaps and options, fly volatilities and risk reversal volatilities are also factored into the calculations. The presentation of the sensitivities to volatilities relates to a shift of plus 1 percentage point for volatilities with log-normal distribution and a shift of plus 1 basis point for volatilities with normal distribution.

Yield curves
In addition to standard yield curves, this category covers cross-currency spread curves and tenor basis spread curves as well as fixing, fund, and swap rates. Yield curves are factored into the measurement of most financial products. The presentation of the sensitivities to yield curves relates to a shift of plus 1 basis point.

Aggregate sensitivity

For each product type whose fair value is based on unobservable inputs and are therefore assigned to Level 3, the inputs used in the measurement of the assets and liabilities are used to determine and present an aggregate sensitivity. The aggregate sensitivity, presented in euros, provides information about the sensitivity of assets and liabilities in each class to a change in the unobservable inputs used in the measurement of this class, such inputs belonging to the risk category identified for this class. The aggregate sensitivity relates to a standardized change in the inputs in the risk category, for example relating to a change of plus 1 basis point. For example, an aggregate sensitivity of €1 million for the 'yield curves' risk category means that a change of plus 10 basis points would result in an increase in fair value of €10 million for the line item.

Measurements of fair value at Level 3 as at June 30, 2023

The following table shows the risk categories, valuation techniques, and the aggregate sensitivities used for the fair value measurements at Level 3 of the fair value hierarchy.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Risk category	Sensitivity reference value	Valuation technique	Aggregate sensitivity (€ million)
Loans and advances to customers	Loans	12	Impairment	Absolute amount (impairment)	Present value for which loss allowances have been recognized	-
	Receivables arising from silent partnerships	52	Impairment	Absolute amount (impairment)	Mark-to-model (DCF)	-1
	Profit-participation certificates and promissory notes	427	Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (DCF)	3
	Profit-participation certificates and promissory notes	26	Impairment	Absolute amount (impairment)	Mark-to-model (DCF)	-
	Shareholders' loans	101	Impairment	Absolute amount (impairment)	Mark-to-model (DCF)	-2
	Initial fund loans	14	Probability of default	Shift of +1 basis point	Mark-to-model (DCF)	-
Derivatives used for hedging (positive fair values)	Derivatives	7	Yield curves	Shift of +1 basis point	Mark-to-model (other)	-
Financial assets held for trading	Equity/commodity basket products	4	Equity prices	Shift of +1% in relation to fair value	Mark-to-market	-
			Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (other)	91
			Volatilities (log-normal)	Shift of +1 percentage point	Mark-to-model (other)	-107
	Derivatives	956	Volatilities (normal)	Shift of +1 basis point	Mark-to-model (other)	12
	Derivatives	3	Mean reversion	Shift of +1 basis point	Mark-to-model (other)	-
	Profit-participation certificates and promissory notes	270	Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (DCF)	-
	Bonds	304	Illiquid market prices	Shift of +1% in relation to fair value	Mark-to-model (DCF)	145
	Purchase option on investments in companies	1	Discount rate for investments in companies	Shift of +1 percentage point	Mark-to-model (other)	-

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Risk category	Sensitivity reference value	Valuation technique	Aggregate sensitivity (€ million)
	ABSs	2	ABS spreads	Shift of +1 basis point	Mark-to-model (DCF)	-
	ABSs	218	Duration	Shift of +1 year	Mark-to-model (other)	-14
	Investments in joint ventures	6	Discount rate for investments in companies	Shift of +1 percentage point	Income capitalization approach	-
	Investments in subsidiaries	1	Dividend estimate	Shift of +1 percentage point	Mark-to-model (DCF)	-
	Investments in subsidiaries	55	Yield curves	Shift of +1 basis point	Mark-to-model (DCF)	-
	Investments in subsidiaries	9	Yield curves	Shift of +1 basis point	Net asset value	-
	Investments in subsidiaries	167	Discount rate for investments in companies	Shift of +1 percentage point	Income capitalization approach	-4
	Investments in subsidiaries	1	Equity prices	Shift of +1% in relation to fair value	Net asset value	-
	Bearer securities	869	Illiquid market prices	Shift of +1% in relation to fair value	Mark-to-market	8
	Investment fund units	9	Yield curves	Shift of +1 basis point	Net asset value	-
Investments			Illiquid market prices	Shift of +1% in relation to fair value	Mark-to-model (other)	-
	Investment fund units	17	Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (other)	7
			Illiquid market prices	Shift of +1% in relation to fair value	Mark-to-model (DCF)	670
	Bonds	1,090	Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (DCF)	1
	Bonds	6	Impairment	Absolute amount (impairment)	Present value for which loss allowances have been recognized	-
	Other shareholdings	210	Discount rate for investments in companies	Shift of +1 percentage point	Income capitalization approach	-2
	Other shareholdings	200	Dividend estimate	Shift of +1 percentage point	Mark-to-model (DCF)	2
	Other shareholdings	23	Yield curves	Shift of +1 basis point	Mark-to-model (DCF)	-
	Other shareholdings	8	Equity prices	Shift of +1% in relation to fair value	Net asset value	-

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Risk category	Sensitivity reference value	Valuation technique	Aggregate sensitivity (€ million)
Investments held by insurance companies	ABSs	1,538			Third-party pricing information	-
	Investments in subsidiaries, associates, and joint ventures, and other shareholdings	5,370	Equity prices	Shift of +1% in relation to fair value	Net asset value	-
	Investments in subsidiaries, associates, and joint ventures, and other shareholdings	286	Dividend estimate	Shift of +1 percentage point	Income capitalization approach	-
	Investments in subsidiaries, associates, and joint ventures, and other shareholdings	12			Third-party pricing information	-
			Bond spreads	Shift of +1 basis point	Mark-to-model (DCF)	-1
	Loans	1,751	Yield curves	Shift of +1 basis point	Mark-to-model (DCF)	-1
	Fixed-income securities, convertible bonds, shares, investment fund units, and shares in cooperatives	643			Third-party pricing information	-
	Profit-participation certificates and promissory notes	269	Bond spreads	Shift of +1 basis point	Mark-to-model (DCF)	-
	Initial fund loans	84	Probability of default	Shift of +1 basis point	Mark-to-model (DCF)	-
			Bond spreads	Shift of +1 basis point	Mark-to-model (DCF)	-10
	Mortgage loans	11,361	Yield curves	Shift of +1 basis point	Mark-to-model (DCF)	-11
Deposits from customers (FVO)	Profit-participation certificates and promissory notes	127	Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (DCF)	5
Debt certificates issued including bonds			Illiquid market prices	Shift of +1% in relation to fair value	Mark-to-model (DCF)	-394
			Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (DCF)	2
	Bonds	438	Volatilities (log-normal)	Shift of +1 percentage point	Mark-to-model (DCF)	-1
Derivatives used for hedging (negative fair values)	Derivatives	3	Yield curves	Shift of +1 basis point	Mark-to-model (other)	-
Financial liabilities held for trading			Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (other)	36
			Volatilities (log-normal)	Shift of +1 percentage point	Mark-to-model (other)	76
	Derivatives	474	Volatilities (normal)	Shift of +1 basis point	Mark-to-model (other)	-6
	Derivatives	7	Mean reversion	Shift of +1 basis point	Mark-to-model (other)	-
	Bonds	87	Fair value adjustments	Absolute amount (fair value adjustment)	Mark-to-model (DCF)	2

Measurements of fair value at Level 3 as at December 31, 2022

The following table shows the valuation techniques, the unobservable inputs, and their spreads used for the fair value measurements at Level 3 of the fair value hierarchy. Due to the change in the method used to determine observability for each individual input used in the calculation of fair value, the disclosures as at December 31, 2022 are not comparable with those as at June 30, 2023.

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
Loans and advances to customers	Profit-participation certificates	25	DCF method	Credit spread	7.4 to 8.2
Loans and advances to customers	Shareholders' loans	91	DCF method	Credit spread	3.6 to 12.1
Loans and advances to customers	Initial fund loans	16	DCF method	Probability of default	0.4
Loans and advances to customers	Receivables arising from silent partnerships	54	DCF method	Credit spread	6.1 to 12.2
Loans and advances to customers	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
Financial assets held for trading	Loans and advances to issuers in default	17	DCF method	Recovery rate	-
Financial assets held for trading	Collateralized loan obligations	133	Gaussian copula model	Liquidity spread	2.0 to 6.5
Financial assets held for trading	Bearer securities	127	DCF method	BVAL price adjustment	-0.3 to 1.5
Financial assets held for trading	Registered securities	343	DCF method	BVAL price adjustment	-4.0 to 5.3
Financial assets held for trading	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	Investments in associates	4	Income capitalization approach	Future income	-
Investments	Investments in joint ventures	2	Income capitalization approach	Future income	-
Investments	Investments in subsidiaries	57	DCF method	Credit spread	0 to 11.5
Investments	Investments in subsidiaries	172	Income capitalization approach, net asset value method	Future income	-
Investments	Investments in subsidiaries	7	Net asset value	-	-
Investments	Collateralized loan obligations	1	Gaussian copula model	Liquidity spread	1.8 to 2.6
Investments	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
Investments	Bearer securities	567	DCF method	BVAL price adjustment	-0.3 to 107.5
Investments	Investment fund units	23	Net asset value	-	-
Investments	Mortgage-backed securities	195	DCF method	Duration	-
Investments	Mortgage-backed securities	15	DCF method	Recovery rate	0.0 to 71.4
Investments	Other shareholdings	245	DCF method	Capitalization rate, growth factor	1.0 to 11.0
Investments	Other shareholdings	22	DCF method	Credit spread	0.0
Investments	Other shareholdings	203	Income capitalization approach, net asset value method	Future income	-
Investments	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

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	Derivatives used for hedging (positive fair values)	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, 2022	679	-	645	1,900	21,365	163
Additions (purchases)	55	-	306	66	2,492	-
Transfers	-	-	59	196	301	-
from Level 3 to Levels 1 and 2	-	-	-276	-357	-24	-
from Levels 1 and 2 to Level 3	-	-	335	553	325	-
Disposals (sales)	-63	-	-262	-111	-883	-155
Changes resulting from measurement at fair value	-32	-	-15	-85	-2,509	-
through profit or loss	-18	-	-15	-24	173	-
through other comprehensive income	-14	-	-	-61	-2,682	-
Other changes	-3	-	-	-12	57	26
Balance as at Jun. 30, 2022	**635**	**-**	**733**	**1,954**	**20,823**	**35**
Balance as at Jan. 1, 2023	596	-	623	1,985	20,366	-
Additions (purchases)	4	-	828	240	1,714	-
Transfers	44	-	1,041	1,376	28	-
from Level 3 to Levels 1 and 2	-2	-	-173	-725	-2	-
from Levels 1 and 2 to Level 3	46	-	1,214	2,101	30	-
Disposals (sales)	-14	-	-964	-676	-777	-
Changes resulting from measurement at fair value	-1	-	21	-36	-1	-
through profit or loss	-2	-	27	20	-93	-
through other comprehensive income	1	-	-6	-56	92	-
Other changes	3	7	-9	2	-17	-
Balance as at Jun. 30, 2023	**632**	**7**	**1,538**	**2,891**	**21,314**	**-**

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

€ million	Deposits from customers	Debt certificates issued including bonds	Derivatives used for hedging (negative fair values)	Financial liabilities held for trading	Subordinated capital
Balance as at Jan. 1, 2022	-	427	-	148	20
Additions (issues)	-	-	-	24	-
Transfers	-	-	-	-18	-
from Level 3 to Level 2	-	-	-	-161	-
from Level 2 to Level 3	-	-	-	143	-
Disposals (settlements)	-	-24	-	-21	-
Changes resulting from measurement at fair value	-	1	-	-8	-
through profit or loss	-	1	-	-8	-1
through other comprehensive income	-	-	-	-	-
Other changes	-	-	-	-	-1
Balance as at Jun. 30, 2022	**-**	**403**	**-**	**127**	**19**
Balance as at Jan. 1, 2023	-	404	-	98	69
Additions (issues)	-	93	-	403	-
Transfers	128	3	-	224	-
from Level 3 to Level 2	-	-	-	-1,874	-
from Level 2 to Level 3	128	3	-	2,099	-
Disposals (settlements)	-	-62	-	-193	-68
Changes resulting from measurement at fair value	-	-1	-	46	-
through profit or loss	2	-1	-	69	1
through other comprehensive income	-2	-	-	-23	-1
Other changes	-	1	3	-11	-1
Balance as at Jun. 30, 2023	**127**	**438**	**3**	**568**	**-**

As part of the processes for fair value measurement, the DZ BANK Group reviews whether the valuation methods used for the measurement are typical. This review takes place at every balance sheet date, i.e. at least every 6 months. For the valuation parameters used in the valuation methods, a review is carried out as part of a significance analysis to examine whether unobservable inputs have a significant influence on the fair value.

For each input used in the calculation of fair value, a liquidity score is determined on an ongoing basis that provides information on whether the underlying market is active and the input is observable. Various parameters are used to determine the liquidity score, irrespective of the market data group. In respect of equity prices, for example, a check is carried out of whether the equity was traded in a specified period and whether the trading volume has exceeded a certain threshold. For bonds, the bid-ask spread and the number of price contributors are taken into account. The rules on determining the liquidity score are set centrally by DZ BANK AG and apply to all group entities. On the basis of the liquidity scores determined, the fair value measurements are assigned to the levels of the fair value hierarchy, provided that the group entities use the centralized market database. 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 reporting period are largely attributable to a revised estimate of the market observability of the valuation parameters 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 parameters 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 loss of €142 million during the reporting period (first half of 2022: net gain of €174 million). The gains or losses are predominantly included in the line items gains and losses on trading activities, other gains and losses on valuation of financial instruments, and gains and losses on investments held by insurance companies and other insurance company gains and losses.

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.

Sensitivity analysis

In the DZ BANK Group, financial instruments are generally assigned to Level 2 and Level 3 of the fair value hierarchy using a sensitivity-based significance analysis of unobservable inputs. Taking a prudent valuation approach pursuant to article 105 of the Capital Requirements Regulation (CRR), an uncertainty spread is formed for the unobservable inputs that, as a rule, equates to the 90 percent quantile and the 10 percent quantile for the distribution of the input; the change in fair value at the ends of the spread is also examined.

The following table shows the changes in the fair values of financial instruments assigned to Level 3 of the fair value hierarchy that would occur if all inputs in each risk category were factored into the measurement with the ends of each uncertainty spread. Changes in fair value at the lower and upper end of the uncertainty spread are shown separately. In practice, however, it is unlikely that all unobservable inputs would be at the extreme end of their uncertainty spread at the same time.

Changes in fair values, using alternative assumptions for unobservable inputs

€ million	Jun. 30, 2023 Alternative assumptions at the lower end of the uncertainty spread	Jun. 30, 2023 Alternative assumptions at the upper end of the uncertainty spread
Loans and advances to customers	**5**	**-5**
Receivables arising from silent partnerships	2	-2
Profit-participation certificates and promissory notes	1	-1
Shareholders' loans	2	-2
Financial assets held for trading	**-44**	**51**
Profit-participation certificates and promissory notes	1	-1
Bonds	-46	51
Purchase option on investments in companies	1	-
Investments	**-74**	**86**
ABSs	14	-14
Investments in subsidiaries	12	-9
Bearer securities	-40	40
Investment fund units	-2	1
Bonds	-69	71
Other shareholdings	12	-4
Investments held by insurance companies	**72**	**-43**
Loans	48	-19
Profit-participation certificates and promissory notes	1	-1
Initial fund loans	1	-2
Mortgage loans	22	-22
Financial liabilities held for trading	**1**	**-1**
Derivatives	1	-1
Total	**-40**	**88**

The sensitivity analysis was adjusted in the reporting period, so there are no direct comparative figures for the reporting date of December 31, 2022. Based on the sensitivity analysis used in 2022, the values as at December 31, 2022 were as follows:

For the fair values of investments held by insurance companies reported within Level 3, a rise in the interest rate of 1 percent would have led to the recognition of a €22 million loss in the income statement and a loss of €1,089 million under other comprehensive income/loss. For the fair values of investments held by insurance companies, a worsening in the credit rating of 1 percent would have led to the recognition of a €29 million loss in the income statement and a loss of €1,083 million under other comprehensive income/loss.

In the case of the fair values of loans and advances to customers, a worsening in the credit rating or a rise in the interest rate of 1 percent would have led to the recognition of a €9 million loss in the income statement. For the fair values of investments, there would have been a €47 million loss under other comprehensive income/loss and a €16 million loss in the income statement.

The fair values of bonds without liquid markets that are reported within financial assets held for trading, investments, and loans and advances to customers were given an individual adjustment spread or were 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 have led to the recognition of a €14 million loss in the income statement and a loss of €3 million under other comprehensive income/loss.

An alternative assumption about the credit spreads used could have led 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 have led to the recognition of a €1 million loss under other comprehensive income/loss.

An alternative assumption about the liquidity spreads used could have led 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 have led to a €4 million decrease in the fair values of these financial assets that would be recognized in the income statement.

Non-performing exposures, strategically held investments in subsidiaries and other shareholdings, and investments in real estate funds whose fair values are calculated using an income capitalization approach or the net asset value were not included in the sensitivity analysis as at December 31, 2022.

» 44 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’ in 2021.

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 €31 million (first half of 2022: €42 million).

» 45 Hedge accounting

Gains and losses arising on hedging instruments and hedged items that need to be recognized in profit or loss are reported in the gains and losses from hedge accounting under other gains and losses on valuation of financial instruments. The breakdown of gains and losses from hedge accounting, by type of hedge, is as follows:

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Gains and losses on fair value hedges	**-**	8
Gains and losses on hedging instruments	-24	232
Gains and losses on hedged items	24	-224
Gains and losses on portfolio fair value hedges	**-27**	-1
Gains and losses on hedging instruments	24	4,061
Gains and losses on hedged items	-51	-4,063
Total	**-27**	6

» 46 Nature and extent of risks arising from financial instruments

Disclosures pursuant to IFRS 7.35F(a)-36(b) can be found in this note in the notes to the interim consolidated financial statements. With the exception of the qualitative and quantitative disclosures pursuant to IFRS 7.35F(a)-36(b), further disclosures on the nature and extent of risks arising from financial instruments

(IFRS 7.31-42) are included in the interim group management report in chapter VI 'Risk report', sections 4 'Liquidity adequacy' and 6 'Credit risk' and for the Bank sector in section 8 'Market risk'.

The disclosures published in the risk report form part of the content of these notes to the consolidated financial statements.

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
- financial assets mandatorily 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 credit-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 but are not considered credit-impaired, 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 credit-impaired and thus assigned to stage 3 if they are deemed to be in default pursuant to article 178 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 credit-impaired and assigned to stage 3. Here too, loss allowances are recognized in the amount of the lifetime expected credit losses. Interest income on credit-impaired financial assets is calculated on the amortized cost after loss allowances using the effective interest method.
- POCI assets: Financial assets that are already deemed credit-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 expected 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 immaterial 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 are therefore carried out. The post-model adjustments as at December 31, 2022 amounted to a total of €67 million. The latest evaluation for the first half of 2023 shows that the impact of insolvency law reforms were overestimated, which meant that the post-model adjustments made in this context need to be reduced. The previously assumed increase in the rate of insolvencies no longer appears appropriate based on the trend in the first half of 2023. The contribution for the Austria portfolio has also been reduced as a new sales scorecard has been used for new business in this portfolio since March 2023 and provides a better picture of credit risk. It is also evident that the effects of group contagion in the definition of default have an only immaterial impact on credit risk. The associated contribution to the post-model adjustment has therefore been fully reversed. Overall, the updating of the post-model adjustments resulted in a reduction in loss allowances of €33 million recognized in profit or loss and thus, taking account of portfolio growth and an increase in risk totaling €5 million, led to a post-model adjustment of €39 million as at June 30, 2023.

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, real estate prices, and energy prices and are primarily 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 June 30, 2023 are based on 2 macroeconomic scenarios developed by the Economic Roundtable of the DZ BANK Group in April 2023 (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.

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 2027 used to calculate the expected loss as at June 30, 2023 were as follows:

		2023		2024		2025		2026		2027	
		Baseline	Risk	Baseline	Risk	Baseline	Risk	Baseline	Risk	Baseline	Risk
DAX 30, Germany	Index	15,500	12,550	16,600	11,300	17,600	14,125	18,700	14,980	19,800	15,880
EURO STOXX 50, EU	Index	4,300	3,420	4,500	3,080	4,750	3,850	5,000	4,080	5,250	4,330
Unemployment rate, Germany	%	3.10	3.40	3.10	3.40	3.10	3.20	3.00	3.10	3.00	3.00
Harmonized unemployment rates, EU	%	6.10	6.20	6.10	6.20	5.90	6.00	5.90	5.90	5.80	5.80
Real GDP growth, Germany (seasonally and calendar-adjusted)	Compared with prior year (%)	0.25	-0.75	1.25	-1.00	1.25	1.25	1.00	1.25	0.75	0.75
Real GDP growth, EU (seasonally and calendar-adjusted)	Compared with prior year (%)	0.80	-0.20	1.80	-0.50	1.80	1.80	1.50	1.80	1.30	1.30
Consumer price index, Germany	Compared with prior year (%)	6.25	6.50	3.50	6.00	2.50	5.00	2.25	3.50	2.25	2.25
Oil price (Brent), US$/bbl	At year-end	100.00	120.00	90.00	105.00	90.00	100.00	80.00	95.00	80.00	90.00
Natural gas price, US$/MMBtu	At year-end	5.40	8.50	5.00	8.00	5.00	7.50	4.50	6.50	4.50	6.50
Commercial real estate price index, Germany	Compared with prior year (%)	-9.00	-12.00	-4.00	-6.00	-2.00	-1.00	0.00	0.00	0.00	0.00
3m Euribor, European Monetary Union	%	4.00	4.30	3.65	4.50	2.65	4.05	2.55	3.30	2.55	2.50
10-year government bonds, Germany	%	3.00	3.50	3.00	3.50	2.75	3.25	2.75	3.25	2.75	2.75

On the basis of consultation with relevant experts, the shift factors determined using statistical methods were overridden again as at June 30, 2023 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 unchanged compared with December 31, 2022. 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, supply chain difficulties, high inflation coupled with soaring energy prices, the problems resulting from higher interest rates, and the consideration of climate-related and environmental risks. The recent turmoil in the banking sector creates the risk that economic growth will continue to slow, particularly in the United States. Overall, additional loss allowances of €197 million were recognized as at June 30, 2023 due to the expert-led override of the shift factors determined using statistical methods (December 31, 2022: €188 million).

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 in 2022 for portfolios that were particularly affected. In contrast to the first override component, this second override component 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 reflected macroeconomic developments in 2022, 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. The fixed staging was reviewed again at the end of the first half of 2023 and, given the continued high level of uncertainty, was retained.

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 immaterial over the forecast period. The climate and environmental parameters currently have an only immaterial impact on loss allowances. The effects on loss allowances will be examined more closely in the context of planned sustainability initiatives.

Loss allowances and gross carrying amounts

In the DZ BANK Group, loss allowances are recognized for the classes 'financial assets measured at fair value', 'financial assets measured at amortized cost', 'finance leases', and 'financial guarantee contracts and loan commitments' in the amount of the expected credit losses. Trade receivables and contract assets that fall within the scope of IFRS 15 are assigned to the 'financial assets measured at amortized cost' class.

Financial assets measured at fair value

€ million	Stage 1 Loss allowances	Stage 1 Fair value	Stage 2 Loss allowances	Stage 2 Fair value	Stage 3 Loss allowances	Stage 3 Fair value
Balance as at Jan. 1, 2022	26	121,359	3	674	25	34
Restatements according to IAS 8	22	-	6	-	-	-
Balance restated as at Jan. 1, 2022	48	121,359	9	674	25	34
Addition/increase in loan drawdowns	7	12,117	1	54	-	-
Change to financial assets due to transfer between stages	-4	-947	4	942	-	5
Transfer from stage 1	-5	-1,179	5	1,177	-	2
Transfer from stage 2	2	232	-2	-235	-	3
Use of loss allowances/directly recognized impairment losses	-	-	-	-	-2	-2
Derecognitions and repayments	-15	-12,430	-9	-108	-	-5
Changes to models/risk parameters	15	-	15	-	2	-
Additions	19	-	16	-	2	-
Reversals	-5	-	-1	-	-	-
Modifications	-	2	-	-	-	-
Modification gains	-	2	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-18,996	-	-151	-	-1
Exchange differences and other changes	-	131	-	7	-	1
Deferred taxes	-1	-	-5	-	-	-
Balance as at Jun. 30, 2022	**50**	**101,237**	**14**	**1,419**	**25**	**32**
Balance as at Jan. 1, 2023	41	95,034	17	795	25	32
Addition/increase in loan drawdowns	6	11,952	-	20	-	-
Change to financial assets due to transfer between stages	14	309	-14	-331	-	22
Transfer from stage 1	-	-64	-	62	-	3
Transfer from stage 2	14	374	-14	-393	-	19
Use of loss allowances/directly recognized impairment losses	-	-	-	-	-6	-6
Derecognitions and repayments	-6	-6,584	-1	-91	-	-3
Changes to models/risk parameters	-24	-	-4	-	6	-
Additions	2	-	1	-	6	-
Reversals	-26	-	-5	-	-	-
Modifications	-	-1	-	-1	-	-
Modification losses	-	-1	-	-1	-	-
Amortization, fair value changes, and other changes in measurement	-	933	-	9	-	-
Exchange differences and other changes	-	-44	-	2	-	1
Deferred taxes	3	-	6	-	-	-
Balance as at Jun. 30, 2023	**34**	**101,597**	**5**	**403**	**24**	**46**

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, 2022	282	376,209	374	17,187	1,267	2,870	13	90
Addition/increase in loan drawdowns	112	9,050,777	47	14,620	343	985	-	90
Change to financial assets due to transfer between stages	101	-119	-162	-140	62	259	-	-
Transfer from stage 1	-29	-6,632	29	6,604	-	29	-	-
Transfer from stage 2	125	6,477	-201	-6,868	76	391	-	-
Transfer from stage 3	5	36	11	124	-14	-160	-	-
Use of loss allowances/directly recognized impairment losses	-	-	-1	-	-214	-10	-2	-2
Derecognitions and repayments	-78	-9,007,479	-72	-16,060	-302	-1,485	-6	-54
Changes to models/risk parameters	-124	-	239	-	-77	-	11	-
Additions	57	-	375	-	146	-	14	-
Reversals	-181	-	-136	-	-223	-	-4	-
Modifications	-	-	-	-	1	1	-	-
Modification gains	-	-	-	-	1	1	-	-
Amortization, fair value changes, and other changes in measurement	-	54	-	21	-	-26	-	-
Positive change in fair value of POCI assets	-	-	-	-	-	-	-	15
Exchange differences and other changes	-	939	1	32	41	67	-	2
Changes in the scope of consolidation	-	6	-	3	-	-	-	-
Addition of subsidiaries	-	6	-	3	-	-	-	-
Balance as at Jun. 30, 2022	**293**	**420,386**	**427**	**15,663**	**1,121**	**2,662**	**17**	**141**
Balance as at Jan. 1, 2023	266	388,040	548	38,094	1,185	2,716	18	142
Addition/increase in loan drawdowns	85	13,426,861	67	19,226	356	1,254	1	96
Change to financial assets due to transfer between stages	110	-1,741	-165	1,267	55	475	-	-
Transfer from stage 1	-25	-4,217	23	4,134	1	83	-	-
Transfer from stage 2	132	2,456	-205	-3,002	73	546	-	-
Transfer from stage 3	3	19	17	135	-19	-154	-	-
Use of loss allowances/directly recognized impairment losses	-	-2	-1	-	-96	-19	-2	-4
Derecognitions and repayments	-71	-13,397,077	-76	-20,433	-345	-1,682	-6	-157
Changes to models/risk parameters	-118	-	148	-	78	-	6	-
Additions	50	-	368	-	199	-	13	-
Reversals	-169	-	-220	-	-122	-	-7	-
Modifications	-	-	-	-	1	1	-	-
Modification gains	-	2	-	-	1	1	-	-
Modification losses	-	-2	-	-1	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-97	-	-1	-	-4	-	-
Positive change in fair value of POCI assets	-	-	-	-	-	-	-	17
Exchange differences and other changes	1	63	-	8	-1	15	-5	2
Balance as at Jun. 30, 2023	**273**	**416,047**	**521**	**38,161**	**1,233**	**2,756**	**11**	**97**

The undiscounted expected credit losses on purchased or originated credit-impaired assets that were recognized for the first time during the reporting period totaled €150 million (first half of 2022: €134 million).

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, 2022	2	548	6	176	14	29
Addition/increase in loan drawdowns	2	71	3	3	12	1
Change to finance leases due to transfer between stages	-	1	-1	-	-	-1
Transfer from stage 1	-	-60	-	60	-	-
Transfer from stage 2	-	61	-1	-65	1	4
Transfer from stage 3	-	1	-	5	-1	-5
Derecognitions and repayments	-2	-136	-3	-42	-14	-6
Balance as at Jun. 30, 2022	**2**	**484**	**4**	**137**	**12**	**22**
Balance as at Jan. 1, 2023	1	435	3	111	9	19
Addition/increase in loan drawdowns	1	93	2	3	1	-
Change to finance leases due to transfer between stages	-	23	-	-25	-	2
Transfer from stage 1	-	-41	-	41	-	-
Transfer from stage 2	-	65	-1	-68	-	3
Transfer from stage 3	-	-	-	2	-	-2
Derecognitions and repayments	-1	-111	-3	-27	-4	-4
Balance as at Jun. 30, 2023	**2**	**441**	**2**	**62**	**7**	**17**

Financial guarantee contracts and loan commitments

	Stage 1		Stage 2		Stage 3		POCI assets	
€ million	Loss allowances	Nominal amount	Loss allowances	Nominal amount	Loss allowances	Nominal amount	Loss allowances	Nominal amount
Balance as at Jan. 1, 2022	63	79,176	39	3,155	110	271	1	2
Addition/increase in loan drawdowns	43	54,634	24	1,821	43	151	2	7
Change to financial guarantee contracts and loan commitments due to transfer between stages	2	-2,612	-2	2,593	-	18	-	-
Transfer from stage 1	-4	-3,009	4	2,996	-	13	-	-
Transfer from stage 2	5	395	-6	-404	-	9	-	-
Transfer from stage 3	-	2	-	1	-	-4	-	-
Derecognitions and repayments	-43	-50,486	-20	-2,115	-46	-164	-5	-8
Changes to models/risk parameters	-5	-	15	-	-5	-	2	-
Additions	14	-	26	-	25	-	2	-
Reversals	-19	-	-11	-	-30	-	-1	-
Amortization, fair value changes, and other changes in measurement	-	179	-	11	-	1	-	-
Exchange differences and other changes	-	-181	-	220	-5	-	-	-
Balance as at Jun. 30, 2022	**59**	**80,710**	**57**	**5,684**	**97**	**276**	**-**	**1**
Balance as at Jan. 1, 2023	53	80,472	95	7,903	89	242	-	2
Addition/increase in loan drawdowns	33	47,158	27	2,459	34	109	1	6
Change to financial guarantee contracts and loan commitments due to transfer between stages	14	-303	-28	178	13	124	-	-
Transfer from stage 1	-3	-856	3	845	-	10	-	-
Transfer from stage 2	17	552	-31	-668	13	116	-	-
Transfer from stage 3	-	1	-	1	-	-2	-	-
Derecognitions and repayments	-41	-43,344	-30	-3,571	-29	-142	-	-2
Changes to models/risk parameters	-3	-	-4	-	-3	-	-	-
Additions	12	-	23	-	21	-	-	-
Reversals	-14	-	-27	-	-23	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-20	-	-1	-	-1	-	-
Exchange differences and other changes	-	13	-	4	1	-	-	-
Balance as at Jun. 30, 2023	**57**	**83,976**	**60**	**6,973**	**104**	**332**	**1**	**5**

» 47 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	Jan. 1–Jun. 30, 2023 New issues	Jan. 1–Jun. 30, 2023 Repurchases	Jan. 1–Jun. 30, 2023 Repayments	Jan. 1–Jun. 30, 2022 New issues	Jan. 1–Jun. 30, 2022 Repurchases	Jan. 1–Jun. 30, 2022 Repayments
DEBT CERTIFICATES ISSUED INCLUDING BONDS	**62,685**	**-822**	**-44,204**	35,817	-544	-23,553
Bonds issued	**17,564**	**-813**	**-5,009**	5,838	-531	-3,540
Mortgage Pfandbriefe	2,241	-19	-1,210	2,527	-46	-879
Public-sector Pfandbriefe	492	-	-100	-	-	-411
Other bonds	14,832	-794	-3,699	3,311	-485	-2,250
Other debt certificates issued	**45,120**	**-10**	**-39,195**	29,979	-13	-20,013
FINANCIAL LIABILITIES HELD FOR TRADING	**5,877**	**-498**	**-4,413**	3,302	-304	-3,773
SUBORDINATED CAPITAL	**-**	**-5**	**-114**	51	-2	-25
Total	**68,562**	**-1,325**	**-48,731**	39,170	-850	-27,351

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.

E Insurance business disclosures

» 48 Insurance revenue

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
INSURANCE REVENUE NOT UNDER THE PREMIUM ALLOCATION APPROACH	**2,216**	**2,551**
Changes to the liability for remaining coverage that are recognized in profit or loss	**2,036**	**2,386**
Reversal of expected incurred claims and other insurance service expenses through profit or loss	1,111	1,155
Release of the risk adjustment through profit or loss	54	31
Recognition of the CSM in profit or loss based on provision of service	239	221
Difference between premiums collected and release of present value of premiums (experience adjustment)	632	980
Amortization of insurance acquisition cash flows	**181**	**165**
INSURANCE REVENUE UNDER THE PREMIUM ALLOCATION APPROACH	**3,993**	**3,829**
Total	**6,209**	**6,380**

» 49 Presentation of income and expense in the insurance business

Insurance finance income or expenses, recognized in profit or loss and in other comprehensive income, from insurance contracts and reinsurance contracts

€ million	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Insurance finance income or expenses from insurance contracts	**-3,611**	**16,551**
Changes in the fair value of underlying items relating to insurance contracts with direct participation features	-2,589	15,485
Interest accretion effects	-1,021	190
Effects of changes in the discount rate	12	916
Net foreign exchange loss	-13	-40
Insurance finance income or expenses from reinsurance contracts held	**9**	**5**
Interest accretion effects	9	5
Other	-	1
Total	**-3,602**	**16,557**
of which recognized in profit or loss	-2,496	2,367
of which recognized in other comprehensive income	-1,107	14,190

For insurance contracts with direct participation features, for which the option of recognition in other comprehensive income pursuant to IFRS 17.89(b) is exercised, volatilities recognized in profit or loss are minimized by reclassifying the pro rata insurance finance income or expenses to the reserve from other comprehensive income. This is in line with the classification of investments held by insurance companies in accordance with IFRS 9, which are predominantly assigned to the category 'financial assets measured at fair value through other comprehensive income'. Subsequent measurement of the underlying items provides the basis of calculation for the reclassification from the reserve from other comprehensive income to the income statement. With gains and losses on investments held by insurance companies amounting to a net gain of €2,302 million (first half of 2022: net loss of €3,628 million), the amount reclassified in accordance with IFRS 17.89(b) came to an expense of €1,873 million in the period under review (first half of 2022: income of €3,281 million).

Measurement in other comprehensive income in accordance with IFRS 17.C19(b)(i) for insurance contracts without direct participation features comprises the change in the interest-rate structure of the locked-in yield curve compared with the yield curve as at the reporting date. Exercising the option of recognition in the reserve from other comprehensive income reduces the impact of the measurement-related volatilities of equity and liabilities on the income statement.

The effects recognized in profit or loss include, firstly, the effect of the time value of money resulting from discounting with the locked-in yield curve for insurance contracts without direct participation features and, secondly, the effect of changes in the time value of money resulting from insurance contracts with direct participation features whose underlying items are assigned to the category 'financial assets measured at fair value through profit or loss'. Insurance finance income or expenses also include the difference between the expected future payments covered by the liability for remaining coverage and the payments made in the financial year from business involving contracts with direct participation features.

Investment income recognized in other comprehensive income in connection with insurance contracts measured under the modified retrospective approach or the fair value approach

The reserve from other comprehensive income changed as a result of investment income in connection with insurance contracts measured under the modified retrospective approach or the fair value approach as follows:

€ million	2023	2022
Balance as at Jan. 1	475	12,729
Net change in fair value recognized in other comprehensive income	3,127	-14,142
Reclassified to the income statement in the reporting period	-540	1,208
Deferred taxes for the reporting period	-913	4,079
Balance as at Jun. 30	**2,148**	**3,874**

» 50 Change in the carrying amounts of insurance contract liabilities

The following tables show the change in the carrying amounts of the liability for remaining coverage and the liability for incurred claims:

	Liability for remaining coverage		Liability for incurred claims			Total
€ million	Excluding the loss component	Loss component	No premium allocation approach	Premium allocation approach: present value of expected cash flows	Premium allocation approach: risk adjustment	
Carrying amount of insurance contract assets as at Jan. 1, 2023	-3	-	2	-	-	-2
Carrying amount of insurance contract liabilities as at Jan. 1, 2023	85,563	426	3,878	7,691	90	97,648
Balance as at Jan. 1, 2023	85,560	426	3,880	7,690	90	97,646
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-2,523**	**20**	**1,517**	**3,322**	**2**	**2,337**
Insurance service result	**-5,719**	**20**	**1,279**	**3,178**	**-**	**-1,242**
Insurance revenue	***-6,209***	***-***	***-***	***-***	***-***	***-6,209***
Measured using the modified retrospective approach	-2,451	-	-	-	-	-2,451
Measured using the fair value approach	-54	-	-	-	-	-54
Other	-3,705	-	-	-	-	-3,705
Insurance service expenses	***490***	***20***	***1,279***	***3,178***	***-***	***4,968***
Incurred claims and other insurance service expenses	-12	-	1,190	3,148	1	4,328
Amortization of insurance acquisition cash flows	502	-	-	-	-	502
Changes in the fulfillment cash flows relating to the liability for incurred claims	-	-	89	30	-1	118
Changes that relate to future service under onerous contracts	-	20	-	-	-	20
Expenses for/income from investment components	**-7**	**-**	**213**	**37**	**-**	**243**
Insurance finance income or expenses	**3,200**	**-**	**-10**	**132**	**2**	**3,324**
Other	**2**	**-**	**36**	**-25**	**-**	**13**
CHANGES RESULTING FROM CASH FLOWS	**7,320**	**-**	**-1,657**	**-3,409**	**-**	**2,254**
Premium income	10,301	-	-	-	-	10,301
Insurance acquisition cash flows	-709	-	-	-	-	-709
Incurred claims paid and other insurance service expenses paid	-2,273	-	-1,657	-3,409	-	-7,338
Balance as at Jun. 30, 2023	**90,356**	**446**	**3,740**	**7,604**	**92**	**102,238**
Carrying amount of insurance contract assets as at Jun. 30, 2023	-3	-	3	-	-	-
Carrying amount of insurance contract liabilities as at Jun. 30, 2023	90,359	446	3,737	7,604	92	102,238

€ million	Liability for remaining coverage		Liability for incurred claims			Total
	Excluding the loss component	Loss component	No premium allocation approach	Premium allocation approach: present value of expected cash flows	Premium allocation approach: risk adjustment	
Carrying amount of insurance contract assets as at Jan. 1, 2022	-2	-	2	-	-	-
Carrying amount of insurance contract liabilities as at Jan. 1, 2022	104,565	436	4,219	8,138	97	117,455
Balance as at Jan. 1, 2022	104,564	436	4,220	8,138	97	117,455
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-21,975**	**83**	**1,377**	**3,050**	**-1**	**-17,466**
Insurance service result	**-5,963**	**81**	**1,448**	**3,391**	**5**	**-1,038**
Insurance revenue	***-6,380***	-	-	-	-	***-6,380***
Measured using the modified retrospective approach	-5,300	-	-	-	-	-5,300
Measured using the fair value approach	-110	-	-	-	-	-110
Other	-971	-	-	-	-	-971
Insurance service expenses	***417***	***81***	***1,448***	***3,391***	***5***	***5,342***
Incurred claims and other insurance service expenses	-52	-	1,335	3,283	5	4,571
Amortization of insurance acquisition cash flows	469	-	-	-	-	469
Changes in the fulfillment cash flows relating to the liability for incurred claims	-	-	114	108	-	221
Changes that relate to future service under onerous contracts	-	81	-	-	-	81
Expenses for/income from investment components	**-264**	-	**213**	**64**	-	**13**
Insurance finance income or expenses	**-15,736**	-	**-286**	**-452**	**-7**	**-16,481**
Other	**-12**	**2**	**2**	**48**	**1**	**40**
CHANGES RESULTING FROM CASH FLOWS	**7,701**	-	**-1,575**	**-3,194**	-	**2,932**
Premium income	10,185	-	-	-	-	10,185
Insurance acquisition cash flows	-753	-	-	-	-	-753
Incurred claims paid and other insurance service expenses paid	-1,731	-	-1,575	-3,194	-	-6,500
Balance as at Jun. 30, 2022	**90,289**	**519**	**4,022**	**7,994**	**95**	**102,920**
Carrying amount of insurance contract assets as at Jun. 30, 2022	-40	-	1	8	-	-31
Carrying amount of insurance contract liabilities as at Jun. 30, 2022	90,330	519	4,022	7,986	95	102,952

The following tables show the change in the carrying amounts of the reinsurance contract assets relating to the liability for remaining coverage and the liability for incurred claims:

€ million	Liability for remaining coverage		Liability for incurred claims			Total
	Excluding the loss component	Loss component	No premium allocation approach	Premium allocation approach: present value of expected cash flows	Premium allocation approach: risk adjustment	
Carrying amount of reinsurance contract assets as at Jan. 1, 2023	36	-	3	507	15	560
Carrying amount of reinsurance contract liabilities as at Jan. 1, 2023	-1	-	-	-	-	-
Balance as at Jan. 1, 2023	35	-	3	507	15	559
Overall change recognized in profit or loss and in other comprehensive income	**-130**	**-**	**4**	**51**	**-5**	**-80**
Net income/expenses from reinsurance contracts held	-130	-	4	42	-5	-89
Insurance finance income or expenses from reinsurance contracts held	-	-	-	9	-	9
Changes resulting from cash flows	**133**	**-**	**-4**	**-218**	**-**	**-89**
Premiums paid for reinsurance contracts held	133	-	-	-	-	133
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-	-	-4	-218	-	-222
Balance as at Jun. 30, 2023	**38**	**-**	**2**	**339**	**10**	**390**
Carrying amount of reinsurance contract assets as at Jun. 30, 2023	40	-	2	338	10	391
Carrying amount of reinsurance contract liabilities as at Jun. 30, 2023	-2	-	-	1	-	-1

€ million	Liability for remaining coverage: Excluding the loss component	Liability for remaining coverage: Loss component	Liability for incurred claims: No premium allocation approach	Liability for incurred claims: Premium allocation approach: present value of expected cash flows	Liability for incurred claims: Premium allocation approach: risk adjustment	Total
Carrying amount of reinsurance contract assets as at Jan. 1, 2022	30	-	1	791	16	838
Carrying amount of reinsurance contract liabilities as at Jan. 1, 2022	-6	-	-	-	-	-6
Balance as at Jan. 1, 2022	23	-	1	791	16	832
Overall change recognized in profit or loss and in other comprehensive income	**-138**	**-**	**2**	**52**	**26**	**-57**
Net income/expenses from reinsurance contracts held	-154	-	2	63	27	-63
Insurance finance income or expenses from reinsurance contracts held	16	-	-	-10	-1	5
Other	-	-	-	-	-	1
Changes resulting from cash flows	**139**	**-**	**-2**	**-149**	**-**	**-12**
Premiums paid for reinsurance contracts held	139	-	-	-	-	139
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-	-	-2	-149	-	-151
Balance as at Jun. 30, 2022	**25**	**-**	**2**	**694**	**42**	**763**
Carrying amount of reinsurance contract assets as at Jun. 30, 2022	28	-	4	693	42	767
Carrying amount of reinsurance contract liabilities as at Jun. 30, 2022	-3	-	-2	1	-	-4

The following tables show the change in the insurance contracts for which the premium allocation approach is not applied:

€ million	Present value of expected cash flows	Risk adjustment	CSM			Total
			Modified retrospective approach	Fair value approach	Other	
Carrying amount of insurance contract assets as at Jan. 1, 2023	-1	-	-	-	1	-
Carrying amount of insurance contract liabilities as at Jan. 1, 2023	83,653	955	1,116	240	3,553	89,516
Balance as at Jan. 1, 2023	83,652	955	1,116	240	3,553	89,516
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**2,077**	**135**	**293**	**-35**	**187**	**2,657**
Insurance service result	**794**	**116**	**-1,495**	**-54**	**-170**	**-809**
Changes that relate to current service	***-1,068***	***-54***	***-105***	***-11***	***-123***	***-1,361***
Amortization of the CSM in profit or loss based on provision of service	-	-	-105	-11	-123	-239
Release of the risk adjustment through profit or loss	-	-54	-	-	-	-54
Deviation from budgeted claims/costs	-393	-	-	-	-	-393
Deviation from budgeted premiums	-632	-	-	-	-	-632
Deviation from budgeted insurance acquisition cash flows	-43	-	-	-	-	-43
Changes that relate to future service	***1,291***	***183***	***-1,391***	***-43***	***-48***	***-7***
New business	-425	71	113	-	267	25
Changes in estimates that adjust the CSM	1,748	112	-1,503	-43	-314	-
Changes in estimates that result in losses on onerous contracts or reversals of such losses	-32	-	-	-	-	-32
Changes that relate to past service	***571***	***-13***	-	-	-	***559***
Premium changes after the end of the coverage period	-8	-	-	-	-	-8
Change in the liability for incurred claims	579	-13	-	-	-	567
Insurance finance income or expenses	**1,250**	**18**	**1,788**	**19**	**357**	**3,432**
Other	**33**	**1**	-	-	-	**34**
CHANGES RESULTING FROM CASH FLOWS	**892**	-	-	-	-	**892**
Premium income	5,106	-	-	-	-	5,106
Insurance acquisition cash flows	-285	-	-	-	-	-285
Incurred claims paid and other insurance service expenses paid	-3,930	-	-	-	-	-3,930
Balance as at Jun. 30, 2023	**86,621**	**1,090**	**1,409**	**205**	**3,740**	**93,065**
Carrying amount of insurance contract liabilities as at Jun. 30, 2023	86,622	1,090	1,409	205	3,740	93,065

€ million	Present value of expected cash flows	Risk adjustment	CSM			Total
			Modified retrospective approach	Fair value approach	Other	
Carrying amount of insurance contract assets as at Jan. 1, 2022	-1	-	-	-	-	-
Carrying amount of insurance contract liabilities as at Jan. 1, 2022	102,935	674	4,722	257	175	108,763
Balance as at Jan. 1, 2022	102,935	674	4,722	257	176	108,763
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-17,114**	**74**	**-3,081**	**3**	**3,418**	**-16,700**
Insurance service result	**-15,706**	**85**	**10,304**	**58**	**4,358**	**-901**
Changes that relate to current service	***-1,414***	***-31***	***-123***	***-13***	***-84***	***-1,666***
Amortization of the CSM in profit or loss based on provision of service	-	-	-123	-13	-84	-221
Release of the risk adjustment through profit or loss	-	-31	-	-	-	-31
Deviation from budgeted claims/costs	-382	-	-	-	-	-382
Deviation from budgeted premiums	-980	-	-	-	-	-980
Deviation from budgeted insurance acquisition cash flows	-52	-	-	-	-	-52
Changes that relate to future service	***-15,007***	***115***	***10,427***	***71***	***4,442***	***49***
New business	-530	67	310	40	149	36
Changes in estimates that adjust the CSM	-14,490	48	10,117	31	4,293	-
Changes in estimates that result in losses on onerous contracts or reversals of such losses	13	-	-	-	-	13
Changes that relate to past service	***715***	***1***	***-***	***-***	***-***	***717***
Premium changes after the end of the coverage period	-5	-	-	-	-	-5
Change in the liability for incurred claims	720	1	-	-	-	721
Insurance finance income or expenses	**-1,398**	**-12**	**-13,385**	**-55**	**-945**	**-15,795**
Other	**-10**	**1**	**-**	**-**	**5**	**-4**
CHANGES RESULTING FROM CASH FLOWS	**1,328**	**-**	**-**	**-**	**-**	**1,328**
Premium income	4,902	-	-	-	-	4,902
Insurance acquisition cash flows	-352	-	-	-	-	-352
Incurred claims paid and other insurance service expenses paid	-3,222	-	-	-	-	-3,222
Balance as at Jun. 30, 2022	**87,149**	**748**	**1,641**	**259**	**3,594**	**93,391**
Carrying amount of insurance contract liabilities as at Jun. 30, 2022	87,149	748	1,641	259	3,593	93,391

The following tables show the change in the reinsurance contracts for which the premium allocation approach is not applied:

€ million	Present value of expected cash flows	Risk adjustment	CSM			Total
			Modified retrospective approach	Fair value approach	Other	
Carrying amount of reinsurance contract assets as at Jan. 1, 2023	-41	4	52	7	6	29
Balance as at Jan. 1, 2023	-41	4	52	7	6	29
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-1**	**-**	**-**	**1**	**1**	**2**
Insurance service result	1	-	-1	1	1	2
Changes that relate to current service	*1*	-	*-1*	*3*	*1*	*2*
CSM recognized in profit or loss	-	-	-1	3	1	2
Deviation from budgeted claims/costs	-3	-	-	-	-	-3
Deviation from budgeted premiums	3	-	-	-	-	3
Changes that relate to future service	-	-	-	*-2*	-	-
Changes in estimates that adjust the CSM	2	-	-	-2	-1	-
New business	-2	-	-	-	2	-
Insurance finance income or expenses	-1	-	1	-	-	-
CHANGES RESULTING FROM CASH FLOWS	**3**	**-**	**-**	**-**	**-**	**3**
Premiums paid for reinsurance contracts held	8	-	-	-	-	8
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-4	-	-	-	-	-4
Balance as at Jun. 30, 2023	**-38**	**5**	**53**	**8**	**8**	**35**
Carrying amount of reinsurance contract assets as at Jun. 30, 2023	-38	5	53	8	8	35

€ million	Present value of expected cash flows	Risk adjustment	CSM			Total
			Modified retrospective approach	Fair value approach	Other	
Carrying amount of reinsurance contract assets as at Jan. 1, 2022	-4	6	-2	12	-	13
Carrying amount of reinsurance contract liabilities as at Jan. 1, 2022	-59	-	55	-	-	-5
Balance as at Jan. 1, 2022	-64	6	53	12	-	8
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**11**	**-1**	**5**	**-1**	**2**	**17**
Insurance service result	-	-1	-	-1	2	1
Changes that relate to current service	*3*	-	*-1*	*-1*	*1*	*1*
CSM recognized in profit or loss	-	-	-1	-1	1	-2
Deviation from budgeted claims/costs	-5	-	-	-	-	-5
Deviation from budgeted premiums	7	-	-	-	-	7
Changes that relate to future service	*-3*	-	*1*	*1*	*1*	-
Changes in estimates that adjust the CSM	-1	-1	1	1	-	-
New business	-2	-	-	-	2	-
Changes that relate to past service	*1*	-	-	-	-	*1*
Change in the liability for incurred claims	1	-	-	-	-	1
Insurance finance income or expenses	11	-	5	-	-	16
CHANGES RESULTING FROM CASH FLOWS	**1**	**-**	**-**	**-**	**-**	**1**
Premiums paid for reinsurance contracts held	2	-	-	-	-	2
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-2	-	-	-	-	-2
Balance as at Jun. 30, 2022	**-52**	**6**	**58**	**12**	**2**	**25**
Carrying amount of reinsurance contract assets as at Jun. 30, 2022	-50	6	58	12	2	28
Carrying amount of reinsurance contract liabilities as at Jun. 30, 2022	-2	-	-	-	-	-2

» 51 Fair values of underlying items relating to contracts with direct participation features

The following table shows the fair values of the underlying items:

€ million	Jun. 30, 2023 Direct participation features	Jun. 30, 2023 Other	Jun. 30, 2023 Total	Dec. 31, 2022 Direct participation features	Dec. 31, 2022 Other	Dec. 31, 2022 Total
Investments	**85,828**	**855**	**86,683**	**82,002**	**784**	**82,786**
Investment property	3,210	-	3,210	3,245	-	3,245
Investments in subsidiaries	406	-	407	413	-	413
Investments in joint ventures	60	-	60	59	-	59
Mortgage loans	9,714	-	9,714	9,401	-	9,401
Promissory notes and loans	4,499	-	4,499	4,570	-	4,570
Registered bonds	4,525	-	4,525	4,318	-	4,318
Other loans	168	21	189	176	6	182
Variable-yield securities	10,194	410	10,604	10,466	398	10,864
Fixed-income securities	36,182	423	36,605	33,955	379	34,334
Derivatives (positive fair values)	85	-	85	216	-	216
Other investments	56	-	56	50	-	50
Assets related to unit-linked contracts	16,729	-	16,729	15,135	-	15,135
Other	**1,654**	**3**	**1,657**	**673**	**4**	**677**

As at the reporting date, the underlying items relating to investment contracts with direct participation features mainly consisted of a share of the total investment portfolio of each insurance company. An exact assignment of the investments to the insurance contract liabilities for the total portfolio or individual subportfolios is neither possible nor envisaged in the German insurance market, with the exception of unit-linked insurance contracts. Consequently, the amounts of the underlying items in life insurance are determined using the insurance cash flows pursuant to IFRS 17, i.e. the fulfillment cash flows less the risk adjustment, and the present value of the companies' future share of gross profit plus costs that cannot be attributed directly. In health insurance, equity calculated in accordance with commercial law is also taken into account owing to the rules on policyholder participation. These components thus contain the total of all future payments from the underlying items.

The 'Other' column shows investments for which there are no underlying contracts with direct participation features.

» 52 Effects of initial measurement

The following table shows the effects on the measurement components of the insurance and reinsurance contracts recognized for the first time in the financial year for which the premium allocation approach was not applied:

	Jan. 1– Jun. 30, 2023		Jan. 1– Jun. 30, 2022	
€ million	Non-onerous contracts	Onerous contracts	Non-onerous contracts	Onerous contracts
LOSSES RECOGNIZED AT INITIAL MEASUREMENT OF INSURANCE CONTRACTS	**-**	**25**	-	36
Present value of claims/costs/insurance acquisition cash flows	**3,637**	**677**	4,512	1,867
Insurance acquisition cash flows	220	71	301	129
Incurred claims and other insurance service expenses	3,417	606	4,210	1,737
Present value of premiums	**-4,071**	**-668**	-5,064	-1,845
Risk adjustment	**54**	**17**	53	14
CSM	**379**	**-**	499	-
LOSSES RECOGNIZED AT INITIAL MEASUREMENT OF REINSURANCE CONTRACTS	-	-	-	-
Present value of claims/costs/insurance acquisition cash flows	-3	-	-4	-
Present value of premiums	5	-	6	-
CSM	-2	-	-2	-

» 53 Expected recognition of the contractual service margin in profit or loss

The following table shows when the CSM recognized as at the reporting date is likely to be recognized in profit or loss:

	Jun. 30, 2023		Dec. 31, 2022	
€ million	Remaining CSM – insurance contracts	Remaining CSM – reinsurance contracts	Remaining CSM – insurance contracts	Remaining CSM – reinsurance contracts
≤ 1 year	295	-9	298	-3
> 1 year – 2 years	262	-4	250	-3
> 2 years – 3 years	250	-4	237	-3
> 3 years – 4 years	240	-4	225	-2
> 4 years – 5 years	229	-4	215	-2
> 5 years – 10 years	999	-12	931	-13
> 10 years – 20 years	1,405	-19	1,294	-20
> 20 years – 30 years	832	-7	750	-11
> 30 years – 40 years	442	-3	390	-5
> 40 years – 50 years	223	-2	193	-2
> 50 years	177	-1	127	-1

» 54 Yield curves

The following table shows the yield curves as at the latest measurement date used to measure the cash flows for insurance contracts and for reinsurance contracts held:

	1 year		5 years		10 years		15 years		20 years	
Percent	**Jun. 30, 2023**	Dec. 31, 2022	**Jun. 30, 2023**	Dec. 31, 2022	**Jun. 30, 2023**	Dec. 31, 2022	**Jun. 30, 2023**	Dec. 31, 2022	**Jun. 30, 2023**	Dec. 31, 2022
EUR	**4.73**	4.12	**4.10**	4.02	**3.82**	3.94	**3.76**	3.87	**3.59**	3.61
GBP	**6.71**	5.28	**5.90**	4.87	**5.10**	4.46	**4.87**	4.37	**4.73**	4.28
JPY	**0.63**	0.93	**1.09**	1.36	**1.41**	1.64	**1.64**	1.86	**1.82**	2.03
USD	**6.00**	5.96	**4.73**	4.78	**4.35**	4.54	**4.29**	4.52	**4.21**	4.43
ZAR	**9.27**	8.54	**9.61**	9.11	**10.76**	10.23	**11.40**	10.50	**11.20**	10.36

» 55 Risk and capital management

Disclosures pursuant to IFRS 17.132(b) and IFRS 17.132(c) can be found in this note in the notes to the interim consolidated financial statements. With the exception of the disclosures on maturity analysis pursuant to IFRS 17.132(b) and IFRS 17.132(c), further disclosures on the nature and extent of risks arising from insurance contracts (IFRS 17.121-132) are included in the interim group management report in chapter VI 'Risk report', sections 4 'Liquidity adequacy' and 6 'Credit risk' and for the Insurance sector in sections 12 'Actuarial risk' and 13 'Market risk'.

The disclosures published in the risk report form part of the content of these notes to the consolidated financial statements.

Maturity analysis

The following table contains a maturity analysis for insurance contracts that reflects the estimated timing of the cash flows. Liabilities for remaining coverage measured under the premium allocation approach were excluded from this analysis.

€ million	**Jun. 30, 2023**	Dec. 31, 2022
≤ 1 year	**4,958**	5,936
> 1 year – 2 years	**4,509**	3,485
> 2 years – 3 years	**3,279**	2,836
> 3 years – 4 years	**3,466**	2,991
> 4 years – 5 years	**3,137**	2,622
> 5 years – 10 years	**20,513**	17,648
> 10 years – 20 years	**36,524**	32,473
> 20 years – 30 years	**42,331**	35,845
> 30 years – 40 years	**34,230**	27,789
> 40 years – 50 years	**24,609**	19,327
> 50 years	**37,383**	16,932

The insurance contract liabilities repayable on demand amounted to €56,772 million (December 31, 2022: €56,083 million).

Sensitivity analysis

For internal and external reporting purposes, sensitivity analyses are carried out in accordance with IFRS 17.125 in conjunction with IFRS 17.128 in order to quantify the impact on equity and on profit or loss.

This sensitivity analysis contains an interest-rate scenario that simulates the potential impact on insurance assets and liabilities measured in accordance with IFRS 17. Expert appraisals from the Economic Roundtable are used as the basis for determining the ranges to be examined. The information from the Economic Roundtable is analyzed on an ongoing basis to ascertain whether any adjustments are needed for future reporting-date-related sensitivity analyses.

For 10-year government bonds of the Federal Republic of Germany, an interest rate of 3.00 percent is expected in the main scenario and an interest rate of 3.50 percent in the risk scenario in 2023. Based on the analyses and findings of the Economic Roundtable, sensitivity analyses with a shift in interest rates of plus or minus 50 basis points are calculated.

The following table shows the sensitivity of profit or loss before taxes and equity before taxes to a change in the underlying parameters. Correlation effects between individual parameters are not considered.

	Jun. 30, 2023		Dec. 31, 2022	
€ million	Change in profit or loss	Change in equity	Change in profit or loss	Change in equity
Increase in interest-rate risk of 50 basis points	29	334	45	184
Decrease in interest-rate risk of 50 basis points	-35	-359	-46	-248

F Other disclosures

» 56 Contingent liabilities

€ million	Jun. 30, 2023	Dec. 31, 2022
Contingent liabilities arising from contributions to the resolution fund for CRR credit institutions	165	137
Contingent liabilities in respect of litigation risk	7	4
Total	**172**	**141**

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.

» 57 Financial guarantee contracts and loan commitments

€ million	Jun. 30, 2023	Dec. 31, 2022
Financial guarantee contracts	**11,437**	**10,606**
Loan guarantees	4,993	5,076
Letters of credit	1,127	781
Other guarantees and warranties	5,318	4,749
Loan commitments	**79,849**	**78,012**
Credit facilities to banks	28,515	27,579
Credit facilities to customers	38,753	38,481
Guarantee credits	1,462	1,144
Letters of credit	268	288
Global limits	10,851	10,520
Total	**91,286**	**88,618**

The amounts shown for financial guarantee contracts and loan commitments are the nominal values of the commitment in each case.

» 58 Trust activities

Trust assets and trust liabilities amounted to €2,082 million as at June 30, 2023 (December 31, 2022: €2,171 million).

» 59 Disclosures on revenue from contracts with customers

Disclosures on revenue from contracts with customers, broken down by operating segment

JANUARY 1 TO JUNE 30, 2023

€ 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	-	-	2	
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	18	-	-	
Other fee and commission income	33	-	13	
Fee and commission income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	33	-	
Other income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	41	-	
Other operating income	25	-	4	
Total	**75**	**74**	**19**	
Main geographical markets				
Germany	70	71	19	
Rest of Europe	5	3	-	
Rest of World	-	-	-	
Total	**75**	**74**	**19**	
Type of revenue recognition				
At a point in time	62	5	19	
Over a period of time	12	69	-	
Total	**75**	**74**	**19**	

	UMH	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	Other/ Consolidation	**Total**
	1,677	254	-	104	-	-46	1,989
	12	-	-	156	-	-2	167
	-	154	-	1	-	35	190
	-	59	3	-	-	26	91
	-	43	3	-	-	-1	44
	-	6	-	-	-	-	6
	-	-	-	-	-	-	18
	-	33	-	2	3	4	87
	-	-	-	-	-	-1	32
	-	-	-	-	-	-	41
	6	-	-	-	-	5	39
	1,695	**549**	**7**	**263**	**3**	**18**	**2,704**
	1,275	549	7	100	3	12	2,106
	420	-	-	163	-	6	597
	-	-	-	1	-	-	1
	1,695	**549**	**7**	**263**	**3**	**18**	**2,704**
	198	198	5	101	3	14	606
	1,497	351	2	163	-	4	2,098
	1,695	**549**	**7**	**263**	**3**	**18**	**2,704**

JANUARY 1 TO JUNE 30, 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	-	-	2	
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	22	-	-	
Other fee and commission income	38	-	88	
Fee and commission income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	36	-	
Other income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	36	-	
Other operating income	9	-	4	
Total	**69**	**72**	**95**	
Main geographical markets				
Germany	64	66	95	
Rest of Europe	5	6	-	
Rest of World	-	-	-	
Total	**69**	**72**	**95**	
Type of revenue recognition				
At a point in time	60	5	95	
Over a period of time	9	67	-	
Total	**69**	**72**	**95**	

	UMH	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	Other/ Consolidation	**Total**
	1,793	293	-	121	-	-51	2,156
	14	-	-	167	-	-2	179
	-	131	-	1	-	28	161
	-	52	2	-	-	17	74
	-	33	3	-	-	-1	35
	-	7	-	-	-	-	7
	-	-	-	-	-	-	22
	-	26	11	1	2	-77	89
	-	-	-	-	-	-1	35
	-	-	-	-	-	-	36
	5	-	-	-	-	23	41
	1,812	**543**	**16**	**290**	**2**	**-64**	**2,835**
	1,354	543	16	121	2	-73	2,187
	458	-	-	168	-	9	646
	-	-	-	1	-	-	1
	1,812	**543**	**16**	**290**	**2**	**-64**	**2,835**
	279	196	14	51	2	-67	634
	1,533	348	2	239	-	3	2,200
	1,812	**543**	**16**	**290**	**2**	**-64**	**2,835**

» 60 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 €9,500 million (December 31, 2022: €11,000 million) was recognized under deposits from banks on the balance sheet.

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. The basic interest rate was recognized in net interest income in an amount of €160 million (first half of 2022: €81 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 was therefore granted by the ECB, which is a government agency within the meaning of IAS 20.3, this additional interest-rate advantage achieved was accounted for as a government grant in accordance with IAS 20 in 2022. As a result, additional income of €78 million was recognized in net interest income in the first half of 2022. No further interest-rate advantage was granted in the reporting period.

In addition to the TLTRO III program, government grants of €28 million were deducted from the carrying amount of the investment property held by insurance companies (December 31, 2022: €25 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 (first half of 2022: €1 million).

» 61 Employees

Average number of employees by employee group:

	Jan. 1– Jun. 30, 2023	Jan. 1– Jun. 30, 2022
Female employees	**15,490**	**15,030**
Full-time employees	9,408	9,249
Part-time employees	6,082	5,781
Male employees	**18,034**	**17,818**
Full-time employees	16,685	16,565
Part-time employees	1,349	1,253
Total	**33,524**	**32,848**

» 62 Board of Managing Directors

Uwe Fröhlich
(Co-Chief Executive Officer)
Responsibilities: Cooperative Banks/Verbund; Communications & Marketing; Research and Economics; Strategy & Group Development (incl. CSR coordination); Structured Finance

Dr. Cornelius Riese
(Co-Chief Executive Officer)
Responsibilities: Group Audit; Legal; Strategy & Group Development (incl. CSR coordination)

Souâd Benkredda
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

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

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

» 63 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

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)

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

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

Kevin Voß
Labor union secretary
Banking industry group
ver.di Bundesverwaltung

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