

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 18-K
For Foreign Governments and Political Subdivisions Thereof

ANNUAL REPORT

of

KfW

(Name of Registrant)

Date of end of last fiscal year: December 31, 2022

SECURITIES REGISTERED
(As of the close of the fiscal year)*

TITLE OF ISSUE	AMOUNT AS TO WHICH REGISTRATION IS EFFECTIVE	NAMES OF EXCHANGES ON WHICH REGISTERED
N/A	N/A	N/A

* The registrant files annual reports on Form 18-K on a voluntary basis.

**Name and address of person authorized to receive notices
and communications from the Securities and Exchange Commission:**

**KRYSTIAN CZERNIECKI
Sullivan & Cromwell LLP
Neue Mainzer Strasse 52
60311 Frankfurt am Main, Germany**

TABLE OF CONTENTS

EXPLANATORY NOTE	2
FORM 18-K	2
EXHIBIT INDEX	8
SIGNATURES	9

EXPLANATORY NOTE

This annual report on Form 18-K for the fiscal year ended December 31, 2022 is filed by KfW, also known as Kreditanstalt für Wiederaufbau, an institution organized under public law of the Federal Republic of Germany (the “Federal Republic”). This annual report on Form 18-K, as subsequently amended, is intended to be incorporated by reference into the prospectus dated November 19, 2021 of KfW and any future prospectus filed by KfW with the Securities and Exchange Commission to the extent such prospectus indicates that it intends this report to be incorporated by reference.

In this annual report, references to “€,” “euro” and “EUR” are to the single European currency of the member states of the European Union participating in the euro, including the Federal Republic. References to “U.S. dollars,” “\$” or “USD” are to United States dollars.

FORM 18-K

1. In respect of each issue of securities of KfW registered, a brief statement as to:

- (a) The general effect of any material modifications, not previously reported, of the rights of the holders of such securities.

Not applicable.

- (b) The title and the material provisions of any law, decree or administrative action, not previously reported, by reason of which the security is not being serviced in accordance with the terms thereof.

Not applicable.

- (c) The circumstances of any other failure, not previously reported, to pay principal, interest or any sinking fund or amortization installment.

Not applicable.

KfW

2. A statement as of the close of the last fiscal year of KfW giving the total outstanding of:

- (a) Internal funded debt of KfW. (Total to be stated in the currency of the registrant. If any internal funded debt is payable in foreign currency, it should not be included under this paragraph (a), but under paragraph (b) of this item.)

The total principal amount of internal funded debt of KfW, which is defined as euro denominated debt with an initial maturity of more than one year (bonds and other fixed-income securities, other borrowings, and subordinated liabilities), outstanding as of December 31, 2022 was EUR 313.3 billion.

- (b) External funded debt of KfW. (Totals to be stated in the respective currencies in which payable. No statement need be furnished as to intergovernmental debt.)

For the principal amount of external funded debt of KfW, which is defined as non-euro denominated debt with an initial maturity of more than one year (bonds and other fixed-income securities, other borrowings, and subordinated liabilities), see “KfW—Business—Financial Markets—Funding—Financial-Market Funds—Capital-Market Funding—Information on Issuances of Funded Debt of KfW Group (as of December 31, 2022),” p. 38 of Exhibit (d), which is hereby incorporated by reference herein.

3. A statement giving the title, date of issue, date of maturity, interest rate and amount outstanding, together with the currency or currencies in which payable, of each issue of funded debt of KfW outstanding as of the close of the last fiscal year of KfW.

See “KfW—Business—Financial Markets—Funding—Financial-Market Funds—Capital-Market Funding—Information on Issuances of Funded Debt of KfW Group (as of December 31, 2022),” p. 38 of Exhibit (d), which is hereby incorporated by reference herein.

4. (a) As to each issue of securities of KfW which is registered, there should be furnished a breakdown of the total amount outstanding, as shown in Item 3, into the following:

- (1) Total amount held by or for the account of KfW.

As of December 31, 2022, KfW held own debt securities (registered and non-registered) in a principal amount of EUR 4.4 billion. The amount of registered debt securities included in these holdings did not exceed 3% of the total volume of outstanding registered debt securities, and thus, is not substantial.

- (2) Total estimated amount held by nationals of the Federal Republic; this estimate need be furnished only if it is practicable to do so.

Not practicable.

- (3) Total amount otherwise outstanding.

Not applicable.

- (b) If a substantial amount is set forth in answer to paragraph (a) (1) above, describe briefly the method employed by KfW to reacquire such securities.

Not applicable.

5. A statement as of the close of the last fiscal year of KfW giving the estimated total of:

- (a) Internal floating indebtedness of KfW. (Total to be stated in the currency of the registrant.) The total principal amount of internal floating indebtedness of KfW, which is defined as euro denominated debt with an initial maturity of one year or less (short-term funds), outstanding as of December 31, 2022 was EUR 31.2 billion.
- (b) External floating indebtedness of KfW. (Total to be stated in the respective currencies in which payable.) The principal amount of external floating indebtedness of KfW, which is defined as non-euro denominated debt with an initial maturity of one year or less (short-term funds), outstanding as of December 31, 2022 was:

Currency	Principal amount outstanding in currency	Equivalent in euro with conversion rate as of December 31, 2022
CHF	80,000,000.00	81,243,018.18
NZD	17,000,000.00	10,120,252.41
USD	30,663,900,000.00	28,749,203,075.19
GBP	3,073,800,000.00	3,465,662,453.63
ZAR	13,075,000,000.00	722,431,569.29
HKD	2,300,000,000.00	276,565,299.47
NZD	600,000,000.00	128,183,216.54
Total		33,909,068,692.83

6. Statements of the receipts, classified by source, and of the expenditures, classified by purpose, of KfW for each fiscal year of KfW ended since the close of the latest fiscal year for which such information was previously reported. These statements should be so itemized as to be reasonably informative and should cover both ordinary and extraordinary receipts and expenditures; there should be indicated separately, if practicable, the amount of receipts pledged or otherwise specifically allocated to any issue registered, indicating the issue.

See “Group management report—Economic report—Development of earnings position,” “Consolidated financial statements—Consolidated statement of comprehensive income,” “Consolidated financial statements—Notes—Accounting Policies,” and “Consolidated financial statements—Notes—Notes to the statement of comprehensive income,” pp. 14 to 17, 67, 73 to 96 and 97 to 107 of Exhibit (e), which are hereby incorporated by reference herein.

7. (a) If any foreign exchange control, not previously reported, has been established by the Federal Republic, briefly describe the effect of any such action, not previously reported.

No foreign exchange control not previously reported was established by the government of the Federal Republic during 2022.

- (b) If any foreign exchange control previously reported has been discontinued or materially modified, briefly describe the effect of any such action, not previously reported.

No foreign exchange control previously reported was discontinued or materially modified by the government of the Federal Republic during 2022.

8. Brief statements as of a date reasonably close to the date of the filing of this report (indicating such date), in respect of the note issue and gold reserves of the central bank of issue of the registrant, and of any further gold stocks held by the registrant.

Not applicable.

9. Statements of imports and exports of merchandise for each year ended since the close of the latest year for which such information was previously reported. The statements should be reasonably itemized so far as practicable as to commodities and as to countries. They should be set forth in terms of value and of weight or quantity; if statistics have been established in terms of value, such will suffice.

Not applicable.

10. The balances of international payments of KfW for each year ended since the close of the latest year for which such information was previously reported. The statements of such balances should conform, if possible, to the nomenclature and form used in the "Statistical Handbook of the League of Nations." (These statements need to be furnished only if KfW has published balances of international payments.)

Not applicable.

Federal Republic of Germany

2. A statement as of December 31, 2022 giving the total outstanding of:

- (a) Internal funded debt of the Federal Republic. (Total to be stated in the currency of the Federal Republic. If any internal funded debt is payable in foreign currency, it should not be included under this paragraph (a), but under paragraph (b) of this item.)

The total amount of internal funded indebtedness of the Federal Republic, which is defined as euro denominated debt with an initial maturity of one year or more, outstanding as of December 31, 2022 was EUR 1,413.7 billion (*Source: Open-Data-Portal of the Federal Ministry of Finance <https://www.bundesfinanzministerium.de/Datenportal/Daten/offene-daten/haushalt-oeffentliche-finanzen/Zeitreihe-Schuldenstand-Bruttokreditbedarf-Zinsen-Tilgung-ab1996/Zeitreihe-Schuldenstand-Tilgung-ab1996.html>*).

For further information on the principal amount of the outstanding direct debt of the Federal Republic, see "Tables and Supplementary Information—I. –Summary of the Principal Amount of the Outstanding Direct Debt of the Federal Government", p. G-45 of Exhibit (d), which is hereby incorporated by reference herein.

- (b) External funded debt of the Federal Republic. (Totals to be stated in the respective currencies in which payable. No statement need be furnished as to intergovernmental debt.)

None.

3. A statement giving the title, date of issue, date of maturity, interest rate and amount outstanding, together with the currency or currencies in which payable, of each issue of funded debt of the Federal Republic outstanding as of the close of the last fiscal year of the Federal Republic.

See "Tables and Supplementary Information —I. Direct Debt of the Federal Government", pp. G-45 to G-49 of Exhibit (d), which are hereby incorporated by reference herein.

4. (a) As to each issue of securities of the Federal Republic which is registered, there should be furnished a breakdown of the total amount outstanding, as shown in Item 3, into the following:

- (1) Total amount held by or for the account of the Federal Republic.

Not applicable.

- (2) Total estimated amount held by nationals of the Federal Republic; this estimate need be furnished only if it is practicable to do so.

Not practicable.

- (3) Total amount otherwise outstanding.

Not applicable.

- (b) If a substantial amount is set forth in answer to paragraph (a)(1) above, describe briefly the method employed by the Federal Republic to reacquire such securities.

Not applicable.

5. A statement as of the close of the last fiscal year of the Federal Republic giving the estimated total of:

- (a) Internal floating indebtedness of the Federal Republic. (Total to be stated in the currency of the Federal Republic.)

The total amount of internal floating indebtedness of the Federal Republic, which is defined as euro denominated debt with an initial maturity of less than one year, outstanding as of December 31, 2022 was EUR 138.0 billion (*Source: Open-Data-Portal of the Federal Ministry of Finance <https://www.bundesfinanzministerium.de/Datenportal/Daten/offene-daten/haushalt-oeffentliche-finanzen/Zeitreihe-Schuldenstand-Bruttokreditbedarf-Zinsen-Tilgung-ab1996/Zeitreihe-Schuldenstand-Tilgung-ab1996.html>*).

- (b) External floating indebtedness of the Federal Republic. (Total to be stated in the respective currencies in which payable.)

None.

6. Statements of the receipts, classified by source, and of the expenditures, classified by purpose, of the Federal Republic for each fiscal year of the Federal Republic ended since the close of the latest fiscal year for which such information was previously reported. These statements should be so itemized as to be reasonably informative and should cover both ordinary and extraordinary receipts and expenditures; there should be indicated separately, if practicable, the amount of receipts pledged or otherwise specifically allocated to any issue registered, indicating the issue.

See “The Federal Republic of Germany—Public Finance”, pp. G-37 et seq. of Exhibit (d), which are hereby incorporated by reference herein.

7. (a) If any foreign exchange control, not previously reported, has been established by the Federal Republic, briefly describe the effect of any such action, not previously reported.

No foreign exchange control not previously reported was established by the Federal Republic during 2022.

- (b) If any foreign exchange control previously reported has been discontinued or materially modified, briefly describe the effect of any such action, not previously reported.

No foreign exchange control previously reported was discontinued or materially modified during 2022.

8. Brief statements as of a date reasonably close to the date of the filing of this report (indicating such date), in respect of the note issue and gold reserves of the central bank of issue of the Federal Republic, and of any further gold stocks held by the Federal Republic.

See “The Federal Republic of Germany—Monetary and Financial System—Official Foreign Exchange Reserves,” p. G-29 of Exhibit (d), which is hereby incorporated by reference herein.

9. Statements of imports and exports of merchandise for each year ended since the close of the latest year for which such information was previously reported. The statements should be reasonably itemized so far as practicable as to commodities and as to countries. They should be set forth in terms of value and of weight or quantity; if statistics have been established in terms of value, such will suffice.

See “The Federal Republic of Germany—The Economy—International Economic Relations—Balance of Trade,” pp. G-23 et seq. of Exhibit (d), which are hereby incorporated by reference herein.

10. The balances of international payments of the Federal Republic for each year ended since the close of the latest year for which such information was previously reported. The statements of such balances should conform, if possible, to the nomenclature and form used in the “Statistical Handbook of the League of Nations.” (These statements need to be furnished only if the Federal Republic has published balances of international payments.)

See “The Federal Republic of Germany—The Economy—International Economic Relations—Balance of Payments,” pp. G-23 et seq. of Exhibit (d), which is hereby incorporated by reference herein.

This annual report comprises:

(a) Pages numbered 1 to 9, consecutively.

(b) The following exhibits:

- Exhibit (a) - None.
- Exhibit (b) - None.
- Exhibit (c) - The latest annual budget for the Federal Republic of Germany (pp. G-37 to G-40 of Exhibit (d) hereto).
- Exhibit (d) - Description of KfW and the Federal Republic of Germany, dated May 11, 2023.
- Exhibit (e) - KfW Financial Information 2022.
- Exhibit (f) - Consent of Deloitte GmbH Wirtschaftsprüfungsgesellschaft.
- Exhibit (g) - Consent of the Federal Republic of Germany.

This annual report is filed subject to the Instructions for Form 18-K for Foreign Governments and Political Subdivisions thereof.

EXHIBIT INDEX

<u>Exhibit</u>	<u>Description</u>
(c)	<u>Latest annual budget for the Federal Republic of Germany (pp. G-37 to G-40 of Exhibit (d) hereto).</u>
(d)	<u>Description of KfW and the Federal Republic of Germany, dated May 11, 2023.</u>
(e)	<u>KfW Financial Information 2022.</u>
(f)	<u>Consent of Deloitte GmbH Wirtschaftsprüfungsgesellschaft.</u>
(g)	<u>Consent of the Federal Republic of Germany.</u>

SIGNATURES

Pursuant to the requirements of the Securities and Exchange Act of 1934, the registrant has duly caused this annual report to be signed on its behalf by the undersigned, thereunto duly authorized in Frankfurt/Main, Germany, on May 11, 2023.

KfW

By: /S/ STEFAN WINTELS

Name: Stefan Wintels

Title: Chief Executive Officer

By: /S/ BERND LOEWEN

Name: Bernd Loewen

Title: Member of the Executive Board

This description of KfW and the Federal Republic of Germany is dated May 11, 2023 and appears as Exhibit (d) to the Annual Report on Form 18-K of KfW for the fiscal year ended December 31, 2022.

TABLE OF CONTENTS

	<u>Page</u>
<u>PRESENTATION OF FINANCIAL AND OTHER INFORMATION</u>	1
<u>RECENT DEVELOPMENTS</u>	2
<u>KfW</u>	2
<u>KfW's Results for the Three Months Ended March 31, 2023</u>	2
<u>THE FEDERAL REPUBLIC OF GERMANY</u>	6
<u>Overview of Key Economic Figures</u>	6
<u>Other Recent Developments</u>	9
<u>KfW</u>	10
<u>GENERAL</u>	10
<u>Overview</u>	10
<u>Ownership</u>	10
<u>Legal Status</u>	11
<u>Relationship with the Federal Republic</u>	11
<u>Supervision and Regulation</u>	12
<u>Corporate Background</u>	15
<u>Sustainable Promotion</u>	16
<u>Financial Statements and Auditors</u>	18
<u>BUSINESS</u>	19
<u>Introduction</u>	19
<u>Domestic Promotional Business</u>	20
<u>SME Bank & Private Clients</u>	24
<u>Customized Finance & Public Clients</u>	26
<u>KfW Capital</u>	28
<u>Export and Project Finance (KfW IPEX-Bank)</u>	29
<u>KfW Entwicklungsbank (KfW Development Bank)</u>	33
<u>DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH</u>	34
<u>Financial Markets</u>	35
<u>Strategic Shareholdings</u>	41
<u>CAPITALIZATION</u>	44
<u>MANAGEMENT AND EMPLOYEES</u>	45
<u>Executive Board</u>	45
<u>Board of Supervisory Directors</u>	47
<u>Employees</u>	50
<u>THE FEDERAL REPUBLIC OF GERMANY</u>	G-1
<u>GENERAL</u>	G-1
<u>Area, Location and Population</u>	G-1
<u>Government</u>	G-2
<u>Political Parties</u>	G-3
<u>International Organizations</u>	G-4
<u>The European Union and European Integration</u>	G-4
<u>Monetary Integration</u>	G-8
<u>Statistical Standards</u>	G-12
<u>THE ECONOMY</u>	G-13
<u>Overview</u>	G-13
<u>Key Economic Figures</u>	G-13
<u>Economic Outlook</u>	G-14
<u>General Economic Policy</u>	G-15
<u>Gross Domestic Product</u>	G-17
<u>Sectors of the Economy</u>	G-18

<u>Employment and Labor</u>	G-19
<u>Social Security, Social Protection, and Social Policy</u>	G-21
<u>International Economic Relations</u>	G-22
<u>MONETARY AND FINANCIAL SYSTEM</u>	G-28
<u>The ESCB and the Eurosystem</u>	G-28
<u>Monetary Policy</u>	G-28

<u>Official Foreign Exchange Reserves</u>	G-29
<u>External Positions of Banks</u>	G-29
<u>Foreign Exchange Rates and Controls</u>	G-30
<u>Financial System</u>	G-30
<u>Securities Market</u>	G-36
<u>PUBLIC FINANCE</u>	G-37
<u>Receipts and Expenditures</u>	G-37
<u>Germany's General Government Deficit/Surplus and General Government Gross Debt</u>	G-38
<u>Fiscal Outlook</u>	G-40
<u>Tax Structure</u>	G-40
<u>Government Participations</u>	G-42
<u>Direct Debt of the Federal Government</u>	G-43
<u>TABLES AND SUPPLEMENTARY INFORMATION</u>	G-45

THIS DOCUMENT (OTHERWISE THAN AS PART OF A PROSPECTUS CONTAINED IN A REGISTRATION STATEMENT FILED UNDER THE U.S. SECURITIES ACT OF 1933) DOES NOT CONSTITUTE AN OFFER TO SELL OR THE SOLICITATION OF AN OFFER TO BUY ANY SECURITIES OF KfW. THE DELIVERY OF THIS DOCUMENT AT ANY TIME DOES NOT IMPLY THAT THE INFORMATION HEREIN IS CORRECT AS OF ANY TIME SUBSEQUENT TO ITS DATE.

PRESENTATION OF FINANCIAL AND OTHER INFORMATION

In this description, references to “€”, “euro” or “EUR” are to the single European currency of the member states of the European Union participating in the euro and references to “U.S. dollars”, “\$” or “USD” are to United States dollars. See “—The Federal Republic of Germany—General—The European Union and European Integration” for a discussion of the introduction of the euro.

Unless explicitly stated otherwise, financial information relating to KfW Group presented herein has been prepared in accordance with International Financial Reporting Standards as adopted by the European Union (“IFRS”).

Amounts in tables may not add up due to rounding differences.

On May 10, 2023, the euro foreign exchange reference rate as published by the European Central Bank was EUR 1.00 = U.S. dollar 1.095 (EUR 0.9132 per U.S. dollar).

In this document, references to the “Federal Republic” and “Germany” are to the Federal Republic of Germany and references to the “Federal Government” are to the government of the Federal Republic of Germany. The terms “KfW Group” and “group” refer to KfW and its consolidated subsidiaries.

RECENT DEVELOPMENTS

KfW

KfW's Results for the Three Months Ended March 31, 2023

KfW is not required by law to prepare and publish interim financial statements in conformity with International Financial Reporting Standards as adopted by the European Union ("IFRS") applicable to interim financial reporting. Accordingly, KfW only prepares selected interim financial information rather than a full set of interim financial statements. The following information is based on this selected unaudited interim financial information prepared by KfW on the basis of the recognition and measurement principles of IFRS applicable to interim financial reporting. This information is not necessarily indicative of the figures of KfW Group for the full year ending December 31, 2023.

KfW Group's total assets decreased by 0.7%, or EUR 3.8 billion, from EUR 554.6 billion as of December 31, 2022 to EUR 550.8 billion as of March 31, 2023. KfW Group's operating result before valuation and promotional activities amounted to EUR 385 million for the three months ended March 31, 2023, compared to EUR 442 million for the corresponding period in 2022. The main driver for KfW Group's operating result before valuation and promotional activities during the three months ended March 31, 2023, was net interest income. KfW Group's operating result before valuation and promotional activities is before (i) risk provisions for lending business, (ii) net gains/losses from securities and investments, (iii) net gains/losses from hedge accounting and other financial instruments at fair value through profit or loss, and (iv) expenses relating to promotional activities. These valuation effects consisted mainly of the following:

- Income from risk provisions in an amount of EUR 5 million for the three months ended March 31, 2023, compared to expenses in an amount of EUR 188 million for the corresponding period in 2022;
- Positive effects in an amount of EUR 22 million as market values of securities and equity investments increased in the three months ended March 31, 2023, compared to negative effects of EUR 135 million for the corresponding period in 2022;
- Net gains in an amount of EUR 87 million for the three months ended March 31, 2023 due to fair value changes of derivatives used exclusively for hedging purposes in closed risk positions, compared to net gains in an amount of EUR 88 million for the corresponding period in 2022¹; and
- Expenses relating to promotional activities in an amount of EUR 82 million for the three months ended March 31, 2023, compared to expenses in an amount of EUR 100 million for the corresponding period in 2022.

KfW Group's consolidated result for the three months ended March 31, 2023 amounted to a profit of EUR 394 million, compared to a profit of EUR 60 million for the corresponding period in 2022.

¹ KfW generally enters into derivative transactions to economically hedge interest and currency risks in connection with its financing and funding activities. Some economic hedging relationships entered into do not qualify for hedge accounting or the fair value option under IFRS. In these cases, only the fair value changes in the hedging instrument are recognized in the consolidated income statement as net gains/losses from other financial instruments at fair value through profit or loss, whereas fair value changes in the hedged instrument are not. As a result, the economic risk-mitigating effect of such hedging relationships is not reflected in the consolidated income statement.

Promotional Business Volume

The following table sets forth a breakdown of commitments by business sector for the three months ended March 31, 2023, compared to the corresponding period in 2022.

PROMOTIONAL BUSINESS VOLUME BY BUSINESS SECTOR*

	Three months ended March 31,		Year-to-Year % change (in %)
	2023 (EUR in millions)	2022	
SME Bank & Private Clients (<i>Mittelstandsbank & Private Kunden</i>)	10,316	26,164	-61
Customized Finance & Public Clients (<i>Individualfinanzierung & Öffentliche Kunden</i>)	21,566	10,595	>100
KfW Capital	878	43	>100
Export and Project Finance (KfW IPEX-Bank)	6,663	3,310	>100
KfW Entwicklungsbank	506	608	-17
DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH	110	139	-21
Financial Markets	188	126	49
Total Promotional Business Volume (1) (2)	40,004	40,955	-2

* Amounts in the table may not add up due to rounding differences.

- (1) Total promotional business for the three months ended March 31, 2023, has been adjusted for commitments of EUR 223 million, compared to EUR 30 million for the corresponding period in 2022, made by KfW IPEX-Bank relating to export and project finance and refinanced under certain programs of SME Bank.
- (2) Commitments represent the volume of funds committed for loans and other business transactions (with the exception of program-based global loans and global funding facilities to *Landesförderinstitute*) in the relevant period, including amounts to be disbursed in future periods, and do not include amounts disbursed in the relevant period pursuant to commitments made in prior periods. In the case of program-based global loans and global funding facilities to *Landesförderinstitute*, commitments represent the actual volume of funds disbursed in the relevant period.

KfW's total promotional business volume decreased to EUR 40.0 billion for the three months ended March 31, 2023, compared to EUR 41.0 billion for the corresponding period in 2022. While commitments in KfW's business sector SME Bank & Private Clients decreased significantly, substantially higher commitments in the business sectors Customized Finance & Public Clients, KfW Capital and Export and Project Finance offset this development to a significant degree. Commitments in KfW Entwicklungsbank and DEG decreased while commitments in the business sector Financial Markets rose by nearly 50%.

Commitments in the SME Bank & Private Clients business sector amounted to EUR 10.3 billion for the three months ended March 31, 2023, compared to EUR 26.2 billion for the corresponding period in 2022. This significant decrease was attributable to lower commitments in both the SME Bank as well as in the Private Clients segment due to more stringent application criteria with respect to the programs Federal Funding for Efficient Buildings (BEG) and overall weaker demand for real estate financing in light of higher interest rates.

Commitments in the business sector Customized Finance and Public Clients amounted to EUR 21.6 billion for the three months ended March 31, 2023, compared to EUR 10.6 billion for the corresponding period in 2022. This significant increase was primarily driven by an increase in loan commitments to companies in the energy sector, which, as previously disclosed, were made under special mandates by the Federal Government against the background of rising energy prices and their impact on the stability of the relevant infrastructure in Germany following Russia's invasion of Ukraine.

Commitments related to KfW Capital increased to EUR 878 million for the three months ended March 31, 2023, compared to EUR 43 million for the corresponding period in 2022. This substantial increase is mainly due to the investments made by KfW on a fiduciary basis for the Federal Government with governmental funds into the "European Tech Champions Initiative" under the "Future Fund" (*Zukunftsfonds*).

Commitments in KfW's Export and Project Finance business sector for the three months ended March 31, 2023 amounted to EUR 6.7 billion, compared to commitments of EUR 3.3 billion for the corresponding period in 2022. This significant increase was mainly due to higher commitments made by KfW IPEX-Bank in the sectors Maritime industries, Power, renewables and water, Basic industries, Infrastructure, Aviation, mobility and transport, and Industries and services.

Commitments related to KfW Entwicklungsbank amounted to EUR 506 million for the three months ended March 31, 2023, compared to EUR 608 billion for the corresponding period in 2022. This decrease was mainly driven by lower commitments with respect to Financial Cooperation Standard Loans / Grants (*FZ-Standardkredite/Zuschüsse*), Financial Cooperation Development Loans (*FZ-Entwicklungskredite*) and Promotional Loans (*FZ-Förderkredite*).

Commitments of DEG amounted to EUR 110 million for the three months ended March 31, 2023, compared to EUR 139 million as of March 31, 2022. While this development represents a year-on-year decline, it should be noted that the intensity of deal origination usually varies, and may increase, over the course of a year.

Commitments in KfW's Financial Markets business sector increased to EUR 188 million for the three months ended March 31, 2023, compared to EUR 126 million for the corresponding period in 2022. All commitments in KfW's Financial Markets business sector were made under KfW's green bond portfolio.

Sources of Funds

The volume of funding raised in the capital markets for the three months ended March 31, 2023 totaled EUR 28.1 billion, of which 68% was raised in euro, 13% in U.S. dollar and the remainder in five other currencies.

Capitalization and Indebtedness of KfW Group as of March 31, 2023*

	(EUR in millions)
Borrowings	
Short-term funds	35,512
Bonds and other fixed-income securities	388,435
Other borrowings	73,801
Total borrowings	497,749
Equity	
Paid-in subscribed capital (1)	3,300
Capital reserve	8,447
Reserve from the ERP Special Fund	1,191
Retained earnings	23,785
Fund for general banking risks	200
Revaluation reserve	-38
Total equity	36,884
Total capitalization	534,633

* Amounts in table may not add up due to rounding differences.

(1) KfW's equity capital, 80% of which is held by the Federal Government and the remaining 20% by the *Länder*, amounted to EUR 3,750 million as of March 31, 2023, of which EUR 3,300 million has been paid in pro rata by the Federal Government and the *Länder*.

The capitalization of KfW Group as of March 31, 2023 is not necessarily indicative of its capitalization to be recorded as of December 31, 2023.

KfW Group's total equity as of March 31, 2023 was EUR 36,884 million, compared to EUR 36,579 million as of December 31, 2022. The increase, of EUR 305 million in total equity reflected:

- (i) KfW Group's consolidated profit of EUR 394 million for the three months ended March 31, 2023; and
- (ii) a decrease of EUR 89 million of revaluation reserves due to valuation results recognized directly in equity relating to pensions and own credit risk.

In connection with the phase-in of the analogous application of banking supervisory law to KfW, the provisions of the EU Capital Requirements Regulation (Regulation EU No 575/2013, "CRR"), the German Banking Act (*Kreditwesengesetz*) and the German Solvency Regulation (*Solvabilitätsverordnung*), which require banks to have adequate own funds (*Eigenmittel*) for the conduct of their business, have become

applicable to KfW by analogy with effect from January 1, 2016. In June 2017, KfW received the approval from the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*) to calculate its regulatory capital requirements following the advanced internal ratings-based approach (“IRBA”) for a large part of its portfolio as of June 30, 2017.

Based on the results for the three months ended March 31, 2023, KfW’s total capital ratio amounted to 27.2% and its Tier 1 capital ratio according to Article 92 of the CRR amounted to 27.0%, in each case as of March 31, 2023 (not taking into account the interim profit of the year to date)². The increase of the total capital ratio and the Tier 1 capital ratio compared to December 31, 2022, when the total capital ratio amounted to 25.2% and the Tier1 Capital ratio amounted to 25.0%, was mainly due to the recognition of the profit of the second half of 2022, the modified inclusion of associated companies as well as the implementation of the standard approach for securitizations, which reduced the total risk exposure amount.

² According to Article 26(2) CRR.

THE FEDERAL REPUBLIC OF GERMANY

Overview of Key Economic Figures

The following economic information regarding the Federal Republic is derived from the public official documents cited below. Certain of the information is preliminary.

Gross Domestic Product (GDP)

GROSS DOMESTIC PRODUCT

(adjusted for price, seasonal and calendar effects) (1)

Reference period	Percentage change on the previous quarter	Percentage change on the same quarter in previous year
1 st quarter 2022	1.0	3.8
2 nd quarter 2022	-0.1	1.6
3 rd quarter 2022	0.5	1.4
4 th quarter 2022	-0.5	0.8
1 st quarter 2023	0.0	-0.1

(1) Adjustment for seasonal and calendar effects according to the Census X13 method.

Germany's gross domestic product ("GDP") was unchanged (0.0%) in the first quarter of 2023 compared to the fourth quarter of 2022 after adjustment for price, seasonal and calendar effects, following a decrease at the end of 2022. This was mainly due to a decline in the final consumption expenditure of both households and government being offset by an increase in capital formation and exports.

Compared to the first quarter of 2022, price-adjusted GDP in the first quarter of 2023 increased by 0.2%. The price and calendar adjusted GDP was 0.1% lower because there was one working day more than in the same period a year earlier.

Source: Federal Statistical Office, *Gross domestic product stagnant in 1st quarter of 2023*, press release of April 28, 2023 (https://www.destatis.de/EN/Press/2023/04/PE23_169_811.html).

Inflation Rate

INFLATION RATE

(based on overall consumer price index)

Reference period	Percentage change on the previous month	Percentage change on the same month in previous year
April 2022	0.6	6.3
May 2022	0.9	7.0
June 2022	0.0	6.7
July 2022	0.5	6.7
August 2022	0.4	7.0
September 2022	1.8	8.6
October 2022	0.7	8.8
November 2022	0.2	8.8
December 2022	-0.4	8.1
January 2023	1.0	8.7
February 2023	0.8	8.7
March 2023	0.8	7.4
April 2023	0.4	7.2

The inflation rate in Germany, measured as the year-on-year change in the consumer price index, stood at 7.2% in April 2023. While this is the second month in a row that the rate of inflation has slowed down, it still remains at a high level. In April 2023, the most important driver of inflation was the price of food.

Food prices experienced an above-average increase of 17.2% in April 2023 compared to April 2022. When compared to March 2023, which saw a 22.3% rise in food prices compared to March 2022, this increase in food prices showed signs of slowing down. Higher prices were recorded for all food groups, with considerable price rises being recorded for dairy products (+34.8%), bread and cereals (+21.3%), fish, fish products, and seafood (+19.7%) and sugar, jam, honey and other confectionery (+19.6%).

Energy prices in April 2023 increased by 6.8% compared to April 2022, following a marked slowdown in the inflation rate in March 2023 compared to March 2022 (+3.5%). Although the rate of increase in energy prices picked up again in April 2023, it was still below the overall inflation rate. The year-on-year increase in energy prices has been below average since March 2023, mainly due to a base effect originating from the previous year's large price increases as a result of Russia's invasion of Ukraine. Household energy prices (total), in particular, increased in April 2023 compared to April 2022 (+22.1%), with above-average increases being observed in natural gas prices (+33.8%) as well as in the prices of firewood, wood pellets and other solid fuels (+29.8%). Consumers also had to pay significantly more than a year earlier for electricity (+15.4%) and district heating (+12.3%). Heating oil prices, in contrast, decreased substantially by 21.8%, and motor fuel prices declined by 9.4% in April 2023 compared to April 2022. Overall, the development of energy prices is subject to many factors, such as the electricity, natural gas and district heating price brakes, which have been in effect since January 2023. Excluding energy prices, the inflation rate in April 2023 would have been 7.2%; excluding energy and food prices, it would have been even lower at 5.8%, demonstrating the enormous impact of food prices on overall inflation.

Prices of goods (total) increased by 9.3% from April 2022 to April 2023. The prices of non-durable consumer goods increased by 11.4% and those of durable consumer goods by 5.9% in April 2023 compared to April 2022.

In April 2023, the prices of services (total) increased by 4.7% compared to April 2022. Net rents exclusive of heating expenses, which are important as they account for a large part of household consumption expenditure, rose by 2.0%. Significant price increases were observed for services regarding the maintenance and repair of dwellings (+14.8%), package holidays and services of social facilities (each +10.4%). In contrast, a price decrease was observed for telecommunications (-1.0%).

Compared to March 2023, the consumer price index rose by 0.4% in April 2023. Price increases were recorded for clothing (+1.8%) and overnight stays (+1.6%). Energy prices overall also increased (+0.7%), despite the price cap, in particular for district heating (+3.3%). Motor fuel prices (total) increased (+1.6%), while decreases were observed in the prices of heating oil (-3.1%) and natural gas (-0.3%) in April 2023 compared to March 2023. Households also had to pay slightly less for food in general (-0.8%) in April 2023 compared to March 2023, with lower prices being recorded in particular for vegetables (-7.5%) and edible fats and oils (-3.0%).

Sources: Federal Statistical Office, Short-term indicators: Price indices at a glance (consumer prices, retail prices, producer prices, selling prices in wholesale trade, import prices, export prices). Tables with values and rates of change (<https://www.destatis.de/EN/Themes/Economy/Short-Term-Indicators/Prices/pre110.html>); Federal Statistical Office, Inflation rate at +7.2% in April 2023, press release of May 10, 2023 (https://www.destatis.de/EN/Press/2023/05/PE23_179_611.html).

Unemployment Rate

UNEMPLOYMENT RATE

(percent of unemployed persons in the total labor force according to the International Labour Organization (ILO) definition) (1)

Reference period	Original percentages	Adjusted percentages (2)
March 2022	3.0	3.0
April 2022	3.2	3.0
May 2022	2.9	3.0
June 2022	2.9	3.0
July 2022	3.4	3.1
August 2022	3.1	3.1
September 2022	2.9	3.1
October 2022	3.0	3.1
November 2022	3.0	3.0
December 2022	2.9	3.0
January 2023	3.0	2.9
February 2023	3.0	2.9
March 2023	2.9	2.8

(1) The time series on unemployment are based on the German Labour Force Survey.

(2) Trend cycle component (X-13-ARIMA method using JDemetra+; calculation by Eurostat).

Compared to March 2022, the number of employed persons in March 2023 increased by approximately 446,000 or 1.0%. Compared to February 2023, the number of employed persons increased in March 2023 by approximately 57,000 or 0.1% after adjustment for seasonal fluctuations.

In March 2023, the number of unemployed persons declined by approximately 31,000 or 2.4% compared to March 2022. Adjusted for seasonal and irregular effects, the number of unemployed persons in March 2023 stood at 1.26 million, reflecting a decline by approximately 17,800 or 1.4% compared to February 2023.

Sources: Federal Statistical Office, *Employment remained on a solid upward trend in March 2023*, press release of April 28, 2023 (https://www.destatis.de/EN/Press/2023/04/PE23_168_132.html); German version: https://www.destatis.de/DE/Presse/Pressemitteilungen/2023/04/PD23_168_132.html); Federal Statistical Office, *Genesis-Online Datenbank, Result 13231-0001, Unemployed persons, persons in employment, economically active population, unemployment rate: Germany, months, original and adjusted data* (<https://www-genesis.destatis.de/genesis/online?sequenz=tabelleErgebnis&selectionname=13231-0001&zeitscheiben=2&leerzeilen=false&language=en#abreadcrumb>).

Current Account and Foreign Trade

CURRENT ACCOUNT AND FOREIGN TRADE

Item	(balance in EUR billions) (1)	
	January-February 2023	January-February 2022
Goods	30.7	22.0
Services	-4.2	3.8
Primary income	24.7	25.9
Secondary income	-11.6	-11.8
Current account	39.6	39.9

(1) Figures may not add up due to rounding.

Source: Deutsche Bundesbank, *Balance of payments statistics, 13-04-2022, I. Major items of the balance of payments* (<https://www.bundesbank.de/resource/blob/907692/c7194d13200298f3f471d99abcda78cf/mL/2023-04-13-zahlungsbilanz-anlage-data.pdf>).

Other Recent Developments

Monetary Policy

On May 4, 2023, the Governing Council of the European Central Bank (“ECB”) decided to raise the three key ECB interest rates by 25 basis points to 3.75% (main refinancing operations), 4.00% (marginal lending facility) and 3.25% (deposit facility) with effect from May 10, 2023, following its decisions in March 2023 and February 2023, in each case to raise the three key ECB interest rates by 50 basis points. The Governing Council stressed that although headline inflation has declined over recent months, underlying price pressures still remain strong. The Governing Council reasserted that its policy rate decisions will continue to be based on its assessment of the inflation outlook in light of the incoming economic and financial data, the dynamics of underlying inflation, and the strength of monetary policy transmission.

The Governing Council also announced that the Asset Purchase Program (“APP”) portfolio is declining at a measured and predictable pace, as the Eurosystem is not reinvesting all of the principal payments from maturing securities. The decline is expected to amount to EUR 15 billion per month on average until the end of June 2023. The Governing Council expects to discontinue reinvestments under the APP as of July 2023. The Governing Council also stated that it intends to reinvest the principal payments from maturing securities purchased under the Pandemic Emergency Purchase Programme (“PEPP”) until at least the end of 2024 and that the future roll-off of the PEPP will be managed to avoid interference with the appropriate monetary policy stance.

Sources: European Central Bank, Monetary policy decisions, press release of May 4, 2023 (<https://www.ecb.europa.eu/press/pr/date/2023/html/ecb.mp230504~cdfd11a697.en.html>); European Central Bank, Key ECB interest rates, accessed on May 4, 2023 (https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html).

KfW

GENERAL

Overview

KfW is a public law institution (*Anstalt des öffentlichen Rechts*) serving domestic and international public policy objectives of the Federal Government (“Federal Government”) of the Federal Republic of Germany (“Federal Republic”). KfW promotes its financing activities under the umbrella brand name KfW Bankengruppe (“KfW Group”).

With total assets of EUR 554.6 billion as of December 31, 2022, including loans and advances of EUR 465.7 billion, KfW is Germany’s flagship promotional bank and ranks among Germany’s largest financial institutions. KfW’s promotional business volume amounted to EUR 166.9 billion in 2022. For more information on KfW’s promotional business volume, see the table “Promotional Business Volume by Business Sector” in “Business—Introduction.”

KfW conducts its business in the following business sectors:

- SME Bank & Private Clients (*Mittelstandsbank & Private Kunden*): offers highly standardized products primarily for small and medium-sized enterprises (“SMEs”), business founders, start-ups, self-employed professionals and private individuals;
- Customized Finance & Public Clients (*Individualfinanzierung & Öffentliche Kunden*): provides individual financing solutions for municipal and social infrastructure, and offers corporate loans and project financing as well as customized financing for financial institutions and *Landesförderinstitute*;
- KfW Capital: KfW Capital GmbH & Co. KG (“KfW Capital”) invests in German and European venture capital and venture debt funds with the aim of improving access to capital for innovative, technology-oriented growth companies in Germany through professionally managed funds. KfW Capital is a legally independent entity wholly owned by KfW;
- Export and Project Finance: KfW IPEX-Bank GmbH (“KfW IPEX-Bank”) offers customized financing for exports and project and corporate financing worldwide. KfW IPEX-Bank is a legally independent entity wholly owned by KfW;
- KfW Entwicklungsbank (KfW Development Bank) is responsible for KfW’s public sector development cooperation activities;
- DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH (German Investment and Development Company, “DEG”) finances private-sector investments in developing countries. DEG is a legally independent entity wholly owned by KfW; and
- Financial Markets: comprises KfW’s treasury, funding, asset management and other capital markets-related activities.

KfW’s offices are located at Palmengartenstraße 5-9, 60325 Frankfurt am Main, Germany. KfW’s telephone number is 011-49-69-74310. KfW also maintains branch offices in Berlin and Bonn, Germany, as well as a liaison office to the EU in Brussels, Belgium.

Ownership

The Federal Republic holds 80% of KfW’s subscribed capital, and the German federal states (each, a “Land” and together, the “Länder”) hold the remaining 20%. The Law Concerning KfW (*Gesetz über die Kreditanstalt für Wiederaufbau*, or the “KfW Law”) does not provide for shareholders’ meetings; instead, the Board of Supervisory Directors assumes the responsibilities of a shareholders’ meeting. For more information on the Board of Supervisory Directors, see “Management and Employees—Board of Supervisory Directors.”

Shares in KfW's capital may not be pledged; they may not be transferred to entities other than the Federal Republic or the Länder. Capital contributions have been, and are expected to continue to be, made to KfW in such proportions as to maintain the relative shares of capital held by the Federal Republic and the Länder.

Legal Status

KfW is organized under the KfW Law as a public law institution with unlimited duration. As a public law institution serving public policy objectives of the Federal Government, KfW itself is not subject to corporate taxes (although certain of its subsidiaries are), and as a promotional bank, KfW does not seek to maximize profits. KfW does, however, seek to maintain an overall level of profitability that allows it to strengthen its equity base in order to support its promotional activities. KfW is prohibited under the KfW Law from distributing profits, which are instead allocated to statutory reserves and to separately reportable reserves. KfW is generally also prohibited under the KfW Law from taking deposits or engaging in the financial commission business.

Relationship with the Federal Republic

Guarantee of the Federal Republic

The KfW Law expressly provides that the Federal Republic guarantees all existing and future obligations of KfW in respect of money borrowed, bonds and notes issued and derivative transactions entered into by KfW, as well as obligations of third parties that are expressly guaranteed by KfW (KfW Law, article 1a). Under this statutory guarantee (the "Guarantee of the Federal Republic"), if KfW fails to make any payment of principal or interest or any other amount required to be paid with respect to securities issued by KfW, or if KfW fails to make any payment required to be made under KfW's guarantee when that payment is due and payable, the Federal Republic will be liable at all times for that payment as and when it becomes due and payable. The Federal Republic's obligation under the Guarantee of the Federal Republic ranks equally, without any preference, with all of its other present and future unsecured and unsubordinated indebtedness. Holders of securities issued by KfW or issued under KfW's guarantee may enforce this obligation directly against the Federal Republic without first having to take legal action against KfW. The Guarantee of the Federal Republic is strictly a matter of statutory law and is not evidenced by any contract or instrument. It may, however, be subject to defenses available to KfW with respect to the obligations covered.

Institutional Liability (Anstaltslast)

KfW is a public law institution (*Anstalt des öffentlichen Rechts*). Accordingly, under the German administrative law principle of *Anstaltslast*, the Federal Republic, as the constituting body of KfW, has an obligation to safeguard KfW's economic basis. Under *Anstaltslast*, the Federal Republic must keep KfW in a position to pursue its operations and enable it, in the event of financial difficulties, through the allocation of funds or in some other appropriate manner, to meet its obligations when due. *Anstaltslast* is not a formal guarantee of KfW's obligations by the Federal Republic, and creditors of KfW do not have a direct claim against the Federal Republic. Nevertheless, the effect of this legal principle is that KfW's obligations, including the obligations to the holders of securities issued by it or issued under KfW's guarantee, are fully backed by the credit of the Federal Republic. The obligation of the Federal Republic under *Anstaltslast* would constitute a charge on public funds that, as a legally established obligation, would be payable without the need for any appropriation or any other action by the German Parliament.

Understanding with the European Commission

In order to clarify that the Federal Republic's responsibility for KfW's obligations was and is compatible with EU law prohibitions against state aid, the German Federal Ministry of Finance and the European Commissioner for Competition held discussions which were formalized in an understanding reached on March 1, 2002. In the understanding with the European Commission, it was agreed that, in respect of the promotional activities for which KfW is responsible, KfW will continue to benefit from *Anstaltslast* and the Guarantee of the Federal Republic. The understanding acknowledged that KfW's role in providing financing for, in particular, SMEs, risk capital, environmental protection, technology/innovation, infrastructure and housing, as well as its cooperation with developing countries, is of a promotional nature and thus compatible with EU rules.

In the business sector of Export and Project Finance, the understanding with the European Commission required KfW to transfer to a legally independent subsidiary that portion of export finance and domestic and international project finance activities which the European Commission deemed to fall outside the scope of the promotional activities of KfW. The transfer of such activities was to be effected by December 31, 2007, and as from that date, KfW has not been permitted to fund the subsidiary at other than market rates of interest or to extend to the subsidiary any benefits of *Anstaltslast* or the Guarantee of the Federal Republic.

KfW continues to be permitted, however, to engage directly in the following promotional export and project finance activities:

- implementation of international promotional programs, such as the interest-rate subsidized CIRR (Commercial Interest Reference Rate) and ASU (Aircraft Sector Understanding) schemes, which are recognized as promotional activities in accordance with the Organization for Economic Cooperation and Development (“OECD”) consensus;
- participation in syndicated financing activities outside the EU, the European Economic Area and countries holding the status of official candidate for EU membership, subject to certain conditions, and sole financing activities in countries in which sufficient sources of financing do not exist; and
- participation in projects in the interest of the EU that are co-financed by the European Investment Bank or similar European financing institutions.

The European Commission transformed the understanding into a decision, which the Federal Republic formally accepted. In August 2003, a part of the Promotional Bank Restructuring Act (*Förderbankenneustrukturierungsgesetz*) implemented the understanding with the European Commission and amended the KfW Law accordingly.

On January 1, 2008, KfW IPEX-Bank, a limited liability company (*Gesellschaft mit beschränkter Haftung*) formed as a wholly owned subsidiary of KfW, commenced operations as a legally independent entity, thus satisfying the requirements set forth in the understanding with the European Commission. KfW IPEX-Bank conducts those export and project finance activities which the European Commission deemed to fall outside the scope of KfW’s promotional activities directly and on its own behalf. For more information on KfW IPEX-Bank, see “Business—Export and Project Finance (KfW IPEX-Bank).”

Supervision and Regulation

Supervision

The Federal Ministry of Finance, acting in consultation with the Federal Ministry for Economic Affairs and Climate Action, exercises legal supervision (*Rechtsaufsicht*) over KfW, i.e., it supervises KfW’s compliance with applicable laws and may adopt all necessary measures to ensure such compliance. Legal supervision primarily comprises supervision of compliance with the KfW Law and KfW’s Bylaws, but also with all other applicable laws and regulations, except for certain provisions of bank regulatory law referenced in the following paragraph and described in “Regulation.” The relevant Federal Ministers are represented on KfW’s Board of Supervisory Directors, which supervises KfW’s overall activities. See below “Management and Employees—Board of Supervisory Directors.”

In addition to being subject to legal supervision by the Federal Ministries, in October 2013, KfW became subject to banking-specific supervision exercised by the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*, or “BaFin”). This supervision was established by a ministerial regulation (*KfW-Verordnung*, or “KfW Regulation”), which implements an amendment to the KfW Law that became effective in July 2013. The KfW Regulation, while maintaining KfW’s general exemption from bank regulatory law, specifies those provisions of bank regulatory law which are to apply to KfW by analogy and assigns the supervision of compliance with these provisions to BaFin. In exercising its supervision, BaFin cooperates with the German Central Bank (“Deutsche Bundesbank”) in accordance with normal bank supervisory procedures. For further details, see “Supervision and Regulation—Regulation.”

In addition to compliance with the financial reporting and auditing standards generally applicable to banks in Germany, KfW, under the KfW Law, is subject to special auditing standards for government-owned entities set forth in the Budgeting and Accounting Act (*Haushaltsgrundsatzgesetz*). These special auditing

standards require that KfW's annual audit, above and beyond its normal scope, cover the proper conduct of KfW's business by its management. The resulting auditor's report is to enable the Board of Supervisory Directors, the responsible Federal Ministries and the Federal Court of Auditors (*Bundesrechnungshof*) to form their own opinion and to take action if required.

Finally, as a government-owned entity, KfW is subject to audits by the Federal Court of Auditors with regard to its economical use of funds pursuant to the Budgeting and Accounting Act.

Regulation

Overview of KfW's Regulatory Status. KfW is generally exempt from bank regulatory laws and regulations, as it qualifies neither as a "credit institution" or "financial services institution" within the meaning of the German Banking Act (*Gesetz über das Kreditwesen*, or "KWG"), nor as a "credit institution" within the meaning of relevant EU directives and regulations, including in particular the EU Capital Requirements Directive (Directive 2013/36/EU, as amended) ("CRD") and the EU Capital Requirements Regulation (Regulation (EU) 575/2013, as amended) ("CRR"). However, by operation of the KfW Regulation, considerable portions of the KWG and the CRR, including relevant implementing rules and regulations, apply by analogy to KfW. The analogous application of banking supervisory law to KfW has been phased in gradually, with the majority of the rules, regulations and enforcement powers described above having become applicable as of January 1, 2016. The KfW Regulation takes into account KfW's special status as an entity not generally engaged in deposit taking, characterized by a low-risk profile in its lending business and benefiting from the Guarantee of the Federal Republic. It therefore provides for certain modifications and exceptions in connection with the analogous application of the relevant rules and regulations.

The analogous application of EU and national bank regulatory law imposed by the KfW Regulation is without prejudice to KfW's status as a "public sector entity" within the meaning of article 4 paragraph 1 no. 8 of the CRR. This status confers certain advantages to KfW's refinancing activities given the fact that exposures to public sector entities held by banks are privileged as to capital requirements, large exposures limitations and liquidity measurement under EU and national bank regulatory law. Securities issued by KfW, such as bonds and notes, are eligible in the EU as level 1 assets pursuant to article 10 paragraph 1 lit. (c) (v) of the Commission Delegated Regulation (EU) 2015/61 of October 10, 2014 ("Delegated Regulation"), subject to all other requirements stated in the Delegated Regulation being met.

Bank Regulatory Rules and Regulations Applied by Analogy. By operation of the KfW Regulation, bank regulatory requirements for corporate governance set forth in Sections 25c through 25d of the KWG apply to KfW by analogy. To comply with these requirements, certain adjustments were made to the committee structure of KfW's Board of Supervisory Directors in 2014. For more information on the committee structure of KfW's Board of Supervisory Directors, see "Management and Employees—Board of Supervisory Directors."

Since January 1, 2018, the bank regulatory requirements for remuneration policies set forth in Section 25a of the KWG and further specified in the German Remuneration Regulation for Credit Institutions (*Institutsvergütungsverordnung*, or "IVV") apply to KfW.

The capital adequacy regime set forth in part 2 titles I through III and part 3 titles I through VI of the CRR has become applicable by analogy virtually in its entirety to KfW with effect from January 1, 2016, including the calculation of regulatory own funds and own funds requirements on a consolidated basis. KfW is also subject to the capital buffers regime introduced by CRD and transposed into national law in Sections 10c through 10i of the KWG. In June 2017, KfW received approval from BaFin to calculate its regulatory capital requirements in accordance with the advanced IRBA for the vast majority of its portfolio as of June 30, 2017. In line with regulatory requirements, KfW intends to seek additional approval for other sub-portfolio segments and models in the future. KfW's total capital ratio according to article 92 of the CRR amounted to 25.2% and its Tier 1 capital ratio to 25.0%, both as of December 31, 2022 (not taking into account the interim profit of the second half of 2022)¹. The increase of the total capital ratio as well as of the Tier 1 capital ratio compared to the figures as of December 31, 2021, which amounted to 23.9% in both cases, was mainly due to the recognition of the profit of the second half of 2021 and the first half of 2022. This development was partly offset by methodical

¹ According to article 26(2) CRR.

adjustments (especially due to regulatory IRBA requirements) as well as the reclassification of certain structured funds as securitizations, which increased credit risk.

In connection with the application of the appropriate requirements of the capital adequacy regime, the overall capital requirement for KfW Group's total capital ratio as of December 31, 2022 was 15.9%, consisting of a total supervisory review and evaluation process capital requirement ("TSCR") of 12.3% plus a Capital Conservation Buffer, a buffer for Other Systemically Important Institutions (O-SIIs) in Germany ("OSII Buffer") and a Countercyclical Capital Buffer. The TSCR for KfW Group includes a supervisory review and evaluation process ("SREP") surcharge, which is generally meant to reflect the specific risk situation of an individual bank. In March 2022, BaFin raised KfW Group's qualified risk profile score due to certain weaknesses in the risk management of interest rate risk in the banking book from an earnings perspective. This resulted in an increase of KfW Group's SREP surcharge from 2.75% as of December 31, 2021 by 0.25% to 3.00% as of December 31, 2022. In addition, the TSCR for KfW Group includes an additional surcharge for certain IT-, internal auditing- and operational risk management-related findings, which as of December 31, 2022, amounted to 1.25% overall. This surcharge was originally imposed by BaFin in 2018 and gradually reduced in 2020, 2021 and 2022 against the following background:

In connection with standard audits of KfW conducted by Deutsche Bundesbank and BaFin in 2016, the banking supervisory authorities reported findings related to KfW's IT. As a consequence, in 2017, BaFin imposed an IT-related surcharge. The need for a modernization of KfW's information technology ("IT") architecture had already been identified before the standard audits were conducted and major projects to address the need for IT-related updates and improvements have been underway at KfW for some time. In 2017, the banking supervisory authorities also conducted standard audits related to KfW's outsourcing management and internal audit procedures, which resulted in certain additional findings. In June 2018, BaFin notified KfW that temporary capital requirements would be imposed in relation to these IT-, internal auditing- and operational risk management-related findings. The surcharge of 2.75% imposed at the time was to remain in place until the underlying issues had been resolved. In 2019, the supervisory authorities conducted a follow-up audit of KfW's IT, resulting in the imposition of an updated surcharge of 2.25% in 2020. As a result of a further follow-up audit of KfW's Internal Auditing conducted in 2020, the supervisory authorities imposed an updated surcharge of 1.75% in 2021. As result of a further follow-up audit of KfW's operational risk management conducted in 2021, the supervisory authorities imposed a reduced surcharge of 1.25% in 2022.

In 2018, BaFin had also notified KfW that it would be required to maintain an OSII Buffer of 1%, which would be phased in over a period of three years, starting with an OSII Buffer of 0.33% for 2019. For 2020 and 2021, the OSII Buffer amounted to 0.66% and 1%, respectively. With respect to the result of an IRBA model change supervisory audit, BaFin imposed risk-weighted asset ("RWA") multipliers for specific exposure classes, effective as of December 31, 2021. KfW's capital ratios for 2021 took these multipliers into account. Effective as of December 31, 2022, BaFin notified KfW that the imposed RWA multipliers were suspended due to measures taken by KfW to improve relevant processes.

As of January 1, 2016, KfW, by analogy, became subject to the large-exposures regime of part IV of the CRR as supplemented by the KWG and relevant implementing rules and regulations. Under this regime, exposures to any one client or group of connected clients are limited to 25% of eligible own funds and exposures exceeding 10% of eligible own funds are subject to special internal monitoring requirements and a reporting obligation to the German bank supervisory authorities.

In addition, KfW has been applying the provisions concerning leverage ratio with effect from January 1, 2016 by analogy. Under this regime, the ratio of KfW's Tier 1 capital to the carrying value of assets and off-balance sheet exposures is calculated on a consolidated basis. The leverage ratio is monitored internally and has been part of the prudential requirements since June 2021.

According to a decision made by BaFin in December 2015, certain provisions of the CRR such as own funds requirements, large exposures and leverage need only be considered at the group level (i.e., on a consolidated basis) and not at the entity level.

Although it was already subject to the German Anti-Money Laundering Act (*Geldwäschegesetz*), on January 1, 2016 KfW also became subject to the provisions of the KWG concerning money laundering, terrorist financing and other criminal offences at the group and entity levels.

Finally, the bank regulatory requirements for risk management systems set forth in the KWG and in the German Minimum Requirements for Risk Management (*Mindestanforderungen an das Risikomanagement*, or “MaRisk”) became applicable to KfW by analogy with effect from January 1, 2016, and provide for sound systems for risk strategy planning, the implementation of risk management and financial and operational controls as well as requirements for credit decision-making processes. Certain exemptions are granted in this context for special mandates by the Federal Government (*Zuweisungsgeschäft*) in accordance with article 2 paragraph 4 of the KfW Law, i.e., those activities which KfW carries out as requested by the Federal Government, usually at the Federal Republic’s economic risk.

The KfW Regulation does not encompass the application of the liquidity regime set forth in the CRR and the KWG. On the same grounds, KfW is generally exempt from EU and national disclosure requirements and from the EU Bank Recovery and Resolution Directive.

Supervisory Structure and Enforcement Powers. The supervision of KfW’s compliance with bank regulatory laws and regulations is assigned to BaFin in cooperation with Deutsche Bundesbank in accordance with BaFin’s general risk-oriented supervisory review and evaluation process. In this context, Deutsche Bundesbank undertakes the ongoing audit and analysis of banks with regard to both their financial stability and the adequacy of their internal governance and risk-management systems. Deutsche Bundesbank receives and preprocesses relevant data, while final decision-making and the exercise of enforcement powers are reserved for BaFin.

For purposes of supervision, the KfW Regulation has subjected KfW by analogy to the reporting and information requirements generally applicable to banks in Germany, with the exception of the automated access to client account details, with effect from January 1, 2016. After a transition period agreed with the supervisory authorities, KfW implemented a fully-fledged regulatory reporting system as of January 1, 2020.

In addition, the KfW Regulation subjects KfW by analogy to certain enforcement powers of BaFin, which comprise, among other matters, the right to demand, under certain circumstances, increases of regulatory own funds and/or a reduction of regulatory risk, or to demand changes in the senior management of KfW.

Since KfW does not qualify as a regulated entity under national or EU bank regulatory law, KfW did not become subject to the changes in the national and EU bank supervisory structure that have taken effect in recent years. In particular, KfW is not subject to supervision by the ECB pursuant to Council Regulation (EU) No. 1024/2013 establishing the European Single Supervisory Mechanism (“SSM”). KfW IPEX-Bank was included in the ECB’s comprehensive assessment of large banks conducted in 2014 in cooperation with national supervisory authorities of member states participating in the SSM. According to a decision made by the ECB in September 2014, KfW IPEX-Bank did not qualify as a significant credit institution and to date it has not been qualified as such in connection with subsequent annual reviews of large German financial institutions conducted by the ECB. Accordingly, KfW IPEX-Bank is currently not supervised directly by the ECB, but continues to be supervised by BaFin in cooperation with Deutsche Bundesbank. Depending on KfW IPEX-Bank’s business growth, KfW IPEX-Bank may eventually qualify as a significant credit institution, which would lead to direct supervision by the ECB. For more information on KfW IPEX-Bank, see “Business—Export and Project Finance (KfW IPEX-Bank).” For more information on the SSM, see “Federal Republic of Germany—Monetary and Financial System—Financial System—European Financial System—European System of Financial Supervision and European Banking Union.”

Corporate Background

KfW was established in 1948 by the Administration of the Combined Economic Area, the immediate predecessor of the Federal Republic. Originally, KfW’s purpose was to distribute and lend funds of the European Recovery Program (the “ERP”), which is also known as the Marshall Plan. Even today, several of KfW’s programs to promote the German and European economies are supported using funds to subsidize interest rates from the so-called “ERP Special Fund.” KfW has expanded and internationalized its operations over the past decades. In 1994, following the reunification of the Federal Republic and the former German Democratic Republic (“GDR”), KfW assumed the operations of the former central bank of the GDR (*Staatsbank*), which was located in Berlin, Germany.

In September 2001, KfW acquired DEG from the Federal Republic. DEG is a limited liability company that acts as the German development finance institution for the promotion of private enterprises in developing

countries and emerging economies. For more information on DEG, see “Business—DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH.”

In 2003, Deutsche Ausgleichsbank (“DtA”), which was based in Bonn, Germany, merged into KfW. DtA was formed in 1950 as a public law institution and promotional bank, and was particularly active in the area of lending to SMEs and start-up businesses. The merger was accomplished through the Promotional Bank Restructuring Act and was designed to restructure and simplify promotional banking in the Federal Republic and harmonize it with the understanding reached with the European Commission.

Sustainable Promotion

KfW Group has set sustainable promotion as its primary strategic objective and aims to improve economic, social and environmental conditions around the world, with an emphasis on promotion of the German economy. For more information on KfW’s strategic objectives, see “Combined Management Report — Basic Information on KfW Group — Strategic Objectives 2027” included in Exhibit (e) to this annual report. Against this background, KfW supports the sustainability goals of the Federal Republic, the EU and the international community and is taking action to help implement the Federal Government’s National Sustainable Development Strategy, achieve the United Nations’ Agenda 2030 objectives together with its Sustainable Development Goals (“SDGs”) and put the Paris Agreement into practice. In addition, the “Declaration by KfW Bankengruppe on the consideration of human rights in its business operations” reflects the crucial importance of human rights for all of KfW’s activities. Apart from financing investments for a more sustainable economy, KfW, on its own initiative and in cooperation with other financial market participants, strives to set benchmarks and standards for credit and capital markets, to act as a driving force for national and international initiatives and to offer its expertise to political decision-makers in Germany, Europe and worldwide.

KfW’s sustainability mission statement, which reflects a holistic approach to addressing the challenge of transitioning to a sustainable society, lays out the framework for KfW’s five sustainability action areas: banking business, bank operation, sustainability management, sustainability communications and employee relations. For more information on KfW’s approach to employee relations, see “Management and Employees—Employees.”

Banking Business

In its financing activities, KfW focuses on the social and economic megatrends of “climate change and the environment”, “globalization”, “social change”, as well as “digitalization and innovation.” Due to the particular importance of the “climate change and the environment” megatrend, KfW has been aiming to maintain an environmental ratio of at least 38% for its new commitments since 2020 as part of its strategic management system. In 2022, the environmental ratio was 36% (compared to 53% in 2021) and would have been 59% excluding loan facilities related to COVID-19 and the energy crisis (compared to 58% excluding loan facilities related to COVID-19 in 2021). For information on the loan facilities related to COVID-19 and the energy crisis, see “Business — Domestic Promotional Business — KfW measures to mitigate the economic impact of the COVID-19 pandemic in Germany” and “— KfW measures to mitigate the economic impact in Germany of Russia’s invasion of Ukraine.” The main driver for the decline in the environmental ratio was the sharp year-on-year increase in KfW’s commitments due to loan facilities in connection with the energy crisis, which did not contribute to the environmental ratio. The environmental ratio for 2022 is therefore considerably diluted, despite a slight overall increase in KfW’s total volume of commitments contributing to the environmental ratio. KfW’s environmental ratio reflects the percentage of KfW’s loan commitments for activities in the fields of climate protection (such as renewable energy, energy-efficient projects, sustainable mobility or climate change adaptation) and the protection of resources and environment (such as waste avoidance, wastewater treatment, air pollution control or noise protection) in relation to KfW’s overall new loan commitments for a certain period. To qualify for the calculation of the environmental ratio, the loan commitments taken into account also have to fulfill certain minimum requirements, for example in terms of CO₂ or energy reductions to be achieved by the projects which are financed with these commitments.

In addition, KfW is committed to contributing to the achievement of each of the 17 SDGs, which are part of the United Nations’ Agenda 2030 for Sustainable Development, under its promotional and financing mandate. To create transparency, KfW has developed a group-wide reporting method by mapping new commitments to the SDGs. While new commitments in 2022 contributed to all 17 SDGs, the most significant contributions were made to SDG 8 “Decent Work and Economic Growth”, SDG 7 “Affordable and Clean Energy” and SDG 13 “Climate Action.”

In terms of customers, important target groups for KfW's activities include Germany's small- and medium-sized enterprises, private households, municipalities, developing countries, as well as export and project finance borrowers. KfW takes ecological and social factors into account in every financing decision based on specific sustainability guidelines, which are in place for all its business sectors. In the case of promotional and project financing in developing countries and emerging economies, as well as in all export and project finance activities around the world, KfW regularly applies internationally recognized environmental and social standards (Environmental and Social Impact Assessment). KfW refuses to fund projects that could conceivably cause unacceptable environmental or social harm and the group-wide Exclusion List of KfW Group applies to all new financing and promotional activities. In 2021, KfW introduced science-based sector guidelines in accordance with the targets of the Paris Climate Agreement as an additional element to steer KfW's new financing activities in particularly greenhouse gas-intensive sectors. Initially, these Paris-compatible sector guidelines were aligned with the 1.65°C climate target. In 2022, KfW revised the sector guidelines with regard to the 1.5°C climate target with the aim of providing even more targeted support for the transformation process towards greenhouse gas neutrality. The revised sector guidelines were implemented at the beginning of 2023.

Sustainability also plays an important role in KfW's various capital market activities, be it in its role as a green bond issuer and investor or in connection with the sustainable management of its liquidity portfolio. For more information, see "Business—Financial Markets."

KfW is conscious of the fact that environmental and climate risks, as well as risks arising from poor governance and insufficient social considerations, can have a significant impact on its credit risk positions, as well as on economic and financial systems in general. As a consequence, KfW strives to continuously improve the assessment of its risk positions with a view to gaining a clear picture of the significance of environmental, climate, governance and social aspects as risk drivers.

KfW's Sustainability Report 2022, which was published in April 2023, complies with the Core option of the Global Reporting Initiative (GRI) standards and also contains KfW Group's non-financial report in accordance with the German Commercial Code (*Handelsgesetzbuch*). Based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), the report includes a special chapter outlining KfW's climate-related risks and associated processes in a transparent manner.

Banking Operations

The regulatory framework applicable to KfW's activities explicitly includes compliance with legal rules and regulations relating to environmental, social and economic matters, as well as the prevention of money laundering, terrorist financing, corruption, fraud, breaches of data protection, insider trading and embargo provisions. In addition, as a public law institution, KfW adheres to the principles of the Federal Government's Public Corporate Governance Code. Furthermore, KfW is a corporate member of Transparency International and DEG represents KfW Group in its capacity as a supporting member of the Extractive Industries Transparency Initiative. While adverse environmental impacts caused by KfW's bank operations are limited, KfW strives to reduce the ecological footprint of its banking operations, including by aiming to achieve climate-neutral operations. Among other matters, KfW's procurement guidelines require that suppliers and potential subcontractors comply with the prohibition of child and forced labor and afford protection against inhumane working conditions. Within the scope of possibilities provided by public procurement law, KfW includes social and ecological requirements in its contract conditions for Europe-wide tenders.

Sustainability Management System and Sustainability Communications

KfW's sustainability management system establishes responsibilities and procedures to further develop sustainability matters within KfW Group. Overall responsibility for the group's sustainability strategy and communication rests with the Chief Sustainability Officer - KfW's Chief Executive Officer - who is supported by sustainability officers and managers at the group, business sector, central unit and site levels. Specific sustainability guidelines for the business sectors and relevant central units set out detailed rules. To ensure continuous progress of the group-wide sustainability commitment, KfW's strategic objectives define KfW's ranking as one of the top five national and international promotional banks in relevant sustainability ratings as one of the key targets. KfW regularly interacts openly with its stakeholders about aspects of its business activity related to sustainability with a view to refining its own sustainability goals and enabling stakeholders to address relevant topics. In this context, KfW's Sustainability Report, which also fulfills statutory requirements, and KfW's Sustainability Portal are important communication channels.

Financial Statements and Auditors

The consolidated financial statements of KfW included in Exhibit (e) to this annual report have been prepared in accordance with IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e (1) of the German Commercial Code (*Handelsgesetzbuch*) and supplementary provisions of the KfW Law. IFRS differs in certain significant respects from accounting principles generally accepted and financial reporting practices followed in the United States (“U.S. GAAP”), and, as a result, KfW’s consolidated financial statements included in Exhibit (e) to this annual report may differ substantially from financial statements prepared in accordance with U.S. GAAP.

Pursuant to the KfW Law, the annual financial statements of KfW are examined by a *Wirtschaftsprüfer* (Certified Public Accountant) who is appointed by the Federal Minister of Finance at the proposal of the Board of Supervisory Directors in consultation with the Federal Court of Auditors (*Bundesrechnungshof*). KfW’s external auditor for the fiscal year ended December 31, 2022 is Deloitte GmbH Wirtschaftsprüfungsgesellschaft (“Deloitte”).

The annual audit is conducted in accordance with German Generally Accepted Auditing Standards.

The auditor’s report of Deloitte for the fiscal year ended December 31, 2022, dated March 9, 2023, refers to a combined management report (*zusammengefasster Lagebericht*). The examination of, and the auditor’s report upon, this combined management report are required under German generally accepted accounting principles. This examination was not made in accordance with U.S. generally accepted auditing standards (“U.S. GAAS”) or U.S. attestation standards. Therefore, Deloitte does not provide any opinion on such examination, on the combined management report or on the financial statements included in Exhibit (e) to this annual report in accordance with U.S. GAAS or U.S. attestation standards. A reprint of the auditor’s report can be found starting on page 188 of Exhibit (e) to this annual report.

BUSINESS

Introduction

KfW conducts its business in the following business sectors:

- SME Bank & Private Clients (Mittelstandsbank & Private Kunden);
- Customized Finance & Public Clients (Individualfinanzierung & Öffentliche Kunden);
- KfW Capital;
- Export and Project Finance (KfW IPEX-Bank);
- KfW Entwicklungsbank (KfW Development Bank);
- DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH; and
- Financial Markets.

The following table sets forth the relative size of each of the business sectors in terms of commitments for each of the years indicated.

PROMOTIONAL BUSINESS VOLUME BY BUSINESS SECTOR

	Year ended December 31,		Year-to-Year % change
	2022	2021	
	(EUR in millions)		(in %)
SME Bank & Private Clients (Mittelstandsbank & Private Kunden)	64,839	72,980	-11
Customized Finance & Public Clients (Individualfinanzierung & Öffentliche Kunden)	69,970	9,465	>100
KfW Capital	1,259	502	>100
Export and project finance (KfW IPEX-Bank)	18,120	13,644	33
KfW Entwicklungsbank (KfW Development Bank)	10,931	8,611	27
DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH	1,644	1,534	7
Financial markets	415	527	32
Total promotional business volume (1) (2)	166,938	107,050	56

(1) Total promotional business volume for the full year ended December 31, 2022 has been adjusted for commitments of EUR 241 million, compared to EUR 212 million for the corresponding period in 2021, made by KfW IPEX-Bank relating to export and project finance and refinanced under certain promotional programs of SME Bank.

(2) Commitments represent the volume of funds committed for loans and other business transactions (with the exception of global funding facilities and program-based global loans to *Landesförderinstitute*) in the relevant period, including amounts to be disbursed in future periods, and do not include amounts disbursed in the relevant period pursuant to commitments made in prior periods. In the case of global funding facilities and program-based global loans to the *Landesförderinstitute*, commitments represent the actual volume of funds disbursed in the relevant period.

The following table shows the relative size of each of the seven business sectors in terms of percentage of commitments outstanding and economic capital required at year-end 2022. In general, a lower percentage in economic capital required compared to the percentage of commitments outstanding illustrates a below average risk associated therewith. The percentage of economic capital required of the business sector Financial Markets also includes the economic capital required for treasury activities.

RELATIVE SIZE OF EACH BUSINESS SECTOR

	As of December 31, 2022	
	Commitments outstanding % of total	Economic capital required (1)
SME Bank & Private Clients	50%	35%
Customized Finance & Public Clients	18%	3%
KfW Capital	0%	3%
Export and Project Finance	13%	8%
KfW Entwicklungsbank	7%	3%
DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH	2%	4%
Financial Markets	8%	2%
Total (in EUR billions)	647.1	18.8

(1) The balance of economic capital required relates to group functions. The economic capital required has been calculated on a solvency level of 99.90%. For more information concerning economic capital required of KfW Group, see “Combined management report—Risk report—Risk management approach of KfW Group—Internal capital adequacy assessment process—Economic risk-bearing capacity” included in Exhibit (e) to this annual report.

Domestic Promotional Business

General

To support the economic and policy objectives of the Federal Government, KfW offers a broad range of financing programs in Germany and, to a limited extent, elsewhere in Europe, as well as grants funded from the federal budget for domestic promotional purposes. KfW’s predominant domestic finance activities are conducted by the business sectors SME Bank & Private Clients, Customized Finance & Public Clients, and by KfW Capital. Certain further promotional activities targeting the domestic market are reported under the Financial Markets business sector.

Under the KfW Law, KfW must generally involve banks or other financing institutions when granting financing. Therefore, KfW involves commercial banks in the handling of its loans by extending loans to commercial banks, which, in turn, on-lend the funds to the ultimate borrowers. To a limited extent, however, KfW is allowed to grant financing directly to ultimate borrowers (e.g., for the financing of municipalities). By lending to commercial banks, KfW, in principle, insulates itself from credit exposure to ultimate borrowers and gains the benefit of the commercial banks’ knowledge of their customers as well as their administrative and servicing expertise. KfW monitors its exposures to, and the credit standing of, each bank or other financing institution to which it lends. As of December 31, 2022, KfW had extended loans to approximately 150 commercial banks in its domestic business sectors. In 2022, 62% (2021: 61%) of KfW’s total interbank exposure (exposure at default) was attributable to KfW’s ten largest banking group counterparties. Most of this exposure relates to KfW’s on-lending business, while the portion deriving from other business transactions – including derivatives, securities, money market and global loan transactions – is much more limited.

KfW offers two different models for processing KfW loans to commercial banks. KfW’s traditional and most important model for handling its lending business is based on individual loan applications by each borrower within the framework of specified loan or mezzanine capital instruments. Under the other model, KfW extends global funding facilities and program-based global loans to *Landesförderinstitute*, as well as non-program-based global loans to selected financial institutions in Germany and Europe.

Individual Loans. KfW defines detailed formal eligibility requirements for each loan that it extends to a commercial bank, as well as for each loan the commercial bank on-lends to the ultimate borrower under each of its lending programs. Borrowers in general do not apply directly to KfW, but may only apply for a KfW loan through a commercial bank. This intermediate bank appraises the financial and business situation of the applicant, takes collateral for the loan and assumes liability for repayment to KfW. KfW loans on-lent by commercial banks are normally collateralized by liens on real property or other assets, or are guaranteed by the Federal Republic or by one of the *Länder*. The processing of individual loans within KfW’s lending programs is characterized by two formally separate loan approvals – first by the intermediate bank and then by KfW. KfW’s loan approval, however, in most cases depends solely on a review of the individual loan application in order to assess compliance with the requirements defined for each respective lending program.

In recent years, KfW has modernized its application and approval process for loans with the aim of attaining a more efficient, automated and accelerated process. For this purpose, KfW has developed a digital online platform for its standardized loan programs. The online platform provides immediate feedback as to KfW's approval of loans in the form of electronic confirmations for most applications, and electronic confirmations after manual processing by KfW for more complex products (for instance, environmental programs for SMEs, municipal enterprises, businesses, and non-profit organizations). Since the beginning of 2020, all of KfW's standardized domestic, commercial and non-direct municipal products are offered exclusively via the online platform. All intermediate banks have access to the online platform and use it for their application processes.

KfW applies either a fixed-rate pricing model or a risk-adjusted pricing model to the loans it grants. Under the fixed-rate pricing model, the commercial banks to which KfW lends are permitted to on-lend these funds at fixed spreads over the applicable interest rate payable to KfW. This fixed-rate pricing model is applied to housing investment and some lending programs for start-up financing. Moreover, it is also applied to education lending programs. Under the risk-adjusted pricing model, KfW establishes pricing categories based on a combination of the borrower's creditworthiness and the collateral securing the loan. Under each lending program, KfW sets maximum interest rates for each pricing category. The on-lending banks assess the risk profile of the ultimate borrower and the collateral securing the loan to determine the applicable pricing category for each loan and the applicable maximum interest rate for the pricing category. KfW's role in the pricing process is limited to verifying that banks derive the appropriate maximum interest rate from the ultimate borrower's creditworthiness and the collateral provided.

Under KfW's traditional SME lending programs, the on-lending banks are liable to KfW and bear the risk of customer default as described above. In recent years, KfW has constantly been reworking and renewing its SME financing programs to increase its support for SMEs. Under some of those lending programs, to which the risk-adjusted pricing model applies, KfW offers the option of a partial exemption from liability to on-lending banks. If the on-lending bank applies for an exemption from liability, KfW bears the risk not retained by the bank and the risk margin is shared pro rata between KfW and the bank. The risk-adjusted pricing model applies to most of SME Bank & Private Clients lending programs. In addition, mezzanine capital offered by SME Bank & Private Clients and its special programs for investments by micro- enterprises are designed so that KfW assumes direct exposure to the credit risk of the ultimate borrowers, which in turn is covered or compensated in different ways: by means of risk premiums included in the interest rate charged to the ultimate borrowers, or by means of guarantees from the Federal Government or the European Investment Fund.

Global Loans and Global Funding Facilities. Global loans and global funding facilities differ from KfW's individual loans primarily in terms of simplified processing, the lack of a requirement for formal loan approval by KfW with respect to each individual ultimate borrower and, in general, a higher degree of flexibility for the on-lending *Landesförderinstitute* and selected financial institutions. KfW expects the receiving institutions to on-lend funds within a reasonable period of time. In contrast to KfW's individual loans, global loans and global funding facilities offer greater loan-structure flexibility. As a result, these instruments, when compared with KfW's traditional lending programs, carry lower administrative costs for both KfW and the on-lending institutions. Accordingly, ultimate borrowers generally benefit from favorable interest rates.

KfW offers different kinds of global loans and global funding facilities: program-based global loans and global funding facilities to *Landesförderinstitute* and non-program-based global loans to selected financial institutions in Germany and Europe. Most *Landesförderinstitute* are independent public law institutions and benefit from explicit statutory guarantees by the respective Land. Each *Landesförderinstitut* is responsible for promotional matters within its federal state.

Landesförderinstitute use KfW's program-based global loans to finance specified investments relating to SMEs, housing projects and municipal infrastructure projects in their respective Land within the framework of cooperative loan programs of the respective *Landesförderinstitut* and KfW. The conditions of each cooperative loan program are required to comply with the conditions of the relevant KfW program. The funds to *Landesförderinstitute* are generally extended in the form of lump sums, which are then broken down and granted to ultimate borrowers as individual loans.

Moreover, KfW extends global funding facilities exclusively to *Landesförderinstitute* for their own promotional funding purposes, thus offering flexibility with respect to the use of funds extended in their promotional business without a direct link to any of KfW's lending programs.

KfW also extends non-program-based global loans to selected financial institutions in Germany and elsewhere in Europe, which these institutions on-lend as individual loans and leases to finance SMEs, housing projects and energy efficiency projects.

KfW measures to mitigate the economic impact in Germany of Russia's invasion of Ukraine

While KfW's direct exposures in Ukraine and Russia are limited and tightly managed, developments related to Russia's invasion of Ukraine have affected KfW's business and earnings position. For information on the impact of Russia's invasion of Ukraine on KfW's net assets, financial and earnings position, see "Economic Report" in Exhibit (e) to this annual report.

Special mandates by the Federal Government. Against the background of Russia's invasion of Ukraine, which led to further increases in energy prices and highlighted Germany's dependency on imports of energy from Russia, the Federal Government requested that KfW engage in a number of activities under special mandates in accordance with article 2 paragraph 4 of the KfW Law (*Zuweisungsgeschäft*) with full protection of KfW. These activities serve to stabilise and secure the energy supply in Germany, strengthen the resilience of Germany's economy and are thus in the public interest as required by the KfW Law. These activities are being, or will be, carried out at the Federal Republic's economic risk.

KfW's activities under special mandates by the Federal Government are of an unplanned nature and do not change KfW's consistent strategic focus on sustainability targets in its banking business. They must therefore be clearly distinguished from KfW's promotional activities as a digital transformation and promotional bank of the Federal Government and the *Länder*. As of March 31, 2023, these activities in particular comprised support measures for systemically important companies in the energy sector significantly impacted by the supply reductions and significantly higher gas and electricity prices resulting from Russia's invasion of Ukraine. Debt financing has been committed for gas replacement purchases, to cover short-term liquidity requirements within the scope of "marginizing" (i.e., the provision of collateral that is mandatory when trading in energy) and to finance the procurement of natural gas for the fulfilment of certain statutorily required levels of natural gas reserves in natural gas storage facilities throughout Germany and, as of December 31, 2022, has led to commitments of EUR 54.2 billion and disbursements to EUR 22.4 billion. KfW has also been mandated to engage in equity financing, see "Strategic Shareholdings — German LNG Terminal GmbH" below.

Furthermore, at the end of 2022, the Federal Government mandated KfW to act as paying agent in connection with compensatory payments to utility companies for loss of revenues owed to such companies by the Federal Government in connection with government support measures aimed at reducing the burden of high energy costs for end consumers of natural gas and district heating. KfW's role in making the compensatory payments is strictly limited to the payments' disbursement, with the Federal Government providing KfW with the funds necessary to make such payments in advance.

In the aggregate, activities under special mandates by the Federal Government due to Russia's invasion of Ukraine have led to commitments in an aggregate amount of EUR 58.3 billion in 2022 and, in particular, impacted KfW's commitments in the business sector Customized Finance & Public Clients, which increased from EUR 9.5 billion in 2021 to EUR 70.0 billion in 2022.

Against this background, in November 2022, the German Economic Stabilization Fund (*Wirtschaftsstabilisierungsfonds – WSF*) was authorized to provide loans to KfW to cover KfW's refinancing needs stemming from its support of companies in the energy sector under special mandates by the Federal Government with unallocated funds from the WSF's credit authorization of up to EUR 100 billion, which was granted to KfW in March 2020 in the context of the COVID-19 pandemic with a view to refinancing KfW's commitments under the KfW Special Program, see also "— KfW measures to mitigate the economic impact of the COVID-19 pandemic in Germany — KfW Special Program" below. In addition, the WSF was authorized to provide financing to KfW under a EUR 200 billion credit authorization, which it has been granted to cover funding requirements in connection with a EUR 200 billion protective shield announced by the Federal Government in September 2022, to the extent that KfW is mandated by the Federal Government in connection with the protective shield. Refinancing through the WSF in 2022 relating to the support of companies in the energy sector amounted to EUR 19.8 billion. The WSF is administered by the Federal Finance Agency (*Bundesfinanzagentur*) and its refinancing is ensured by the Federal Finance Agency as part of the Federal Government's established money and capital market approach to financing the Federal Budget and the Federal Government's special funds.

Depending on further developments with respect to Russia's invasion of Ukraine, the Federal Government may in principle request KfW to engage in further activities under special mandates at any time.

KfW Special Program UBR 2022. On May 9, 2022, KfW launched a new loan program known as the "KfW Special Program UBR 2022" (*KfW-Sonderprogramm UBR 2022*, with "UBR" standing for "Ukraine, Belarus and Russia") in an aggregate amount of up to EUR 7.0 billion to quickly safeguard the liquidity of certain companies demonstrably affected by the war in Ukraine. Mostly privately owned companies of all sizes and from many different sectors can receive access to low-interest loans in an amount of up to EUR 100 million with extensive liability exemption of their regular banks. A syndicate financing alternative with substantial risk assumption is also being offered. The Federal Republic has undertaken to bear all financial risks incurred by KfW in connection with the KfW Special Program UBR 2022.

KfW measures to mitigate the economic impact of the COVID-19 pandemic in Germany

KfW Special Program. In March 2020, KfW, in close coordination with the Federal Government, launched the "KfW Special Program" (*KfW-Sonderprogramm*, initially named *KfW-Sonderprogramm 2020*) with the primary goal of providing liquidity to enterprises in Germany affected by the COVID-19 pandemic, including companies of all sizes as well as self-employed and freelance professionals. The deadline for commitments under the program, for which the maximum amounts available to the various categories of borrowers were also increased several times in accordance with EU state aid rules, was extended several times and finally expired on June 30, 2022.

The KfW Special Program was implemented through different loan programs: (1) the KfW Entrepreneurial Loan (*KfW-Unternehmerkredit*) for enterprises established on the market for more than five years, (2) the ERP Loan for Start-ups (*ERP-Gründerkredit – universell*) for enterprises established on the market for less than 5 years, (3) the KfW Syndicated Loan (*Direktbeteiligung für Konsortialfinanzierung*) for larger-scale financings targeted at larger companies, and (4) the "KfW Instant Loan 2020" (*KfW-Schnellkredit 2020*). Options (1) and (2) involved commercial banks in the handling of the loans by means of the on-lending principle which applies to the majority of KfW's loan programs. However, the COVID-19 related facilities, which were designated by adding "Corona" to the loan programs' names, included a partial exemption from liability for on-lending banks of 80% to 90%. With option (3), KfW offered a syndicated loan approach, designed as an individually structured direct loan program for larger companies. Financing was provided directly to beneficiaries by KfW together with a consortium of private banks to meet investment and working capital needs of the beneficiaries. KfW's financing share in these syndicated loans was limited to 80%. Loans under option (4), the KfW Instant Loan 2020 program, included a general waiver of the usual risk assessment and a full exemption from liability for on-lending commercial banks or financing partners involved, which means that the entire credit risk of any loans granted under the KfW Instant Loan 2020 program remained with KfW. These modifications were aimed at facilitating and accelerating the granting of loans by the on-lending commercial banks and other financing partners.

Within the KfW Special Program, KfW also facilitated the financing of charitable and social organizations via global loans to Landesförderinstitute.

Pursuant to separate guarantee declarations, the Federal Republic has undertaken to bear all financial risks incurred by KfW in connection with the KfW Special Program. With respect to refinancing its funding requirements resulting from the KfW Special Program, KfW, since July 1, 2020, has had access to an additional source of financing of up to a total amount of EUR 100 billion through the WSF. Refinancing through the WSF in 2022 relating to the KfW Special Program totaled EUR 11.8 billion as of December 31, 2022 (December 31, 2021: EUR 3.0 billion).

Additional support measures targeted at particular customer groups. Over the course of 2020, KfW and the Federal Government established additional COVID-19 support measures in order to provide financing to particular customer groups.

With respect to start-ups, venture capital was mobilized via private fund managers, with the associated measures operationalized by KfW Capital. In addition, equity and equity-like capital for start-ups and small SMEs was provided via global loans to Landesförderinstitute. These measures were in place until June 30, 2022.

With respect to the KfW Student Loan Program, two temporary measures were implemented in close coordination with the Federal Government. First, the interest rates under this program were set to 0% for all

loans that were in the disbursement phase, including all new applications. The cost incurred in connection with this interest rate subsidy was covered by the Federal Ministry of Education and Research during the period from May 1, 2020 to September 30, 2022. Second, the group of applicants for the KfW Student Loan Program was temporarily extended to all foreign citizens who met the general eligibility criteria for the period from July 1, 2020 to March 31, 2021. Pursuant to a separate guarantee declaration, the Federal Republic undertook to bear the financial risks KfW incurs in connection with the temporary extension of the KfW Student Loan Program to foreign applicants (excluding a portfolio of 300 loans).

SME Bank & Private Clients

KfW's SME Bank & Private Clients business sector supports SMEs, large-scale enterprises, business founders, start-ups and self-employed professionals, and offers financing for various purposes to companies in different stages of development. Additionally, this business sector extends housing-related loans and grants as well as financing for education to private individuals. Financing is provided primarily by means of loan programs (2022: EUR 45.5 billion, 2021: EUR 61.8 billion), mezzanine programs (2022: EUR 0.1 billion, 2021: EUR 0.1 billion) and grant-based programs (2022: EUR 19.2 billion, 2021: EUR 11.1 billion).

In 2022, SME Bank & Private Clients committed financing to improve social living conditions and to support the German economy in an amount of EUR 64.8 billion (2021: EUR 73.0 billion). The following table shows commitments by fields of promotional activity for each of the years indicated.

SME BANK & PRIVATE CLIENTS COMMITMENTS

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in billions)		(in %)
SME Bank	33.1	29.6	12
Start-up financing and general investment	11.6	16.2	-28
Innovation	1.9	1.1	72
Environmental investment	19.5	12.3	59
Private Clients	31.8	43.4	-27
Housing investment programs	4.1	6.1	-33
Education programs	1.9	2.0	-5
Environmental investment	25.8	35.3	-27
Total commitments (1)	64.8	73.0	-11

(1) Commitments represent the volume of funds committed for loans and other business transactions in the relevant year, including amounts to be disbursed in future years, and do not include amounts disbursed in the relevant year pursuant to commitments made in prior years.

In 2022, commitments in Private Clients decreased significantly compared to 2021 due to more stringent application criteria with respect to the program Federal Funding for Efficient Buildings (BEG) and overall weaker demand for real estate financing in light of higher interest rates. The decrease in commitments in Private Clients was partially offset by higher commitments in SME Bank, driven by higher commitments of EUR 7.1 billion under the KfW Renewable Energy Program in 2022, compared to EUR 3.9 billion in 2021, and higher commitments of EUR 10.6 billion under the program Federal Funding for Efficient Buildings (BEG) in 2022, compared to EUR 5.5 billion in 2021. These higher commitments in SME Bank were offset by decreased commitments in the KfW Special Program, which expired on June 30, 2022.

SME Bank

According to a representative KfW survey in the German SME sector, known as KfW SME Panel, Germany had an estimated 3.8 million SMEs (defined for the purposes of the survey as companies with an annual group turnover of up to EUR 500 million) in 2021.

SME Bank primarily offers loan programs. Under some loan programs, SME Bank offers a partial exemption from liability to on-lending banks. If an on-lending bank applies for an exemption from liability, KfW bears the risk not retained by the bank and the risk margin is shared pro rata between KfW and the bank.

SME Bank also extends mezzanine capital in the form of unsecured subordinated loans, which contain equity-like elements combining characteristics of debt and equity capital. In these financings, on-lending banks

are not liable to SME Bank for the subordinated loans. The interest rate of these loans takes into account the prevailing rates in the capital markets as well as the borrower's credit standing and collateral securing the loans. The borrower's creditworthiness is first assessed by the on-lending bank. However, as KfW assumes the credit risk of the loan, it reserves the right to review and, if necessary, to revise the on-lending bank's assessment by applying KfW's own rating standards.

Start-up Financing and General Investment Programs

SME Bank provides start-up financing and financial support for general investments for a wide range of purposes, such as investments in property and buildings, in plants or in machinery and equipment. In 2022, commitments in this field amounted to EUR 11.6 billion compared to EUR 16.2 billion in 2021. This was primarily due to a significantly reduced demand for financings extended under the KfW Special Program, for which the application deadline expired as of June 30, 2022. In 2022, commitments under the KfW Entrepreneurial Loan Corona (*KfW-Unternehmerkredit Corona*) decreased to EUR 2.4 billion (2021: EUR 5.5 billion), commitments under the ERP Loan for Start-ups Corona (*ERP-Gründerkredit – Corona*) decreased to EUR 0.2 billion (2021: EUR 0.5 billion), and commitments under the KfW Instant Loan 2020 (*KfW-Schnellkredit 2020*) decreased to EUR 0.9 billion (2021: EUR 3.0 billion).

Commitments under the KfW Special Program UBR 2022, which was launched in May 2022 in response to Russia's invasion of Ukraine, amounted to EUR 148 million in 2022 and related to low-interest loans, while no commitments were made with respect to the syndicate financing alternative also being offered.

Innovation Programs

SME Bank provides financing for innovations by extending funds for research, development and digitalization activities, either by providing loans or mezzanine capital. Commitments in the field of innovation financing increased to EUR 1.9 billion in 2022 (2021: EUR 1.1 billion), with the ERP Promotion for Innovation and Digitalization program being the main driver for this increase.

Environmental Investment Programs

SME Bank finances environmental protection projects, in particular for measures aiming at increasing energy and resource efficiency, reducing greenhouse gas emissions, or intensifying the use of renewable energy sources. Commitments under SME Bank's environmental investment programs once again increased significantly by EUR 7.2 billion to EUR 19.5 billion in 2022 compared to EUR 12.3 billion in 2021. Commitments under KfW's Renewable Energy Program, in particular, increased significantly by EUR 3.2 billion to EUR 7.1 billion in 2022 compared to EUR 3.9 billion in 2021. The Federal Funding for Efficient Buildings (BEG) program, which was launched on July 1, 2021, was also in high demand with committed volumes in 2022 amounting to EUR 3.9 billion for loans (2021: EUR 2.8 billion) and EUR 6.7 billion for grants (2021: EUR 2.7 billion). Commitments under the Federal Funding for Energy and Resource Efficiency program, which aims to contribute to the reduction of CO₂ emissions in the industrial sector, decreased to EUR 266 million in 2022 (2021: EUR 380 million). The SME Climate Protection Facility (*KfW-Klimaschutzoffensive für den Mittelstand*) contributed to the overall growth of commitments under SME Bank's environmental investment programs in 2022 with commitments in 2022 increasing to EUR 732 million compared to EUR 296 million in 2021.

In November 2021, the Federal Ministry for Digital and Transport and KfW launched a new grant program to promote the procurement and construction of new charging points available to charge electric vehicles used on a commercial basis and to charge electric vehicles of employees. Commitments under this program amounted to EUR 195 million in 2022 (2021: EUR 31 million).

Private Clients

Housing Investment Programs

Housing investment programs in Private Clients provide funds for the promotion of home ownership and for the improvement of the security of, and the accessibility to or within, existing homes. Some of these programs are subsidized through interest rate reductions paid for by federal funds. Commitments in 2022 decreased to EUR 4.1 billion from EUR 6.1 billion in 2021, of which EUR 3.1 billion (2021: EUR 4.0 billion) were granted for home ownership promotion programs. Commitments under the *Baukindergeld* program, which

terminated on December 31, 2022 and aimed to promote home ownership for families with children and for single parents, amounted to EUR 0.8 billion in 2022 (2021: EUR 1.8 billion).

Education Programs

Private Clients supports students and employees in higher education and advanced occupational training with direct loans. Some of these programs are covered by a credit guarantee of the Federal Government and Länder. In 2022, KfW committed EUR 1.9 billion, a slight decrease compared to EUR 2.0 billion in 2021. Commitments in the KfW Student Loan Program amounted to EUR 0.5 billion in 2022 (2021: EUR 0.8 billion). The interest rate subsidy provided by the Federal Ministry of Education and Research that set the interest rates under this program at 0% in response to the COVID-19 pandemic terminated on September 30, 2022.

Environmental Investment Programs

The sector of energy-efficient investments registered a significant decrease in 2022 compared to 2021 mainly due to the discontinuation of the KfW program for Energy-Efficient Construction and Refurbishment as of June 30, 2021, and difficulties in the administration of the successor benchmark program Federal Funding for Efficient Buildings (BEG) for Private Clients, which was launched in July 2021 and supports investments in the construction of energy-efficient new buildings and the energy-efficient refurbishment of existing ones.

While commitments under the Federal Funding for Efficient Buildings (BEG) program in 2022 amounted to EUR 14.3 billion for loans (2021: EUR 10 billion) and EUR 11.4 billion for grants (2021: EUR 5.2 billion), commitments under its predecessor program Energy-Efficient Construction and Refurbishment had amounted to EUR 19.3 billion in the first six months of 2021. Due to very high demand at the beginning of 2022, the available federal funds under the Federal Funding for Efficient Buildings (BEG) program were already exhausted towards the end of January 2022, leading to the program family becoming subject to an application and commitment freeze. Following an increase in funding by the Federal Government, commitment activity for the refurbishment of existing properties under the program was resumed from the end of February 2022 onwards. New construction funding under the program restarted on April 20, 2022, based on a three-stage concept developed by the Federal Ministry for Economic Affairs and Climate Action. Due to high demand, the federal funds budgeted for stage one were exhausted within a few hours. Stage two, encompassing new construction funding for buildings with a sustainability certificate started on April 21, 2022. Stage three launched in March 2023 and consists of a new comprehensive program entitled “Climate-friendly construction” (*Klimafreundliches Bauen*), which places greater emphasis on greenhouse gas emissions in the lifecycle of buildings.

Customized Finance & Public Clients

KfW’s Customized Finance & Public Clients (*Individualfinanzierung & Öffentliche Kunden*) business sector provides individual financing solutions for municipal and social infrastructure projects, offers corporate loans and project financing and grants global funding instruments to the *Landesförderinstitute* and other financial institutions.

The following table shows Customized Finance & Public Clients’ commitments by field of promotional activity for each of the years indicated:

CUSTOMIZED FINANCE & PUBLIC CLIENTS COMMITMENTS

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in millions)		(in %)
Municipal infrastructure programs	11,192	4,605	>100
Corporate loans and project finance	54,647	323	>100
Global funding facilities to <i>Landesförderinstitute</i> (1)	2,824	2,250	25
Program for the refinancing of export loans	307	766	-60
Global loans to selected financial institutions	1,000	1,520	-34
Total commitments (2)	69,970	9,465	>100

(1) Including global loans to *Landesförderinstitute* to support start ups and small enterprises as part of the COVID-19 support measures.

- (2) Commitments represent the volume of funds committed for loans and other business transactions (with the exception of global funding facilities and program-based global loans to *Landesförderinstitute*) in the relevant period, including amounts to be disbursed in future periods, and do not include amounts disbursed in the relevant period pursuant to commitments made in prior periods. In the case of global funding facilities and program-based global loans to the *Landesförderinstitute*, commitments represent the actual volume of funds disbursed in the relevant period.

Commitments in the business sector Customized Finance & Public Clients increased to EUR 70.0 billion in 2022 from EUR 9.5 billion in 2021. This increase was primarily driven by commitments in an aggregate amount of EUR 58.3 billion in 2022 made in connection with special mandates by the Federal Government to secure Germany's energy supply against the background of Russia's invasion of Ukraine. These commitments included commitments for compensatory payments in an amount of EUR 4.1 billion disbursed by KfW as paying agent in the context of government support measures to mitigate high energy costs.

Excluding commitments made in connection with support measures related to the COVID-19 pandemic and to companies in the energy sector under special mandates by the Federal Government, commitments under other programs of the business sector increased by EUR 2.4 billion in 2022, mainly driven by strong credit demand for municipal infrastructure programs and an increased demand for global funding facilities to *Landesförderinstitute*.

Municipal Infrastructure Programs

Customized Finance & Public Clients provides financing for investments in municipal and social infrastructure, either as direct loans to municipalities (i.e., local and municipal authorities and municipal special-purpose associations) or through KfW's ordinary on-lending scheme involving commercial banks. The latter is used for infrastructure investments by private companies that are majority-owned by municipal authorities and social investments made by non-profit organizations. Some of the municipal infrastructure programs are subsidized by federal funds. In total, commitments for municipal infrastructure programs increased significantly by EUR 6.6 billion to EUR 11.2 billion in 2022 from EUR 4.6 billion in 2021. This increase was mainly due to KfW's role as paying agent in the context of government support measures to mitigate high energy costs and to higher demand for existing programs. For more information see, "— Domestic Business — KfW measures to mitigate the economic impact in Germany of Russia's invasion of Ukraine — Special mandates by the Federal Government."

Global Loans and Global Funding Facilities

The following table shows Customized Finance & Public Clients' commitments designated to global loans and global funding facilities for each of the years indicated:

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in millions)		(in %)
Global funding facilities to <i>Landesförderinstitute</i> (1)	2,823	2,250	25
Program-based global loans to <i>Landesförderinstitute</i>	607	674	-10
Non program-based global loans to selected financial institutions in Germany and Europe	1,000	1,520	-34
Total commitments (2)	4,430	4,444	0

(1) Includes global loans to *Landesförderinstitute* to support start ups and small enterprises as part of the COVID-19 support measures.

- (2) Commitments represent the volume of funds committed for loans and other business transactions (with the exception of global funding facilities and program-based global loans to *Landesförderinstitute*) in the relevant period, including amounts to be disbursed in future periods, and do not include amounts disbursed in the relevant period pursuant to commitments made in prior periods. In the case of global funding facilities and program-based global loans to the *Landesförderinstitute*, commitments represent the actual volume of funds disbursed in the relevant period.

Customized Finance & Public Clients also grants global loans to selected financial institutions in Germany in order to refinance leasing contracts to SMEs, as well as to selected financial institutions in Europe in order to cooperate in the field of SME financing in Europe. The financial institutions in turn break down the global loans and extend individual loans and leases to SMEs. In 2022, global loans to selected financial institutions in Germany and Europe decreased to EUR 1.0 billion (2021: EUR 1.5 billion). This amount is fully attributable to the refinancing of leasing contracts.

The increase in Global Funding Facilities to *Landesförderinstitute* was due to higher refinancing demands by *Landesförderinstitute* and the expectation of less liquidity in the capital markets in the near future.

Additional drivers included the ECB's changed monetary policy and the run-down of the Eurosystem's targeted longer term refinancing operations (TLTROs).

Program for the Refinancing of Export Loans

Customized Finance & Public Clients offers commercial banks long-term refinancing of export loans covered by an official export credit guarantee of the Federal Government referred to as "Hermes Cover." These guarantees are managed by Euler Hermes Aktiengesellschaft ("HERMES") on behalf and for the account of the Federal Government. For more information on HERMES, see "Business—Export and Project Finance (KfW IPEX-Bank)—Business." In 2022, KfW made commitments of EUR 0.3 billion (2021: EUR 0.8 billion) under this program. The decrease of commitments in 2022 was mainly due to the lack of larger projects.

Corporate Loans and Project Finance

Customized Finance & Public Clients provides corporate loans, project financing and some equity financing. Excluding commitments resulting from its support of companies in the energy sector under special mandates by the Federal Government, which amounted to EUR 54.2 billion in 2022, KfW's commitments in corporate loans and project financing in 2022 were characterized by a normalized credit demand.

KfW Capital

KfW Capital, KfW's venture capital subsidiary, was incorporated as a legally independent entity on August 31, 2018. KfW Capital's general partner, KfW Capital Verwaltungs GmbH, is wholly-owned by KfW Capital and was incorporated on August 9, 2018. KfW acts as the limited partner and ultimately is the sole owner of KfW Capital. In the course of 2021, KfW Capital obtained a license as a Class 2 investment firm, i.e., a medium-sized investment firm (*Mittleres Wertpapierinstitut*) pursuant to German Securities Institution Act (*Wertpapierinstitutsgesetz*, WpIG), the German law based on the EU Investment Firm Directive 2019/2034 (IFD) and Investment Firm Regulation 2019/2033 (IFR). As medium-sized investment firm, KfW Capital is subject to this specific regulatory regime.

The business objective of KfW Capital is to invest in German and European venture capital and venture debt funds with the aim of improving access to capital for innovative technology-oriented growth companies in Germany through professionally managed funds with a minimum fund size of EUR 50 million. KfW Capital only invests in funds and does not invest directly in companies. For the coming years, the targeted average investment volume is around EUR 400 million per year. In 2023, KfW Capital is planning to invest an additional EUR 100 million on a one-off basis. KfW Capital intends to invest up to a maximum of EUR 75 million into a fund's capital and to acquire a maximum of 19.99% of a fund's capital and voting rights. Since 2021, KfW Capital has also been mandated on behalf of the Federal Government to promote future technologies through the "Future Fund" (*Zukunftsfonds*). Under the Future Fund, KfW Capital invests its own funds at its own risk ("Future Fund KfW Capital") as well as government funds on a fiduciary basis ("Future Fund Federal Republic").

Commitments related to KfW Capital amounted to EUR 1,259 million in 2022, compared to EUR 502 million in 2021. This increase was mainly driven by significantly higher commitments made under the Future Fund programs ERP/Zukunftsfonds Growth Facility and German Future Fund – EIF Growth Facility. Besides the Future Fund investments, commitments of KfW Capital in 2022 mainly reflected commitments of EUR 187 million via the ERP Venture Capital Fund investment program and a EUR 42 million commitment into the High-Tech Start-up Fund. In 2022, no further commitments were made under the Corona Matching Facility and the Corona Liquidity Facility. Investments under Future Fund programs are guaranteed by the Federal Republic and funding for these programs is refinanced by KfW.

The following table shows the commitments of KfW Capital for each of the years indicated:

KFW CAPITAL COMMITMENTS*

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in millions)		(in %)
High-Tech Start-up Fund	42	1	>100
ERP Venture Capital Fund Investments	187	187	0

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in millions)		(in %)
Future Fund KfW Capital	389	111	>100
<i>of which ERP/Zukunftsfonds Growth Facility</i>	245	111	>100
Future Fund Federal Republic	642	183	>100
<i>of which GFF EIF Growth Facility</i>	474	183	>100
Corona Matching Facility / Corona Liquidity Facility	0	20	n.a.
Total commitments (1)	1,259	502	>100

* Amounts in the table may not add up due to rounding differences.

(1) Commitments represent the volume of funds committed for loans and other business transactions in the relevant year, including amounts to be disbursed in future years, and do not include amounts disbursed in the relevant year pursuant to commitments made in prior years.

Export and Project Finance (KfW IPEX-Bank)

Corporate Background

KfW IPEX-Bank conducts export and project finance activities which the European Commission deemed to fall outside the scope of KfW's promotional activities directly and on its own behalf, while it conducts the promotional export and project finance activities in its own name on behalf of KfW on a trust basis. KfW provides funding for KfW IPEX-Bank at market rates based on the ratings assigned to KfW IPEX-Bank by international rating agencies. As of January 1, 2008, and in accordance with the understanding reached between the European Commission and the Federal Republic, KfW IPEX-Bank commenced operations as a legally independent entity wholly-owned by KfW. For more information, see "General—Relationship with the Federal Republic—Understanding with the European Commission."

Total assets of KfW IPEX-Bank (IFRS, before consolidation) amounted to EUR 27.6 billion as of December 31, 2022 (December 31, 2021: EUR 28.9 billion). Total outstanding loans and guarantees (including promotional activities) for KfW's business sector Export and Project Finance amounted to EUR 54.9 billion as of December 31, 2022 (December 31, 2021: EUR 57.1 billion). KfW IPEX-Bank is headquartered in Frankfurt am Main, Germany, and maintains a branch office in London, United Kingdom, a subsidiary in Singapore and representative offices in eight locations outside Germany. As of December 31, 2022, KfW IPEX-Bank employed 899 persons, excluding managing directors but including temporary personnel (December 31, 2021: 897).

In 2022, KfW IPEX-Bank Asia Ltd, a wholly-owned subsidiary of KfW IPEX-Bank, commenced its business activities in Singapore with a share capital of SGD 16.5 million under a merchant bank licence issued by the Monetary Authority of Singapore (MAS). IPEX Asia Ltd. is fully consolidated under the existing profit transfer agreement between KfW IPEX-Bank and KfW Beteiligungsholding GmbH.

In accordance with the understanding with the European Commission, KfW IPEX-Bank has obtained a banking license and is subject to the KWG and the corporate tax regime. KfW IPEX-Bank is approved as an IRBA (internal ratings-based approach) bank under the Basel II rules by the relevant German supervisory authorities – BaFin and the Deutsche Bundesbank. With respect to the SSM, KfW IPEX-Bank currently does not qualify as a significant credit institution and is therefore not directly supervised by the ECB, but rather continues to be supervised by BaFin in cooperation with Deutsche Bundesbank. Depending on KfW IPEX-Bank's business growth, KfW IPEX-Bank may eventually qualify as a significant credit institution, which would lead to direct supervision by the ECB. For additional information on KfW IPEX-Bank and the SSM, see "KfW—General—Supervision and Regulation—Regulation—Supervisory Structure and Enforcement Powers." For more information on the SSM, see "Federal Republic of Germany—Monetary and Financial System—Financial System—European Financial System—European System of Financial Supervision and European Banking Union."

KfW IPEX-Bank (controlled company; including its fully consolidated subsidiary IPEX Asia Ltd.) signed a profit transfer agreement with KfW Beteiligungsholding GmbH (controlling company) in order to form a corporate income tax (CIT) fiscal unity. Under this profit transfer agreement, KfW IPEX-Bank is required to

transfer its entire annual profit under applicable German commercial law to KfW Beteiligungsholding GmbH effective from the end of the fiscal year ended December 31, 2016.

Business

KfW IPEX-Bank focuses on supporting the internationalization and the competitiveness of internationally active German and European companies and offers project, export and trade financing. It provides medium and long-term investment and export financing in the form of amortizing loans, guarantees or leasing financing as well as project, object and acquisition financing. KfW IPEX-Bank also offers derivative instruments to allow its clients to hedge interest and currency risk and instruments for short-term trade financing, such as participations in letters of credit.

With the consent of the Federal Government, KfW delegated the mandate of the management of the Shipping CIRR Program and the ERP (European Recovery Program) Export Financing Program to KfW IPEX-Bank. Both programs are executed by KfW IPEX-Bank, applying strict “Chinese Walls.” The programs offer fixed interest rate loans to buyers based on the CIRR (Commercial Interest Reference Rate), which is a minimum interest rate prescribed by the OECD for officially supported financings in order to ensure competitive neutrality. The Shipping CIRR Program is open to banks financing ships built in German shipyards and offers a refinancing option through KfW. The ERP Export Financing Program supports lending for German exports to emerging and developing countries combined with fixed refinancing through KfW. These loans are supported through the ERP. In the past, lending of CIRR based loans in the ERP Program was provided through KfW IPEX-Bank and via AKA Ausfuhrkredit-Gesellschaft mit beschränkter Haftung, both as lenders of record. Since January 2017, all banks eligible for buyer credit cover (Hermes cover) may directly apply to the ERP Export Financing Program.

KfW, on behalf of the Federal Ministry for Economic Affairs and Energy (now named Federal Ministry for Economic Affairs and Climate Action), has launched the Africa CIRR export financing program (“Africa CIRR”). The program aims to strengthen economic cooperation with Africa. Specifically, Africa CIRR is designed to support loans to finance large-volume German exports and to promote the economy in African buyer countries. All credit institutions eligible to apply for buyer credit cover from the Federal Republic (so-called Hermes cover) are eligible for the Africa CIRR. The Federal Republic mandated KfW and KfW designated KfW IPEX-Bank to administer the program.

KfW IPEX-Bank’s principal customers are German and European companies (and their customers) with international operations and larger medium-sized companies in basic and manufacturing industries as well as in the retail, health, telecommunications, power/renewables, water, shipping, aviation, rail, transport and social infrastructure sectors.

Traditionally, the bulk of loans extended by KfW IPEX-Bank has been used for export and project financing to buyers of German or European exports. In recent years, KfW IPEX-Bank has increasingly extended loans to finance direct investments by German enterprises and other corporate purposes linked to the internationalization of German companies. In addition, KfW IPEX-Bank co-finances large-scale infrastructure projects and means of transport (e.g., airplanes and vessels) in the German and European transport sector. KfW IPEX-Bank also provides, as part of its core business, financing for environment and climate protection projects. Finally, KfW IPEX-Bank’s loans are also used to secure sources of raw materials for the German and European industry.

KfW IPEX-Bank’s loans are generally extended directly to the ultimate borrower, and KfW IPEX-Bank grants a significant portion of these loans at its own risk. KfW IPEX-Bank regularly cooperates with other financial institutions by way of consortia and syndications. In some cases, KfW IPEX-Bank may arrange for commercial banks to assume the risk on portions of loans made by KfW IPEX-Bank through risk-participations, for which KfW IPEX-Bank pays a fee to the bank assuming the risk. KfW IPEX-Bank is eligible to act as on-lending bank under certain of KfW’s promotional programs. In 2022, KfW IPEX-Bank refinanced loan commitments for export and project finance under KfW’s promotional programs in an amount of EUR 241 million (2021: EUR 212 million).

From time to time, KfW IPEX-Bank also enters into framework loan agreements with non-German banks, which enable such banks to extend loans to their customers for the purpose of importing equipment from German or other European exporters. Because the amounts of individual loans are usually small, the related transaction costs are relatively high. The framework agreements help to reduce these transaction costs.

Loans extended by KfW IPEX-Bank are usually secured by collateral and often benefit from a payment guarantee or other security arrangement. Loans extended to finance direct investments may benefit from an investment guarantee against political risk by the Federal Republic if the host country risk is assessed to be substantial.

A portion of export finance loans extended by KfW IPEX-Bank is guaranteed by the Federal Republic through HERMES, the official German export credit insurer. HERMES insurance covers up to 95% – in some instances even up to 100% – of KfW IPEX-Bank's export and project finance business risk, so that the risk of the portion covered is the equivalent of Federal Government risk. HERMES also provides coverage for related deliveries from other, mainly European, countries provided that they do not exceed a certain portion of the total delivery for which an export finance loan was extended. Furthermore, KfW IPEX-Bank's financing frequently benefits from a guarantee by a foreign export credit agency or a government instrumentality in the buyer's country.

For borrowers in other European and OECD countries where the country risk is not considered high, KfW IPEX-Bank has been increasingly extending loans on the basis of ordinary banking collateral (e.g., mortgages on aircraft or ships) without seeking the benefit of HERMES or similar coverage. In addition, even when HERMES coverage is sought, KfW IPEX-Bank often extends loans on which the insured portion is less than 95%. As of December 31, 2022, outstanding loans and guarantees (including promotional activities) outside Germany for KfW's business sector Export and Project Finance amounted to EUR 42.9 billion, of which EUR 8.7 billion, or 20%, were export finance loans which are fully or partly guaranteed by HERMES.

Commitments

The following table shows commitments in KfW's business sector Export and Project Finance for each of the years indicated:

EXPORT AND PROJECT FINANCE COMMITMENTS

	Year ended December 31,				Year-to-Year
	2022		2021		% change
	(EUR in millions)	(in % of total)	(EUR in millions)	(in % of total)	(in %)
Commercial business	12,369	68	11,457	84	8
Promotional business (conducted on behalf of KfW)	5,751	32	2,186	16	163
Total commitments (1)	18,120	100	13,644	100	33

(1) Commitments represent the volume of funds committed for loans and other business transactions in the relevant year, including amounts to be disbursed in future years, and do not include amounts disbursed in the relevant year pursuant to commitments made in prior years.

In 2022, total commitments of the Export and Project Finance business sector increased to EUR 18.1 billion from EUR 13.6 billion in 2021, including commitments under the CIRP scheme for bank refinancing, which is supported by the federal budget. With the consent of the Federal Government, KfW has delegated the mandate for the CIRP scheme for bank refinancing to KfW IPEX-Bank.

The increase in total commitments in 2022 compared to 2021 was driven by higher commitments in almost every sector except for Maritime industries.

Commitments by Sector. The following table shows KfW IPEX-Bank's commitments by sector for each of the years indicated:

	Year ended December 31,		Year-to-Year % change (in %)
	2022	2021	
	(EUR in millions)		
Industries and services	2,914	1,625	79
Power, renewables and water	2,821	2,664	6
Aviation, mobility, and transport	2,633	1,458	81
Financial institutions, trade and commodity finance	2,458	2,310	6
Basic industries	2,420	1,292	87

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in millions)		(in %)
Maritime industries	2,152	2,361	-9
Infrastructure	2,105	1,331	58
CIRR scheme for bank refinancing (Ship + Africa + ERP finance) (1)	616	603	2
Total commitments	18,120	13,644	33

(1) Starting in 2021 the CIRR scheme for bank refinancing includes commitments in an amount of EUR 100 million under the Africa CIRR scheme designed to support German exports to Africa and to promote the economy in African buyer countries.

Commitments in export and project finance increased in 2022 compared to 2021 despite the ongoing global challenges. For example, financing for projects supporting the expansion of digital infrastructure or energy transition were in high demand. Commitments (excluding those under the CIRR scheme for bank refinancing) amounted to EUR 17.5 billion in 2022 (2021: EUR 13.0 billion). The highest commitment volumes were achieved in the sectors Industries and services with EUR 2.9 billion (2021: EUR 1.6 billion), followed by Power, renewables and water with EUR 2.8 billion (2021: EUR 2.7 billion) and Aviation, mobility and transport with EUR 2.6 billion (2021: EUR 1.5 billion).

Commitments under the CIRR scheme for bank refinancing remained stable in 2022 at EUR 0.6 billion.

Commitments by Geographic Area. KfW IPEX-Bank's commitments were reported for the following three regions in 2022: Germany; Europe (excluding Germany, but including Russia and Turkey); and the rest of the world. In 2022, KfW IPEX-Bank's commitments for project and export financing (excluding the CIRR scheme for bank refinancing) within Germany increased to EUR 4.7 billion from EUR 3.9 billion in 2021. In 2022, commitments in Europe (excluding Germany, but including Russia and Turkey) increased to EUR 8.0 billion from EUR 5.6 billion in 2021. KfW IPEX-Bank's commitments in the rest of the world increased to EUR 4.9 billion in 2022 compared to commitments of EUR 3.5 billion in 2021. Commitments under the CIRR scheme for bank refinancing (2022: EUR 0.6 billion; 2021: EUR 0.6 billion) are trans-regional.

Commitments by Product. The following table shows KfW IPEX-Bank's commitments by product for each of the years indicated:

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in millions)		(in %)
Corporate transactions (for German or European export companies)	12,611	9,475	33
<i>Thereof</i>			
Loans (term loans and bullet)	7,114	4,934	44
Trade finance	1,674	1,760	-5
Revolving credit facilities for cash drawings	2,136	1,651	29
Guarantees	1,636	969	69
Lease finance	50	162	-69
Project finance (1)	4,534	2,103	116
Asset finance (1)	157	952	-84
Acquisition finance (1)	203	511	-60
CIRR scheme for bank refinancing (ship + ERP + Africa)	616	603	2
Total commitments	18,120	13,644	33

(1) The product categories project finance, asset finance and acquisition finance may also include loans, guarantees, lease finance or revolving credit facilities that are not attributed to any sub-category under the corporate transactions product category.

Funding

The funds for KfW IPEX-Bank's commitments are mainly provided by KfW through borrowings in the capital markets. KfW provides funding to KfW IPEX-Bank's international project and export finance business at market rates based on the ratings assigned to KfW IPEX-Bank by international rating agencies. For those areas of export finance which the European Commission has deemed to fall within the scope of the promotional

activities of KfW, funds from the ERP Special Fund may also be used to subsidize interest rates. In 2022, EUR 33 million of loan disbursements were supported by the ERP Special Fund (2021: EUR 125 million).

The terms of export and project finance loans funded in the capital markets are based on the cost of funds to KfW, plus a margin intended to cover the administrative cost of the loan, the credit risk and a return on capital. Because the Federal Republic is a member of the OECD, loans financed with funds from the ERP Special Fund or under the CIRP scheme for the shipping industry are required to comply with OECD regulations, which provide for minimum interest rates and maximum credit periods. Margins on these loans are generally intended to cover all the risks of such loans as well as administrative costs and a return on capital. In addition, KfW IPEX-Bank charges customary banking fees for reserving and providing financing and for processing. Loans denominated in currencies other than euros are hedged through matched funding or other mechanisms.

KfW Entwicklungsbank (KfW Development Bank)

Under the brand name KfW Entwicklungsbank, KfW acts as the Federal Republic's international development bank, extending loans and disbursing grants mainly to foreign public sector borrowers and recipients. In 2022, approximately 49% of these loans and grants were refinanced from federal budget funds provided to KfW. All of KfW's international development activities are made according to instructions from the Federal Government or in the case of mandates, i.e., grants funded by governmental or supranational entities and distributed using KfW's expertise and channels ("Mandates"), from the respective donor. Mandates and all funds from the Federal Government involved in loan commitments and grants do not, by their nature, appear on KfW's consolidated statement of financial position.

KfW extends financial cooperation (*Finanzielle Zusammenarbeit*, "FZ") loans in three ways:

- Traditional Financial Cooperation Loans (*FZ-Standardkredite*), extended for the account of the Federal Republic;
- Financial Cooperation Development Loans (*FZ-Entwicklungskredite*), in which KfW offers its own funds as an additional source of financing. For these loans, federal budget funds at low interest rates or grant funds are combined with funds from KfW that are refinanced in the capital markets. As of December 31, 2022, approximately 97% of outstanding commitments refinanced with KfW funds were guaranteed either by a special guarantee facility of the Federal Republic or by export credit agencies. Interest rates and related terms of Financial Cooperation Development Loans are significantly more favorable to the borrower than market terms and, therefore, meet the requirements for recognition as official development assistance ("ODA"); and
- Financial Cooperation Promotional Loans (*FZ-Förderkredite*), funded solely through funds raised by KfW in the capital markets. These loans may meet the requirements for recognition as ODA as they offer more favorable terms to the borrower than market terms. As of December 31, 2022, approximately 88% of outstanding Financial Cooperation Promotional Loans were guaranteed by a special guarantee facility of the Federal Republic.

Generally, interested foreign governments submit applications for financial cooperation to the Federal Government, which then asks KfW to appraise the proposed projects. In the case of Financial Cooperation Promotional Loans, project sponsors may submit their proposals directly to KfW. KfW maintains a staff of economists, engineers and other specialists to assist in the appraisal and development of projects. KfW receives fees from the Federal Republic for loans and grants extended for the account of the Federal Government and Financial Cooperation Development Loans, calculated as a percentage of outstanding loans and grants, as far as they are financed out of the federal budget. Based on KfW's appraisal and its recommendation, the Federal Republic decides whether it will fund a particular project. Upon a favorable decision and upon determination of the terms and conditions of financing, KfW enters into a loan or grant agreement with the recipient country or, if applicable, the individual agency responsible for the project, in which case the obligations under that agreement would then usually be fully guaranteed by the respective recipient country.

Financial cooperation loans and grants are disbursed according to the progress of the relevant project, and KfW monitors the utilization of funds to ensure compliance with the provisions of the loan or grant agreement.

The following table shows KfW Entwicklungsbank's commitments for each of the years indicated:

KFW ENTWICKLUNGSBANK COMMITMENTS

	Year ended December 31,		Year-to-Year % change (in %)
	2022	2021	
	(EUR in millions)		
Loan commitments	6,109	4,777	15
<i>of which federal funds</i>	825	218	-11
<i>of which KfW's funds refinanced in the capital markets</i>	5,285	4,559	19
Grant commitments	4,534	3,408	57
Mandates	288	426	-32
Total commitments	10,931	8,611	27

Total commitments of KfW Entwicklungsbank increased by 27% to EUR 10.9 billion in 2022 from EUR 8.6 billion in 2021. The relative share of loan commitments that were refinanced in the capital markets decreased to 86% in 2022, from 95% in 2021.

In 2022, Asia accounted for 28% of KfW Entwicklungsbank's commitments (2021: 24%); Sub-Saharan Africa accounted for 24% (2021: 25%); Middle East/North Africa accounted for 16% (2021: 13%); Europe/Caucasus accounted for 14% (2021: 11%); Latin America accounted for 14% (2021: 18%); and trans-regional commitments accounted for 4% (2021: 10%).

The following table shows KfW Entwicklungsbank's commitments by sector for each of the years indicated and as a percentage of its total commitments:

	Year ended December 31,				Year-to-Year
	2022		2021		% change
	(EUR in millions)	(in % of total)	(EUR in millions)	(in % of total)	(in %)
Economic infrastructure	3,531	32	1,642	19	+115
Social infrastructure	3,839	35	4,265	50	-10
Financial sector	1,182	11	981	11	+21
Production sector	840	8	933	11	-10
Others (1)	1,540	14	790	9	+95
Total commitments	10,931	100	8,611	100	27

(1) Consists mainly of commitments made for multi-sector projects and emergency assistance in crisis situations.

DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH

DEG, a German limited liability company, is a legally independent entity founded in 1962. DEG is based in Cologne, Germany. In 2001, KfW acquired DEG from the Federal Republic. Since then, KfW has been DEG's sole shareholder and DEG has been fully consolidated in KfW's consolidated financial statements. As of December 31, 2022, DEG maintained 12 representative offices in developing countries or emerging economies. In 2022, DEG employed an average of 704 persons (2021: 718). At year-end 2022, DEG's total assets (IFRS, before consolidation) amounted to EUR 7.8 billion (2021: EUR 7.3 billion).

DEG's activities focus on corporates, project finance, financial institutions and funds investing in Africa, Asia, Latin America, and Central and Eastern Europe. DEG promotes private enterprise structures, thus contributing to sustainable economic growth, lasting improvement in the living conditions of the local population and the global Sustainable Development Goals. To this end, DEG provides long-term financing for private enterprises investing in developing countries. In addition, DEG offers customized consultancy services, for example, in the areas of environmental management, corporate governance, resource efficiency or training and skills.

DEG conducts its activities in accordance with the principles of subsidiarity, thus in cooperation with commercial banks rather than in competition with them. It does not provide subsidized financing, but instead offers financing solely on commercial terms and conditions (apart from smaller state support programs within the framework of the support for German companies in Africa and measures within the framework of COVID

Response). DEG also seeks to mobilize other partners in order to raise additional capital for its clients' investments.

Serving public policy objectives of the Federal Government, DEG has been granted a favorable tax status under which only part of DEG's activities are subject to CIT. DEG does not distribute profits but instead re-channels them into new investments.

DEG's obligations do not benefit from the Guarantee of the Federal Republic or from *Anstaltslast*, and while DEG's indebtedness is reflected in KfW's consolidated statement of financial position, its debt represents obligations of DEG and not of KfW. KfW and DEG have a refinancing agreement in place, pursuant to which KfW acts as sole issuer in the capital markets and provides DEG with mid- and long-term capital market funds according to DEG's capital needs. In addition, internal agreements have been reached concerning the respective fields of business activities, the mutual use of offices abroad, joint public relations activities and joint usage of several information technology services.

The following table shows DEG's commitments for each of the years indicated:

DEG COMMITMENTS

	Year ended December 31,		Year-to-Year
	2022	2021	% change
	(EUR in millions)		(in %)
Loans	1,172	1,035	13
Equity participations	387	467	-17
Mezzanine financing	84	32	163
Total commitments	1,644	1,534	7

Financial Markets

KfW's Financial Markets business sector comprises the group's treasury activities, including its funding activities and its financial asset management. Furthermore, this business sector manages KfW's asset-backed securities ("ABS") as well as KfW's green bond portfolio, which are all part of KfW's promotional activities, as well as other capital markets-related activities currently consisting of privatization initiatives relating to Deutsche Telekom AG ("Deutsche Telekom") and Deutsche Post AG ("Deutsche Post").

Funding

KfW's principal sources of funds are the international financial markets and public funds, with the majority of lending in its business sectors being financed from funds raised by KfW in the international financial markets. KfW Group's consolidated balance sheet total assets at year-end 2022 amounted to EUR 554.6 billion. EUR 500.3 billion, or 90.2% of this amount, was financed through borrowings (i.e., from financial market funds or public funds). In addition, at year-end 2022, KfW had EUR 19.4 billion in liabilities held in trust (for which the Federal Government mostly provides the funding and assumes all risks), which do not appear on KfW's consolidated statement of financial position. In line with the focus on mid-term and long-term loans within its loan portfolio resulting from its promotional business, as of December 31, 2022, 79% of KfW's consolidated total borrowings outstanding had remaining maturities of one year or more.

Financial-Market Funds. KfW raises short-term and long-term funds in the international financial markets through the issuance of bonds and notes (including commercial paper) and by incurring loans against debt certificates (*Schuldscheindarlehen* or "promissory note loans"). Long-term funding with initial maturities of more than one year ("capital-market funding") represents the most important source of funding. Short-term borrowings with initial maturities of less than one year in the form of commercial paper ("money-market funding") are primarily used for purposes of KfW's liquidity management. As of December 31, 2022, the percentage of capital-market funding outstanding out of total financial-market funds outstanding was 91%.

All amounts stated in connection with KfW's capital-market and money-market funding transactions or funding volume are, unless stated otherwise, based on net proceeds to KfW, which are calculated as principal amount less discount and underwriting commissions, if any.

Capital-Market Funding. KfW's capital-market funding policy pursues a dual objective: to achieve the most favorable terms possible for funds raised in the capital markets; and to minimize, to the extent practicable, the effects of changes in interest rates and foreign exchange rates mainly through interest rate and currency risk hedging instruments and, to a more limited extent, by matching funding liabilities with loan assets. In order to achieve favorable terms for funds raised, KfW maintains an active presence in all major capital markets and utilizes a broad range of funding instruments in various currencies, covering a wide range of maturities.

KfW's capital-market funding instruments comprise four categories of instruments: bonds issued under KfW's benchmark programs (in euro or U.S. dollar, under KfW's European medium-term note program or its SEC-registered debt shelf); bonds publicly placed outside the benchmark programs; bonds sold in "private placements," a term KfW uses in the commercial sense to refer to sales to a specific investor or a limited number of investors; and "green bonds", which comprise bonds from any of the first three categories, the proceeds of which are linked to investments with a clear environmental benefit financed by KfW, currently in the sectors of renewable energies, energy efficiency and clean transportation. In 2022, benchmark bonds accounted for a funding volume of EUR 56 billion, or 63%, of KfW's total capital-market funding, while bonds placed publicly outside the benchmark programs accounted for EUR 13.0 billion, or 15%. The volume of bonds sold in private placements and of green bonds amounted to EUR 9.8 billion, or 11%, and EUR 10.6 billion, or 12%, respectively. Total capital-market funding in 2022 amounted to EUR 89.4 billion (2021: EUR 82.6 billion).

With respect to refinancing its funding requirements resulting from the KfW Special Program and from its support of companies in the energy sector under special mandates by the Federal Government, KfW has had access to an additional source of financing through the WSF. Refinancing through the WSF in 2022 totaled EUR 31.6 billion (2021: EUR 3.0 billion), of which EUR 11.8 billion related to the KfW Special Program and EUR 19.8 billion related to the support of companies in the energy sector.

KfW expects its volume of long-term funding to be raised in the capital markets in 2023 to be in a range of EUR 80 billion to EUR 85 billion, of which at least EUR 10 billion are expected to be green bonds.

In 2022, KfW conducted seven new bond issuances as well as 13 re-openings (20 transactions in total in 2022) in an aggregate principal amount of EUR 42 billion, in each case under its euro benchmark program. Also in 2022, KfW conducted four new bond issuances in an aggregate principal amount of USD 16 billion under its U.S. dollar benchmark program.

KFW'S BENCHMARK BOND ISSUANCES IN 2022

	Aggregate principal amount in billions	Maturity at issuance (in years)	Interest rate in % per annum
KfW U.S. \$-Benchmark I/2022	USD 5.0	3	1.250
KfW U.S. \$-Benchmark II/2022	USD 5.0	5	3.000
KfW U.S. \$-Benchmark III/2022	USD 3.0	3	3.125
KfW U.S. \$-Benchmark IV/2022	USD 3.0	2	3.375
KfW Euro-Benchmark I/2022	EUR 5.0	10	0.125
KfW Euro-Benchmark II/2022	EUR 5.0	5	0.000
KfW Euro-Benchmark III/2022	EUR 5.0	3	0.125
KfW Euro-Benchmark IV/2022	EUR 2.0	15	1.125
KfW Euro-Benchmark V/2022	EUR 5.0	5	1.250
KfW Euro-Benchmark VI/2022	EUR 4.0	7	2.875
KfW Euro-Benchmark VII/2022	EUR 3.0	3	2.500
KfW Euro-Benchmark V/2021 (re-opening)	EUR 1.0	3	0.000
KfW Euro-Benchmark V/2021 (re-opening)	EUR 1.0	3	0.000
KfW Euro-Benchmark IV/2021 (re-opening)	EUR 1.0	7	0.000
KfW Euro-Benchmark II/2021 (re-opening)	EUR 1.0	5	0.000
KfW Euro-Benchmark I/2021 (re-opening)	EUR 1.0	10	0.000
KfW Euro-Benchmark I/2020 (re-opening)	EUR 1.0	5	0.000
KfW Euro-Benchmark II/2022 (re-opening)	EUR 1.0	5	0.000
KfW Euro-Benchmark IV/2022 (re-opening)	EUR 1.0	15	1.125

	Aggregate principal amount in billions	Maturity at issuance (in years)	Interest rate in % per annum
KfW Euro-Benchmark I/2022 (re-opening)	EUR 1.0	10	0.125
KfW Euro-Benchmark II/2020 (re-opening)	EUR 1.0	7	0.000
KfW Euro-Benchmark III/2022 (re-opening)	EUR 1.0	3	0.125
KfW Euro-Benchmark IV/2022 (re-opening)	EUR 1.0	15	1.125
KfW Euro-Benchmark V/2019 (re-opening)	EUR 1.0	7	0.000

In 2022, KfW's total new capital-market funding was raised in 13 different currencies and 206 separate capital markets transactions. KfW's core currencies are the euro and the U.S. dollar, which together accounted for 84% of KfW's total new capital-market funding in 2022 (2021: 81%). The percentage of new funds raised in euros increased from 55% in 2021 to 65% in 2022, making it the most significant funding currency, whereas the percentage of new funds raised in U.S. dollars decreased from 26% to 19% over the same period. The percentage of new funds raised in pounds sterling increased from 8% in 2021 to 9% in 2022, which made it KfW's third most significant funding currency in 2022.

KFW'S TOTAL NEW CAPITAL-MARKET FUNDING VOLUME 2022 BY CURRENCIES *

	EUR in billions	In % of total
Euro (EUR)	58.2	65
U.S. dollar (USD)	17.0	19
Pound sterling (GBP)	8.1	9
Australian dollar (AUD)	2.1	2
Norwegian krone (NOK)	0.5	1
Other currencies (1)	3.4	4
Total	89.4	100

* Amounts in the table may not add up due to rounding differences.

(1) CAD, CNY, DKK, HKD, HUF, PLN, SEK and ZAR.

In connection with its green bond issuances, KfW has established a Green Bond Framework published on its website that reflects international best practices and which is aligned with the 2021 edition of the "Green Bond Principles" supported by the International Capital Market Association ("ICMA"). Through its green bond issuances, KfW aims to broaden its investor base by addressing socially responsible investors and to enhance capital markets' infrastructure for financing environmental projects that have the reduction of greenhouse gas emissions as their common objective. Net proceeds from the sale of its green bonds and requests for disbursements under the eligible environmental projects are tracked by KfW in an appropriate manner. KfW provides investors with information regarding the use of proceeds in terms of disbursements on a regular basis on its website. Unless otherwise indicated, information available on, or accessible through, KfW's website is not incorporated herein by reference. In 2022, KfW conducted 13 new green bond issuances in 10 currencies as well as 7 re-openings. In total, green bonds accounted for a funding volume of EUR 10.6 billion, or 12%, of KfW's total capital-market funding.

The most important sources of capital-market funding for KfW are bond and note issuances followed by promissory note loans. At year-end 2022, the amount of outstanding bonds and notes issued by KfW totaled EUR 385.8 billion, representing a EUR 11.8 billion decrease from EUR 397.6 billion outstanding at year-end 2021.

Of outstanding borrowings, promissory note loans continue to be KfW's second most important capital-market funding instrument, with a book value of EUR 53.5 billion at year-end 2022. Of this amount, EUR 52.5 billion was recognized as financial liabilities at amortized cost (of which EUR 1.5 billion as liabilities to banks and EUR 51.0 billion as liabilities to customers) and EUR 1.0 billion was recognized as financial liabilities at fair value (of which EUR 0.2 billion as liabilities to banks and EUR 0.8 billion as liabilities to customers). The increase in the book value of promissory note loans from EUR 40.8 billion in 2021 to EUR 53.5 billion in 2022 is largely due to increased refinancing via the WSF. Promissory note loans are a special instrument of the German capital markets, under which the lending entity (generally a bank, insurance company or public pension fund) receives a certificate evidencing its loan to the borrower and the terms of such loan. Maturities on promissory note loans range from one to 30 years, thereby providing a high degree of flexibility to

both the borrower and the lender. Transferable only by way of assignment, promissory note loans have only limited liquidity in the interbank secondary market.

The following table sets forth summary information concerning KfW's outstanding bonds and notes as well as promissory note loans with an initial maturity of more than one year and issued in the capital markets.

INFORMATION ON ISSUANCES OF FUNDED DEBT OF KfW GROUP
(AS OF DECEMBER 31, 2022)

Currency	Number of transactions	Interest type	Average interest rate in % per annum (1) (2)	Years of issue	Maturities	Average years to maturity (2)	Aggregate principal amount outstanding in applicable currency	Aggregate principal amount outstanding in EUR (3)
AUD	20	FIXED	3.28	2013-2022	2023-2032	2.25	14,725,000,000.00	9,383,164,468.23
CAD	6	FIXED	2.84	2005-2022	2023-2037	3.24	2,957,200,000.00	2,047,922,437.67
CHF	2	FIXED	2.55	2005-2007	2025-2037	4.85	1,305,000,000.00	1,325,276,734.03
CNY	16	FIXED	2.76	2019-2022	2023-2026	1.29	10,638,000,000.00	1,445,734,011.04
DEM	1	FIXED	6.88	1993	2023	0.25	105,985,000.00	54,189,270.03
DKK	1	FIXED	0.00	2022	2024	1.88	1,000,000,000.00	134,471,861.76
EUR	383	FIXED	0.54	1999-2022	2023-2052	4.74	311,223,709,908.32	311,223,709,908.32
EUR	19	FLOATING	2.82	2003-2019	2023-2052	2.60	1,895,809,873.66	1,895,809,873.66
GBP	20	FIXED	2.10	2000-2022	2023-2037	3.42	24,506,803,000.00	27,631,045,291.06
GBP	1	FLOATING	3.39	2021	2024	1.45	500,000,000.00	563,742,347.20
HKD	3	FIXED	0.24	2021	2023-2024	0.63	800,000,000.00	96,196,625.90
HUF	3	FIXED	9.77	2021-2022	2023-2024	1.53	90,750,000,000.00	226,382,617.81
JPY	9	FIXED	2.31	2004-2021	2023-2038	6.40	145,943,000,000.00	1,037,558,652.07
JPY	194	FLOATING	2.80	2002-2021	2024-2049	11.59	135,316,000,000.00	962,007,678.09
MXN	2	FIXED	5.95	2017-2021	2023-2025	1.75	2,000,000,000.00	95,895,665.52
NOK	15	FIXED	1.94	2004-2022	2023-2036	1.89	40,200,000,000.00	3,823,546,196.43
NZD	3	FIXED	2.80	2018-2021	2023-2028	1.36	840,000,000.00	500,059,530.90
PLN	6	FIXED	2.95	2006-2022	2023-2025	1.47	2,051,118,507.65	438,198,279.71
SEK	8	FIXED	1.33	2011-2022	2023-2031	4.34	13,400,000,000.00	1,204,840,943.01
TRY	2	FIXED	12.52	2020	2023	0.18	202,000,000.00	10,117,756.66
USD	51	FIXED	1.68	2002-2022	2023-2046	2.83	89,467,612,362.63	83,881,129,160.54
USD	1	FLOATING	3.65	2021	2024	1.12	1,500,000,000.00	1,406,337,896.12
ZAR	20	FIXED	6.73	2018-2022	2023-2031	3.67	7,591,000,000.00	419,424,706.88
Total	786					4.19		449,806,761,912.63

(1) Interest rate of floating rate note means the applicable interest rate as of December 31, 2022. For floating rate notes with interest rates that are fixed in arrears, the latest fixed interest rate was used. Zero coupon bonds are included in the calculation with their average effective interest rates.

(2) Averages have been calculated on a capital-weighted basis taking into account the aggregate principal amount outstanding in euro.

(3) Conversion into euro at the spot rate using the ECB reference rates on December 31, 2022.

Money-Market Funding. KfW issues commercial paper under two commercial paper programs: the EUR 90 billion multicurrency commercial paper program and the USD 30 billion commercial paper program. The program volume of the USD commercial paper program was increased from USD 20 billion to USD 30 billion as of March 17, 2022, and the program volume of the multicurrency commercial paper program was increased from EUR 70 billion to EUR 90 billion effective as of August 30, 2022. As of December 31, 2022, KfW Group's commercial paper outstanding totaled EUR 39.1 billion (December 31, 2021: EUR 50.0 billion).

Public Funds. As of December 31, 2022, the proportion of public funds in KfW Group's borrowings was 12%. The most important source of public funds for KfW is the budget of the Federal Republic. Total long-term and short-term borrowings from funds provided by the federal budget (excluding loans on a trust basis) amounted to EUR 61.0 billion as of December 31, 2022 (December 31, 2021: EUR 39.9 billion). KfW Group's long-term and short-term borrowings from the ERP Special Fund amounted to EUR 283 million as of December

31, 2022 (December 31, 2021: EUR 138 million). Public funds are made available to KfW Group for use in special categories of KfW's domestic activities and certain export and project finance transactions with developing countries.

Public funds are particularly important in the area of financial cooperation, where KfW Entwicklungsbank extends loans and disburses grants to foreign public sector borrowers and recipients in developing countries and emerging economies. Federal budget funds constituted approximately 49% of the sources of funding for KfW Entwicklungsbank's commitments in 2022. Funds from the Federal Government involved in loan commitments and grants of KfW Entwicklungsbank do not, by their nature, appear on KfW's consolidated statement of financial position. For more information see "Business—KfW Entwicklungsbank (KfW Development Bank)."

Derivatives

KfW generally enters into derivatives transactions for hedging purposes in connection with its financing and funding activities. Accordingly, a substantial majority of its derivatives are interest- or currency-related derivatives. KfW Group does not enter into derivatives for trading purposes and does not facilitate the purchase of derivatives on behalf of any entities outside the group through brokerage or similar agency activities.

The following tables provide detailed information on the group's derivatives exposures:

KFW GROUP'S DERIVATIVES EXPOSURE *

	Notional value		Fair value		Fair value	
	As of December 31,		As of December 31, 2022		As of December 31, 2021	
	2022	2021	Positive	Negative	Positive	Negative
	(EUR in millions)		(EUR in millions)		(EUR in millions)	
Interest-related derivatives	621,417	584,335	4,478	9,268	6,111	4,040
Currency-related derivatives (1)	148,515	165,569	6,846	5,227	7,727	2,311
Credit derivatives as protection buyer	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Total derivatives (2) (3)	769,932	749,904	11,324	14,496	13,838	6,351
Embedded derivatives accounted for separately	—	—	163	5	21	12
Total balance sheet items "derivatives designated for hedge accounting" and "financial assets/liabilities at FV - other derivatives"	769,932	749,904	11,487	14,501	13,859	6,363

* Amounts in the table may not add up due to rounding differences.

(1) Includes cross-currency swaps.

(2) Includes derivative financial instruments which are offered by KfW's wholly-owned subsidiary KfW IPEX-Bank to its customers as hedging instruments in connection with, and related to, financing in the context of its export and project financing activities. In order to hedge the risk arising from these derivative transactions, KfW IPEX-Bank enters into hedging transactions with KfW. In the context of centralizing and aggregating market-facing hedging activities within the group at the parent level, KfW, in turn, hedges itself with corresponding offsetting transactions in the market to the extent necessary. These risk-mitigating hedging transactions entered into by KfW are also disclosed.

(3) Includes derivative contracts in closed risk positions entered into pursuant to special mandates by the Federal Government in accordance with article 2 paragraph 4 of the KfW Law.

	As of December 31,	
	2022	2021
	(EUR in millions)	
Total positive fair value before netting	11,324	13,838
Total positive fair value after netting (1)	10,129	8,733
Collateral received	10,096	7,882

	As of December 31,	
	2022	2021
	(EUR in millions)	
<i>of which cash collateral</i>	10,096	7,882
Total positive fair value after netting and collaterals	33	851

(1) Presents the effects of netting agreements that do not fulfill the offsetting criteria under IFRS. Due to the strict criteria for offsetting financial instruments under IAS 32, KfW Group's consolidated statement of financial position does not reflect any netting effects with respect to its derivatives.

KfW Group's derivatives activities are reflected in its consolidated statement of financial position in the line items "Financial assets at fair value", "Financial liabilities at fair value" and "derivatives designated for hedge accounting." For additional information on KfW Group's derivatives exposure, see notes 8, 9, 40, 41, 50, 51, 58, 59 and 60 to the financial statements included in Exhibit (e) to this annual report. For more information on interest and currency risks related to derivatives as well as counterparty default risks, see "Combined management report—Risk report—Types of risk—Credit risk" and "—Market price risk," respectively, included in Exhibit (e) to this annual report.

Asset Management

As of December 31, 2022, KfW Group held securities and investments in an amount of EUR 38.2 billion (December 31, 2021: EUR 39.9 billion). See "Combined management report—Economic report—Development of net assets" included in Exhibit (e) to this annual report for more information concerning securities and investments. EUR 32.0 billion, or 80%, of all securities and investments were held in the form of fixed-income securities for liquidity purposes in KfW's liquidity portfolio. The remaining securities and investments were securities held as a surrogate for loans or as equity investments in the context of KfW Group's promotional business (e.g., KfW's ABS portfolio or DEG's direct investments). Equity participations held directly or indirectly by KfW made up only a very limited amount of KfW Group's securities and investments.

Liquidity Portfolio. KfW pursues a conservative liquidity management strategy. For this purpose, KfW holds financial assets in its liquidity portfolio in an amount of EUR 32.9 billion as of December 31, 2022 (December 31, 2021: EUR 32.0 billion). The bulk of securities held in this portfolio is denominated in euro. KfW purchases medium-term securities issued by banks, primarily covered bonds (*Pfandbriefe*), bonds of public sector issuers and supranational institutions or agencies as well as ABS. Since the beginning of 2020, the portfolio includes ABCP investments. The bulk of euro-denominated bonds included in KfW's liquidity portfolio is eligible as collateral with the ECB and enables KfW to enter into repurchase agreements in refinancing operations within the European System of Central Banks via the Deutsche Bundesbank. For financial reporting purposes, securities denominated in U.S. dollar or GBP were converted into euro at the currency exchange rate as of December 31, 2022. In addition to these securities, as of December 31, 2022, KfW held money-market assets (overnight and term loans as well as reverse repurchase transactions) for liquidity management purposes in an amount of EUR 5.2 billion (December 31, 2021: EUR 5.5 billion).

As a signatory to the United Nations-supported "Principles for Responsible Investment" (PRI), KfW is committed to managing its liquidity portfolio in a sustainable manner. For KfW, this means integrating environmental, social and governance ("ESG") criteria in its investment approach. In 2022, the integration of ESG criteria was based on a best-in-class approach that stipulated that for its liquidity portfolio, based on sustainability ratings from an external provider, KfW would only invest in bonds of issuers whose sustainability rating was among the best 50% of the respective sector. Sovereign bonds are eligible for such investments, provided that the relevant issuing country has reached "prime" status with regard to its sustainability rating. In addition, KfW uses exclusion criteria for its liquidity portfolio that are based on the International Finance Corporation exclusion list and the exclusion list of KfW Group. KfW also engages in regular dialogues with issuers on sustainability matters.

ABS Portfolio. As of December 31, 2022, the promotional ABS portfolio volume amounted to EUR 129 million (December 31, 2021: EUR 364 million). KfW's capital markets-based promotional activities for SMEs ended as of December 31, 2019. The remaining outstanding portfolio volume will decrease gradually with amortizations.

Green Bond Portfolio. Under its green bond portfolio, KfW seeks to support climate and environmental protection by investing in green bonds of public sector issuers, supranational institutions and

agencies, and banks as well as in green covered bonds and ABS. All of KfW's green bond investments are aligned with the ICMA "Green Bond Principles." In 2022, KfW provided EUR 415 million (2021: EUR 527 million) as part of its promotional activities for financing climate and environmental protection measures by investing in green bonds. As of December 31, 2022, the volume of the portfolio amounted to EUR 2.3 billion. KfW's green bond portfolio was launched in 2015 under a mandate of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (now named Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection) and last amended in 2021. KfW plans to maintain the portfolio volume in a range of EUR 2.0 to EUR 2.5 billion until the end of 2023 when the mandate of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection will expire. KfW is currently evaluating strategic options regarding KfW's green bond portfolio.

Privatization Initiatives

The Federal Government mandated KfW to take measures with respect to the privatization of Deutsche Telekom and Deutsche Post. Pursuant to a special mandate by the Federal Government and in accordance with article 2 paragraph 4 of the KfW Law (*Zuweisungsgeschäft*), KfW has acquired and sold shares of both Deutsche Telekom and Deutsche Post in various transactions since 1997. In furtherance of the privatization initiatives of the Federal Government, KfW sold those shares through German and international public offerings, private placements, block trades, exchangeable bonds and other transactions. Pursuant to an arms-length agreement with the Federal Government, KfW is protected against the market risk of these transactions. The agreement provides that KfW will receive a percentage of any market value increase in the shares acquired and sold, plus a fee for its services.

At year-end 2022, KfW's total ownership interest in Deutsche Telekom remained unchanged compared to year-end 2021 with approximately 829.2 million ordinary shares. This represented a stake of approximately 16.6% in Deutsche Telekom (December 31, 2021: 16.6%). To KfW's knowledge, the stake of the Federal Republic amounted to approximately 13.8% as of December 31, 2022.

At year-end 2022, KfW's total ownership interest in Deutsche Post remained unchanged compared to year-end 2021 with approximately 253.9 million ordinary shares. This represented a stake of approximately 20.5% in Deutsche Post (December 31, 2021: 20.5%). To KfW's knowledge, the Federal Republic does not directly hold any shares in Deutsche Post.

Given the agreement with the Federal Government described above, KfW's holdings in shares of Deutsche Post and Deutsche Telekom are presented on KfW's consolidated statement of financial position as Financial Assets at Fair Value, which are classified as "Loans and advances to customers – FVM."

The Federal Government may sell further stakes in Deutsche Telekom to KfW in the future. KfW expects its holdings in Deutsche Telekom and Deutsche Post shares to be reduced in the medium term.

Loan Facility to Greece Mandated by the Federal Government

KfW supports the Federal Republic in conducting EU-wide financial support measures for Greece. In 2010, the Federal Government mandated KfW in accordance with article 2 paragraph 4 of the KfW Law (*Zuweisungsgeschäft*) to participate in a loan facility to Greece on behalf of the Federal Republic. All risks resulting from this loan facility are covered by a guarantee of the Federal Republic. As of December 31, 2022, the total amount outstanding of this loan to Greece amounted to EUR 12.9 billion (December 31, 2021: EUR 14.4 billion).

Strategic Shareholdings

KfW's most important strategic shareholdings are DEG (100%) and KfW Capital (100%), which are both directly held by KfW, and KfW IPEX-Bank GmbH (100%), which is held indirectly via KfW Beteiligungsholding GmbH. The stakes in Finanzierungs- und Beratungsgesellschaft mbH (100%), tbG Technologie-Beteiligungs-Gesellschaft mbH (100%), Deutsche Energieagentur GmbH (26%), Berliner Energieagentur GmbH (25%), CureVac N.V. (16%) and HENSOLDT AG (25.1%) are held directly by KfW. KfW's shareholding in Airbus SE (9.17%) is held indirectly via various entities. KfW's shareholding in Eurogrid GmbH (20%) is held indirectly via a subsidiary of KfW. In addition, KfW directly holds stakes in True Sale International GmbH (7.7%) and the European Investment Fund (2.3%).

KfW's investments in Airbus SE, Eurogrid GmbH, CureVac N.V. and HENSOLDT AG, as well as its investments in Deutsche Telekom and Deutsche Post (see "Business—Financial Markets—Privatization Initiatives"), were made pursuant to a special mandate by the Federal Government in accordance with article 2 paragraph 4 of the KfW Law, which authorizes the Federal Government to direct KfW to take measures in connection with matters in which the Federal Republic has an interest (*Zuweisungsgeschäft*). These investments were made at the Federal Republic's economic risk and the opportunities and risks of these investments lie with the Federal Republic.

Airbus SE

In 2007, KfW, together with 14 other investors, agreed to jointly acquire from DaimlerChrysler group (now Mercedes-Benz Group) a stake of, at that time, 7.5% in European Aeronautic Defence and Space Company N.V. ("EADS"), the economic interest of which was held through the special purpose vehicle Dedalus GmbH & Co. KGaA ("Dedalus"). In connection with a further reduction by the Daimler group (now Mercedes-Benz Group) of its stake in EADS in December 2012, the Federal Government, which regards the ownership structure of EADS as a matter of strategic national interest, agreed on a revised government shareholding agreement with EADS, France and Spain, which allows the Federal Government to directly or indirectly own an equity stake of up to 12% in EADS. In this context, the Federal Government mandated KfW to directly or indirectly acquire and hold an equity stake of up to 12% in EADS on behalf of the Federal Republic.

At the beginning of April 2013, France, Germany and Spain entered into a supplemental shareholders' agreement, which provided for the dissolution of the Dedalus consortium and for KfW and the remaining investors to hold their respective equity stakes in EADS directly and indirectly through Gesellschaft zur Beteiligungsverwaltung GZBV mbH & Co. KG ("GZBV"). At the end of 2013, GZBV increased its equity stake in EADS by buying approximately 1.87 million shares. In 2015, EADS transformed its legal form into a European company (*Societas Europaea*) and changed its legal name to Airbus Group SE. In April 2017, following approval by the annual general meeting, the legal name was changed into Airbus SE. As of December 31, 2022, KfW held, through GZBV, an equity stake of approximately 9.17% in Airbus SE. Together with the other investors' interests in GZBV, GZBV held a total equity stake of 10.87% in Airbus SE.

Eurogrid International CVBA/SCRL and Eurogrid GmbH

In July 2018, the Federal Government mandated KfW pursuant to and in accordance with article 2 paragraph 4 of the KfW Law (*Zuweisungsgeschäft*), to acquire a 20% shareholding in Eurogrid International CVBA/SCRL ("Eurogrid International"). The transaction closed in August 2018. Under the mandate, all economic risks resulting from KfW's investment are covered by a guarantee of the Federal Republic. At the time of the acquisition, Eurogrid International indirectly held all shares in the German transmission systems operator 50Hertz Transmission GmbH via its wholly-owned subsidiary Eurogrid GmbH.

In June 2019, KfW swapped its 20% equity stake in Eurogrid International for a 20% equity stake in Eurogrid GmbH in accordance with its mandate by the Federal Government. This share swap was executed to simplify the holding structure. KfW's stake in Eurogrid GmbH is now held via Selent Netzbetreiber GmbH, a wholly-owned subsidiary of KfW. The German transmission system operator 50Hertz Transmission GmbH is a wholly-owned subsidiary of Eurogrid GmbH, incorporated in Berlin, Germany.

In July 2022, the Federal Government mandated KfW, pursuant to and in accordance with the original mandate of July 2018 and article 2 paragraph 4 of the KfW Law (*Zuweisungsgeschäft*), to contribute an amount of EUR 50 million via KfW's wholly-owned subsidiary Selent Netzbetreiber GmbH into the capital reserves of Eurogrid GmbH. The amount was provided to Eurogrid GmbH on August 5, 2022. Under the mandate, KfW is fully covered by the Federal Republic against any economic risks resulting from its investment.

CureVac N.V.

In June 2020, the Federal Government mandated KfW pursuant to and in accordance with article 2 paragraph 4 of the KfW Law (*Zuweisungsgeschäft*) to make an investment of approximately EUR 300 million through the acquisition of a stake in biopharmaceutical company CureVac AG ("CureVac"). CureVac is a German stock corporation under German law with its registered seat in Tübingen, Germany, which focuses on the research and development of medicines based on messenger ribonucleic acids (mRNA). The investment occurred at the end of July 2020. In August 2020, CureVac B.V., a private company with limited liability under Dutch law, offered and sold in an underwritten initial public offering (the "CureVac IPO") new common shares,

which were listed on the Nasdaq Global Market. In connection with the consummation of the CureVac IPO, all shares of CureVac AG were contributed into CureVac B.V. in exchange for shares of CureVac B.V., and CureVac B.V. was converted to a public company under Dutch law and accordingly renamed CureVac N.V. As a consequence, KfW's investment is in shares of CureVac N.V. Under the mandate, KfW is fully covered by the Federal Republic against any economic risks resulting from its investment.

HENSOLDT AG

In March 2021, the Federal Government mandated KfW pursuant to and in accordance with article 2 paragraph 4 of the KfW Law (*Zuweisungsgeschäft*) to acquire 25.1% of the outstanding shares in HENSOLDT AG ("Hensoldt"). Hensoldt is a stock corporation under German law with its registered seat in Taufkirchen, Germany, which focuses on electronic sensor solutions and optronics. The acquisition was completed in May 2021. Under the mandate, KfW is fully covered by the Federal Republic against any economic risks resulting from its investment in Hensoldt.

German LNG Terminal GmbH

In August 2022, the Federal Government mandated KfW to acquire a 50% equity participation in German LNG Terminal GmbH ("GLNG") and to provide subsequent pro rata payments to the capital reserve of GLNG. To this end, KfW has entered into a share purchase agreement and a shareholders' agreement with Gasunie LNG Holding B.V. and GBV Zweiunddreissigste Gesellschaft für Beteiligungsverwaltung mbH, a wholly owned subsidiary of RWE AG, regarding the equity participation and subsequent pro rata payments to the capital reserve. GLNG is a project company that is developing a liquefied natural gas (LNG) import facility in Brunsbüttel, Germany. The closing of the transaction is subject to, inter alia, required approvals authorizations.

CAPITALIZATION

CAPITALIZATION OF KfW GROUP AS OF DECEMBER 31, 2022

	(EUR in millions)
Borrowings	
Short-term funds	43,810
Bonds and other fixed-income securities	385,810
Other borrowings (1)	70,678
Total borrowings	500,298
 Equity	
Paid-in subscribed capital (2)	3,300
Capital reserve	8,447
Reserve from the ERP Special Fund	1,191
Retained earnings	23,391
Fund for general banking risks	200
Revaluation reserve	50
Total equity	36,579
Total capitalization	536,877

(1) Includes long-term and short-term borrowings from the ERP Special Fund of EUR 283 million.

(2) KfW's equity capital, 80% of which is held by the Federal Republic and the remaining 20% by the Länder, amounted to EUR 3,750 million in 2022, of which EUR 3,300 million has been paid in pro rata by the Federal Republic and the Länder.

MANAGEMENT AND EMPLOYEES

The bodies of KfW are the Executive Board (*Vorstand*) and the Board of Supervisory Directors (*Verwaltungsrat*).

Executive Board

The Executive Board is responsible for the day-to-day conduct of KfW's business and the administration of its assets. Typically, members of the Executive Board are initially appointed for a maximum of three years by the Board of Supervisory Directors. After the first term each member may be repeatedly reappointed for, or his or her term of office may be repeatedly extended by, up to five years by the Board of Supervisory Directors. Each member of the Executive Board is responsible for certain aspects of KfW's activities but shares the responsibility for actions taken by the Executive Board.

The following biographical information on the current members of the Executive Board includes their ages as of March 31, 2023, the year in which they were appointed, their terms of office, their current positions and their areas of responsibility.

For information on the remuneration of the Executive Board, see note 70 to the financial statements included in Exhibit (e) to this annual report.

Stefan Wintels

Date of birth: November 17, 1966

Stefan Wintels joined KfW's Executive Board as Co-CEO in October 2021 and became the sole CEO in November 2021. He is in charge of the General Secretariat, Group Communications, Internal Auditing, Financial Markets, Group Development and Economics, Legal Affairs, Domestic Promotional Business, Sales Digital Development, New Business Credit Service as well as KfW Capital. Mr. Wintels was appointed until September 2025.

Prior to joining KfW, Mr. Wintels worked at Citigroup for 20 years from 2001 to 2021 in various leadership roles. Most recently, he was the Global Co-Head Financial Institutions Group and a member of the Global BCMA Executive Committee. Before that, he was Vice Chairman of Citigroup in Germany, Citi's Chief Country Officer for Germany as well as Chief Executive Officer of Citigroup Global Markets Europe AG until March 2020.

Stefan Wintels began his professional career in 1994 at Deutsche Bank AG and left in 2001 as Managing Director at Deutsche Bank's Corporate Development / Group Strategy Department.

He received a Master's degree in Business Administration from the Technische Universität Berlin and participated in the 2nd year of a two year MBA program at the University of Illinois, Urbana-Champaign.

Stefan Wintels also chairs the supervisory board of KfW Capital, Frankfurt am Main, Germany. In addition, he is a member of the supervisory boards of Deutsche Post AG, Bonn, Germany and of Deutsche Telekom AG, Bonn, Germany.

Katharina Herrmann

Date of birth: October 27, 1968

Katharina Herrmann joined KfW as General Manager in April 2022 and became a member of KfW's Executive Board in April 2023. She is in charge of KfW's Domestic Promotional Business and Sales Digital Development. Ms. Herrmann was appointed until April 2026.

Prior to joining KfW she was Head of Platforms and New Business at ING-DiBa AG, Frankfurt am Main, Germany, as well as Global Head of Platforms and Beyond Banking at ING Group, Amsterdam, Netherlands. During her time at ING from 1998 until 2021 Ms. Herrmann held various leadership positions. From 1996 until 1998 Ms. Herrmann worked as a Specialist in Marketing at COMMERZBANK AG, Frankfurt am Main, Germany. In 1995 she started her professional career at Nassauische Sparkasse, Wiesbaden, Germany, where she worked in junior and senior positions in marketing.

Katharina Herrmann studied business administration and graduated as Diplom-Betriebswirtin (FH) at the University of Applied Sciences Wiesbaden, Germany (comparable to Master of Business administration), incl. several months of study abroad (European Business Studies) at Nottingham Trent University, Great Britain.

Melanie Kehr

Date of birth: November 17, 1974

Melanie Kehr became a member of KfW's Executive Board in March 2019. She is in charge of Information Technology, Portfolio Credit Service and Transaction Management. Ms. Kehr joined KfW as General Manager in September 2018. Ms. Kehr was appointed until August 2027.

Ms. Kehr studied Business Administration at the University of Bielefeld, Germany, and also holds a Master's degree in Economics from Purdue University, Indiana, USA. In 1999, she started her professional career at the consulting firm Andersen Consulting Unternehmensberatung GmbH (renamed Accenture in 2001) where she became Managing Director for Industry Financial Services in 2012. In 2014, she was appointed

Group Chief Information Officer of Bayerische Landesbank, Munich, Germany, and served in this position until July 2018.

Ms. Kehr is also a member of the supervisory board of Deka Bank Deutsche Girozentrale, Frankfurt am Main, Germany.

Christiane Laibach

Date of birth: November 9, 1961

Christiane Laibach joined KfW's Executive Board in June 2021. She leads the international financing activities consisting of KfW Entwicklungsbank and the two affiliates KfW IPEX GmbH and KfW DEG mbH. Ms. Laibach was appointed until May 2025.

Prior to joining KfW's Executive Board she was member of DEG's Management Board for six years, the last year as CEO. From 2008 to 2015 she was part of KfW-IPEX Bank's Management Board, including Chief Risk and Financial Officer. She has been holding leadership positions at KfW Group for 25 years after having joined in 1990, including as global head of aviation for seven years.

Ms. Laibach holds a Master's degree in Economics from University of Mainz, Germany, and completed the Executive Management Program at Wharton Business School, Philadelphia, USA.

Ms. Laibach also chairs the supervisory board of KfW IPEX GmbH. Further, she is a member of the supervisory board of DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH, Cologne, Germany.

Bernd Loewen

Date of birth: October 23, 1965

Bernd Loewen joined KfW as a member of KfW's Executive Board in July 2009. He is in charge of Finance, Human Resources, Central Services as well as Organization and Consulting. Mr. Loewen acts as Chief Financial Officer of KfW after initially running both the risk and finance departments at KfW up to the separation of the CRO and CFO functions as of January 1, 2016. Mr. Loewen was appointed until June 2024.

After graduating with a Business Administration degree from the University of Muenster, Germany, he started his professional career at an auditing firm and completed the tax consultant exam. Subsequently, Mr. Loewen joined the Corporate Development department at COMMERZBANK Aktiengesellschaft, Frankfurt am Main, Germany, before moving on to Equity Derivatives Trading. From 2002 onwards, Bernd Loewen worked as Co-Managing Director at Commerz Capital Markets Corporation, a subsidiary of COMMERZBANK Aktiengesellschaft, in New York, USA. In 2005, he was appointed Member of the Management Board of mBank (formerly BRE Bank SA), a Polish subsidiary of COMMERZBANK Aktiengesellschaft and relocated from New York to Warsaw, Poland.

Mr. Loewen is also a member of the supervisory board of DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH, Cologne, Germany.

Dr Stefan Peiß

Date of birth: April 30, 1969

Dr Stefan Peiß became a member of KfW's Executive Board in January 2016. He is in charge of Credit Risk Management, Risk Controlling and Compliance, and he acts as Chief Risk Officer of KfW. Dr Peiß was appointed until December 2024.

Dr Peiß studied business administration at the Ludwig-Maximilians-Universität in Munich, Germany, where he also obtained a doctorate in political science (Dr. oec. publ.) from the university's Institute for Risk Management and Insurance. In 1995, he started his career in the Real Estate Department of Bayerische Landesbank, Germany. He then transferred to the Risk Management Department, where he held management positions as Head of Team (client portfolio and strategic controlling) and Head of Department (portfolio

controlling and controlling systematics, risk controlling trading activities). In 2007, Dr Peiß became Head of the Risk Operations Division, and in 2008, he was promoted to Head of Group Risk Control Division. Dr Peiß joined KfW in 2009 as Senior Vice President and Head of Risk Management and Controlling.

Dr Peiß is a member of the supervisory board of KfW IPEX-Bank, Frankfurt am Main, Germany and of KfW Capital, Frankfurt am Main, Germany.

Board of Supervisory Directors

The Board of Supervisory Directors generally has 37 members and consists of the Federal Minister of Finance; the Federal Minister for Economic Affairs and Climate Action; the Federal Minister for Foreign Affairs; the Federal Minister of Food and Agriculture; the Federal Minister of Transport and Digital Infrastructure; the Federal Minister for Economic Cooperation and Development; the Federal Minister for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection; seven members appointed by the Bundesrat; seven members appointed by the Bundestag; five representatives of commercial banks; two industry representatives; one representative each of the local municipalities, agricultural, skilled crafts, trade and housing sectors; and four representatives of the trade unions. The representatives of the commercial banks, industry, the local municipalities, agricultural, skilled crafts, trade and housing sectors, and the trade unions are appointed by the Federal Government after consultation with their constituencies.

The Federal Minister of Finance and the Federal Minister for Economic Affairs and Climate Action serve as Chairman and Deputy Chairman of the Board of Supervisory Directors on a year-by-year rotating basis, with the former chairing for the year 2023. The term of office of all Federal Ministers on KfW's Board of Supervisory Directors corresponds to their term of office as Federal Minister of such Federal Ministry, while the other members of the Board of Supervisory Directors are personally appointed for a term of three years.

The Board of Supervisory Directors supervises the overall conduct of KfW's business and the administration of its assets. It may give the Executive Board general directives. In particular, the Board of Supervisory Directors (via its Risk and Credit Committee) generally must approve, inter alia, loans to members of management bodies (*Organkredite*), short-term financing, loan commitments to a single borrower exceeding EUR 50 million for non-investment grade or unrated borrowers, certain unsecured loans and loan commitments exceeding EUR 100 million to investment grade borrowers. The Board of Supervisory Directors may reserve the right to approve other transactions or types of transactions. However, it is not authorized to represent KfW or to commit funds on KfW's behalf.

KfW's Board of Supervisory Directors' committee structure comprises a Presidial and Nomination Committee (*Präsidial- und Nominierungsausschuss*), a Remuneration Committee (*Vergütungskontrollausschuss*), a Risk and Credit Committee (*Risiko- und Kreditausschuss*) and an Audit Committee (*Prüfungsausschuss*). The Presidial and Nomination Committee is responsible for dealing with legal and administrative matters as well as fundamental business and corporate policy issues. It may make decisions on the Board of Supervisory Directors' behalf in urgent matters (*Eilentscheidung*). Additionally, it regularly assesses the Executive Board and the Board of Supervisory Directors, provides recommendations for suitable candidates to the Executive Board and may assist the responsible federal agencies in appointing members to the Board of Supervisory Directors. The Remuneration Committee is responsible for dealing with the systems of remuneration for the Executive Board and KfW employees and their consequences for KfW's risk, capital and liquidity management and advises the Presidial and Nomination Committee with respect to the remuneration paid to the members of the Executive Board. The Risk and Credit Committee advises the Board of Supervisory Directors regarding, in particular, the current and future overall risk tolerance and strategy of KfW. It is responsible for approving loans and equity investments at the operational level that exceed certain thresholds as set forth in KfW's Bylaws, as well as for authorizing the issuance of debt securities, borrowings in foreign currencies and swap transactions. The Audit Committee monitors in particular the accounting process and the effectiveness of the risk management system, especially the internal control system and the internal audit system. It monitors the performance of the audits of the annual financial statements and the timely correction of any errors identified by the auditor. Furthermore, the Audit Committee provides recommendations to the Board of Supervisory Directors regarding the approval of the annual unconsolidated financial statements and the adoption of the annual consolidated financial statements. The Presidial and Nomination Committee and the Remuneration Committee will, as a general rule, be chaired by the Chairperson of the Board of Supervisory Directors. The Risk and Credit Committee and the Audit Committee, as a general rule, will be chaired by a representative of the banking sector.

As of May 11, 2023, the members of the Board of Supervisory Directors were:

<u>Name</u>	<u>Position</u>
Annalena Baerbock	Federal Foreign Minister
Katharina Beck	Member of Parliament; appointed by the Bundestag
Dr André Berghegger	Member of Parliament; appointed by the Bundestag
Volker Bouffier	Former Minister President of the State of Hesse; appointed by the Bundesrat
Dr Andreas Dressel	Senator for Finance of the Free and Hanseatic City of Hamburg; appointed by the Bundesrat
Robert Feiger	Chair of the Federal Executive Committee of the IG Bauen-Agrar-Umwelt trade union (IG Bau); representative of the trade unions
Tanja Gönner	CEO and Director General of the Federation of German Industries (BDI); representative of the industry
Dr Robert Habeck	Federal Minister for Economic Affairs and Climate Action; Deputy Chair in 2023
Gerald Heere	Minister of Finance of the State of Lower Saxony; appointed by the Bundesrat
Prof Dr Hans-Günter Henneke	Managing Member of the Executive Committee of the Federation of German Districts (DLT), Representative of the municipalitie
Dr Bruno Hollnagel	Former Member of Parliament; appointed by the Bundestag
Harald Hübner	Ministerial Director at the Bavarian State Ministry of Finance and Regional Identity; appointed by the Bundesrat
Verena Hubertz	Member of Parliament; appointed by the Bundestag
Dr Dirk Jandura	President of the Federation of German Wholesale, Foreign Trade and Services (BGA); representative of the wholesale and foreign trade sector
Andrea Kocsis	Deputy Chair of ver.di - United Services Trade Union; representative of the trade unions
Stefan Körzell	Member of the Executive Board of the German Trade Union Confederation (DGB); representative of the trade unions
Ulrich Lange	Member of Parliament; appointed by the Bundestag
Steffi Lemke	Federal Minister for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
Christian Lindner	Federal Minister of Finance; Chair in 2023
Rainer Neske	Chair of the Board of Managing Directors at Landesbank Baden-Württemberg (LBBW), representative of credit institutions prominent in the field of industrial credit
Cem Özdemir	Federal Minister of Food and Agriculture
Dr Marcus Optendrenk	Minister of Finance of the State of North Rhine-Westphalia; appointed by the Bundesrat

Dr Bettina Orlopp	Deputy Chair of Commerzbank AG; representative of the mortgage banks
Dr Hans-Walter Peters	Former President of the Association of German Banks (BdB); representative of the commercial banks
Achim Post	Member of Parliament; appointed by the Bundestag
Daniel Quinten	Member of the Board of Managing Directors of the National Association of German Cooperative Banks (BVR); representative of the cooperative banks
Michael Richter	Minister of Finance of the State of Saxony-Anhalt; appointed by the Bundesrat
Joachim Rukwied	President of the German Farmers' Association (DBV); representative of the agricultural sector
Frank Schäffler	Member of Parliament; appointed by the Bundestag
Helmut Schleweis	President of the German Savings Banks Association (DSGV); representative of the savings banks
Svenja Schulze	Federal Minister for Economic Cooperation and Development
Holger Schwannecke	Secretary General of the German Confederation of Skilled Crafts (ZDH); representative of the skilled crafts sector
Dietmar Strehl	Senator for Finance of the Free Hanseatic City of Bremen; appointed by the Bundesrat
Dr Martin Wansleben	Chief Executive of the Association of German Chambers of Commerce and Industry (DIHK); representative of the industry
Dr Kai H Warnecke	President Haus & Grund Germany; representative of the housing sector
Dr Volker Wissing	Federal Minister for Digital and Transport

For information concerning the remuneration of the Board of Supervisory Directors, see note 70 to the financial statements included in Exhibit (e) to this annual report.

Employees

In 2022, KfW Group employed an average of 7,984 persons (excluding members of the Executive Board and trainees, but including temporary personnel and local personnel in KfW's representative offices) (2021: 7,734 persons). Approximately 30.7% of KfW's staff (excluding local personnel in KfW's representative offices) is covered by collective bargaining agreements. KfW provides employee benefits such as pensions to its employees.

Of KfW Group's staff, approximately 20.1% is engaged in KfW's domestic business activities, 28.1% in promotion of developing countries and emerging economies (KfW Entwicklungsbank and DEG), 11.3% in Export and Project Finance (KfW IPEX-Bank), and the remaining balance in KfW's accounting, disbursements, collateral, funding and lending support departments and in general administrative and staff functions.

KfW Group has defined employee relations as one of its key sustainability action areas and attaches great importance to treating its employees with respect and appreciation. Because KfW recognizes that its success is based on its skilled and motivated staff, employer attractiveness, including by achieving top positions in the main employer rankings, has been defined as one of the key targets within KfW Group's strategic objectives. KfW believes that a fair remuneration system, group-wide diversity and equal opportunities for the professional development of all employees, irrespective of gender, origin, ethnicity, religion, disability, age, sexual identity or social background, provide a solid basis for achieving this target. KfW emphasizes the importance of achieving target quotas for women in leadership positions and a good work-life balance. As a future-oriented organization, KfW offers a variety of part-time work and mobile work options as well as professional development and training opportunities and supports responsible health management.

For more information concerning KfW Group's employees, see note 69 to the financial statements included in Exhibit (e) to this annual report.

THE FEDERAL REPUBLIC OF GERMANY

The following information regarding the Federal Republic is derived from the public official documents cited below. Certain information is preliminary.

GENERAL

Area, Location and Population



The Federal Republic is situated in central Europe and comprises an area of approximately 358,000 square kilometers (about 138,000 square miles). According to a first estimate of the Federal Statistical Office, at least 84.3 million people were living in Germany at the end of 2022, which was the highest number ever recorded and an increase of 1.1 million when compared to the end of 2021. The strong increase was caused by record net immigration (defined as immigration minus emigration). According to the first estimate, between 1.42 million and 1.45 million more people came to Germany than had left the country, meaning that net immigration in 2022 was more than four times higher than in 2021 (329,163 people) and higher than at any time since the start of the time series in 1950. Net immigration in 2022 was primarily driven by strong immigration of war refugees from Ukraine. In contrast, the decline in the number of births and the increased number of deaths had a dampening effect on population growth. In 2022, the number of births fell by around 7% compared with 2021 and is expected to be between 735,000 and 745,000 (2021: 795,492), whereas the number of deaths increased by around 4% to approximately 1.06 million (2021: 1,023,687). At the end of 2021, approximately 16.9% of the total population was concentrated in metropolitan areas with more than 500,000 inhabitants; the largest of these areas were (in descending order) Berlin, Hamburg, Munich, Cologne and Frankfurt am Main.

Sources: Statistisches Bundesamt, Bundesländer mit Hauptstädten nach Fläche, Bevölkerung und Bevölkerungsdichte am 31.12.2021 (October 2022) (<https://www.destatis.de/DE/Themen/Laender-Regionen/Regionales/Gemeindeverzeichnis/Administrativ/02-bundeslaender.html>); Statistisches Bundesamt, Population increased to 84.3 million in 2022, press release of January 19, 2023 (https://www.destatis.de/EN/Press/2023/01/PE23_026_124.html); German version: https://www.destatis.de/DE/Presse/Pressemitteilungen/2023/01/PD23_026_124.html); Statistisches Bundesamt, Städte nach Fläche, Bevölkerung und Bevölkerungsdichte am 31.12.2021 (October 2022) (<https://www.destatis.de/DE/Themen/Laender-Regionen/Regionales/Gemeindeverzeichnis/Administrativ/05-staedte.html>).

The following table shows selected key demographic figures for the Federal Republic for the years stated.

POPULATION

	2021	2020	2019	2018	2017
	(number of persons)				
Total population	83,237,124	83,155,031	83,166,711	83,019,213	82,792,351
Age distribution	(percent of total population)				
Under 20	18.5	18.4	18.4	18.4	18.4
20-40	24.4	24.5	24.6	24.6	24.5
40-60	27.7	28.1	28.4	28.8	29.1
60-80	22.0	21.8	21.7	21.7	21.7
80 and more	7.3	7.1	6.8	6.5	6.2
Growth rate	(percent change on the previous year)				
Total population	0.1	0.0	0.2	0.3	0.3
Under 20	0.6	0.0	0.2	0.3	0.2
20-40	-0.3	-0.5	0.1	0.5	0.7
40-60	-1.3	-1.1	-1.1	-0.8	-0.8
60-80	0.9	0.5	0.4	0.3	0.5
80 and more	3.0	4.5	5.4	4.6	4.2

Source: Statistisches Bundesamt, *Bevölkerung, Bevölkerungsstand, Bevölkerung nach Altersgruppen (ab 2011)*
(<https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Bevoelkerungsstand/Tabellen/liste-altersgruppen.html>).

Without the surplus resulting from net immigration, the total population would have fallen every year since 1972 because more people died than were born in each year. These developments are expected to continue, together with the continued aging of the population. According to the 15th coordinated population projection of the Federal Statistical Office published in December 2022 and covering the period until 2070, the number of people of retirement age (which will be 67 years from 2031 onwards) or over in Germany will rise by roughly 4 million to at least 20 million by the mid-2030s. The number of people of working age (20 to 66 years), which currently comprises 51.4 million people, will decrease by between 1.6 and 4.8 million in the next 15 years, which may result in a downward pressure on Germany's growth potential in the long term. The number of those aged 80 or over will remain relatively stable until the middle of the 2030s, amounting to between 5.8 and 6.7 million. Subsequently, this elderly population is expected to increase massively, along with the related need for long-term care. If net immigration remains at the level of the past decade of about 400,000 persons per year on average, roughly 90 million people would live in Germany in 2070. However, with a low level of net immigration of 180,000 people per year, the population would fall to 75 million people in 2070.

Sources: Statistisches Bundesamt, *Population increased to 84.3 million in 2022, press release of January 19, 2023*
(https://www.destatis.de/EN/Press/2023/01/PE23_026_124.html; German version: https://www.destatis.de/DE/Presse/Pressemitteilungen/2023/01/PD23_026_124.html);
Statistisches Bundesamt, *4 million more people aged 67 or over will live in Germany in 2035, press release of December 2, 2022*
(https://www.destatis.de/EN/Press/2022/12/PE22_511_124.html; German version: https://www.destatis.de/DE/Presse/Pressemitteilungen/2022/12/PD22_511_124.html).

Government

The Federal Republic is a federated republic whose constitution is codified in the *Grundgesetz* of 1949. The capital of the Federal Republic is Berlin. The Federal Republic consists of 16 federal states (*Länder*). The *Länder* have legislative sovereignty over matters not expressly reserved to the legislative, executive and judicial bodies of the Federal Republic.

The *Grundgesetz* provides for a Federal President (*Bundespräsident*), two Houses of Parliament (the *Bundestag* and the *Bundesrat*, the latter consisting of representatives of the 16 *Länder* governments), a Chancellor (*Bundeskanzler*) and a Federal Constitutional Court (*Bundesverfassungsgericht*). The Chancellor heads the Federal Government (*Bundesregierung*), consisting of the Chancellor and the Federal Ministers. The *Bundespräsident* acts as head of state.

General elections for the *Bundestag* are generally held every four years on the basis of an electoral system of proportional representation. The last general election was held on September 26, 2021.

A political party is not entitled to party representation in the *Bundestag* unless it receives at least 5% of the votes cast or three direct mandates, awarded to the candidate with the most votes in a given electoral district, in a general election. Upon proposal by the *Bundespräsident*, the Chancellor is elected by and is responsible to the *Bundestag*.

Political Parties

The political parties currently represented in the Bundestag are: the Social Democratic Party (SPD); the Christian Democratic Union (CDU) and its Bavarian sister party, the Christian Social Union (CSU); the Greens (Bündnis 90/Die Grünen); the Free Democratic Party (FDP); the Alternative for Germany (AfD); the Left-Wing Party (Die Linke) and the Südschleswigscher Wählerverband (SSW), which participates in the distribution of seats of the Bundestag as a party representing the Danish minority in Federal State of Schleswig-Holstein, to which the five percent of the votes cast or three direct mandates threshold for participation in the Bundestag does not apply.

Since 1949, the Federal Republic has been governed by nine Chancellors over 20 electoral periods. The most recent general election, held in September 2021, resulted in a coalition between the Social Democratic Party (SPD), the Greens (Bündnis 90/Die Grünen) and the Free Democratic Party (FDP). On December 8, 2021, the Bundestag elected Olaf Scholz (SPD), who served as Finance Minister in the previous Federal Government, Chancellor for the first time.

Sources: *The Federal Returning Officer, 2021 Bundestag Election: final result, press release of October 15, 2021* (https://www.bundeswahlleiter.de/en/info/presse/mitteilungen/bundestagswahl-2021/52_21_endgueltiges-ergebnis.html); *Deutscher Bundestag, Election of Members and the allocation of seats, October 18, 2021* (<https://www.bundestag.de/en/parliament/elections/arithmetic>); *The Federal Government, New Federal Government in office, December 8, 2021* (<https://www.bundesregierung.de/breg-en/news/federal-chancellor-election-1989862>); *Bundesregierung, Koalitionsvertrag* (<https://www.bundesregierung.de/resource/blob/974430/1990812/04221173eef9a6720059cc353d759a2b/2021-12-10-koav2021-data.pdf?download=1>).

The following table shows the results of the five most recent general elections for the Bundestag.

ELECTION RESULTS TO THE GERMAN BUNDESTAG

	2021 Elections		2017 Elections		2013 Elections		2009 Elections		2005 Elections	
	% of Votes	Seats	% of Votes	Seats	% of Votes	Seats	% of Votes	Seats	% of Votes	Seats
SPD	25.7	206	20.5	153	25.7	193	23.0	146	34.2	222
CDU/CSU	24.1	197	33.0	246	41.5	311	33.8	239	35.2	226
Bündnis 90/Die Grünen	14.8	118	8.9	67	8.4	63	10.7	68	8.1	51
FDP	11.5	92	10.7	80	4.8	—	14.6	93	9.8	61
AfD	10.3	83	12.6	94	4.7	—	—	—	—	—
Die Linke.	4.9	39	9.2	69	8.6	64	11.9	76	8.7	54
SSW (1)	0.1	1	—	—	—	—	—	—	—	—
Others	8.6	—	5.0	—	6.2	—	6.0	—	3.9	—
Total		736		709		631		622		614

(1) SSW (Südschleswigscher Wählerverband), representing the Danish minority in the federal state of Schleswig-Holstein, is exempt from the five percent of the votes cast or three direct mandates threshold for representation in the Bundestag.

Sources: *The Federal Returning Officer, 2021 Bundestag Election: final result, press release of October 15, 2021* (https://www.bundeswahlleiter.de/en/info/presse/mitteilungen/bundestagswahl-2021/52_21_endgueltiges-ergebnis.html); *The Federal Returning Officer, Bundestag election 2017* (<https://www.bundeswahlleiter.de/en/bundestagswahlen/2017/ergebnisse/bund-99.html>); *Statistisches Bundesamt, Statistisches Jahrbuch 2016, Tables 10.1.1 and 10.1.2*; *Statistisches Bundesamt, Statistisches Jahrbuch 2011, Tables 4.3.1, 4.3.2 and 4.6*.

International Organizations

In addition to the European Union (“EU”), the Federal Republic is a member of various major multilateral institutions, including the United Nations, the International Monetary Fund (“IMF”), the International Bank for Reconstruction and Development and the International Development Association, the Council of Europe, the Organization for Economic Cooperation and Development and the North Atlantic Treaty Organization. Furthermore, the Federal Republic is a signatory to the General Agreement on Tariffs and Trade and a member of the World Trade Organization (“WTO”). It is also a shareholder of, among others, the European Investment Bank (“EIB”), the European Bank for Reconstruction and Development, the Asian Infrastructure Investment Bank and the European Atomic Energy Community.

The European Union and European Integration

The Federal Republic was one of the six founding members of the European Coal and Steel Community in 1951, which later developed into the EU. Since its foundation, the EU has grown considerably. Following the withdrawal of the United Kingdom from the EU on January 31, 2020, 27 countries currently form part of the EU. These include Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain and Sweden (together, the “EU Member States”). According to provisional data, the aggregate population of the 27 EU Member States was approximately 447 million as of January 1, 2022. Formal accession negotiations are currently being conducted with Montenegro, Serbia, Albania, North Macedonia and Türkiye. While Türkiye is a key strategic partner of the EU on issues including migration, security, counter-terrorism, and the economy, accession negotiations with Türkiye have not progressed in recent years. In 2022 the European Council granted Ukraine, Moldova and Bosnia and Herzegovina the status of candidate countries. Georgia was given a European perspective in 2022 and the European Commission stated it should be granted candidate status once a number of priorities have been addressed. Kosovo is a potential candidate with the Stabilization and Association Agreement between the EU and Kosovo having entered into force on April 1, 2016.

Sources: European Union, Principles, countries, history, History of the EU (https://europa.eu/about-eu/eu-history/index_en.htm); European Union, Principles, countries, history, History of the EU, History of the European Union 1945-59 (https://europa.eu/european-union/about-eu/history/1945-1959_en); European Union, About the EU (https://europa.eu/european-union/about-eu/countries_en#the-27-member-countries-of-the-eu); Statistical Office of the European Communities, Total population (<https://ec.europa.eu/eurostat/databrowser/view/tps00001/default/table?lang=en>); European Commission, Enlargement (https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy_en).

Political Integration

The EU is based on treaties that are binding agreements between the EU Member States and have been approved voluntarily and democratically by all EU Member States. The treaties set out the EU’s objectives, the rules governing the EU institutions, the way decisions are taken and the relationship between the EU and the EU Member States. Treaties are amended to make the EU more efficient and transparent, to prepare for the accession of candidate countries as new EU Member States and to introduce new areas of cooperation. Under the treaties, EU institutions can adopt legislation, which, depending on the subject matter, becomes directly applicable law or requires further implementation by the EU Member States.

The EU’s three main institutions are the Council of the EU (representing the governments of the EU Member States) (the “Council”), the Parliament (elected by and representing the citizens of the EU Member States) and the European Commission (the executive body of the EU). In addition, the European Council, which consists of the heads of state or government of the EU Member States, the European Council President and the President of the European Commission, defines the EU’s overall political direction and priorities. It is not one of the EU’s legislating institutions, but rather sets the EU’s policy agenda, traditionally by adopting conclusions during European Council meetings which identify issues of concern and actions to take.

Article 50 of the Treaty on European Union provides for a mechanism for the voluntary and unilateral withdrawal of an EU Member State from the EU. Pursuant to Article 50, the withdrawal process is initiated by a notification from the EU Member State wishing to withdraw to the European Council. The EU treaties cease to apply to an EU Member State from the later of the date of entry into force of an agreement setting out arrangements for the EU Member State’s withdrawal, or within two years of the notification of the withdrawal. The European Council may, in agreement with the EU Member State concerned, unanimously decide to extend the period beyond two years.

EU Sanctions. Restrictive measures, also known as sanctions, are an essential tool of the EU's Common Foreign and Security Policy. All restrictive measures adopted by the EU are fully compliant with its obligations under international law, including those pertaining to human rights and fundamental freedoms. The first step in adopting restrictive measures is through a proposal by the High Representative of the Union for Foreign Affairs and Security Policy. After this, the Common Foreign and Security Policy Council resolves on any restrictive measures by way of a decision binding on EU Member States. Any restrictive measures which include economic or financial sanctions additionally require the adoption of an accompanying Council regulation. Regulations are directly applicable within the EU and are binding on individuals and entities, including economic operators. Decisions and regulations on sanctions must be adopted unanimously by the Council. The regulation defines the precise scope of the measures and details of their implementation.

As part of the EU response to Russia's invasion of Ukraine the EU adopted a set of comprehensive restrictive measures against Russia and Russian individuals in addition to the prior sanctions that were imposed after the illegal annexation of Crimea in 2014. In addition, sanctions were issued against Belarus and Belarusian individuals in response to their involvement in this invasion. The sanctions imposed comprise, among others, individual and economic sanctions. In March 2023, 877 Russian individuals, including Russian President Vladimir Putin and Russian Foreign Minister Sergey Lavrov, and 62 entities were subjected to an asset freeze and/or a travel ban because their actions undermined Ukraine's territorial integrity, sovereignty and independence. The lists of sanctioned persons and entities are kept under constant review and are subject to periodic renewals by the Council. The economic sanctions, which target exchanges with Russia and Belarus in specific economic sectors, include restricted access to EU capital markets for certain Russian banks and companies, a ban on transactions with the Russian Central Bank and the Central Bank of Belarus, a ban of a number of Russian and Belarusian banks from the SWIFT messaging network, a prohibition on the provision of euro-denominated banknotes to Russia and Belarus, a ban on coal and other solid-fossil-fuel imports from Russia, a price cap related to the maritime transport of crude oil and petroleum products, a ban on use of EU airspace and EU airports by Russian-owned, Russian-registered or Russian-controlled aircraft, a ban on exports to and imports from Russia of raw materials, goods and technology in various sectors, a ban on exports to Russia of dual-use goods and an export and import ban on arms.

Sources: European Commission, Europe in 12 lessons by Pascal Fontaine (<https://publications.europa.eu/en/publication-detail/-/publication/a5ba73c6-3c6a-11e8-b5fe-01aa75ed71a1>); Europa.eu, Treaties currently in force (<https://eur-lex.europa.eu/collection/eu-law/treaties/treaties-force.html>); European Council, Council of the European Union, The European Council (<https://www.consilium.europa.eu/en/european-council/>); Europa.eu, Consolidated versions of the Treaty on European Union, Article 50 (https://eur-lex.europa.eu/eli/treaty/teu_2016/art_50/oj); Council of the EU, Policies, Sanctions (<https://www.consilium.europa.eu/en/policies/sanctions/>); Council of the EU, Policies, Sanctions, EU restrictive measures against Russia over Ukraine (since 2014), accessed on March 26, 2023 (<https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-against-russia-over-ukraine/>); Council of the EU, Policies, Sanctions, EU restrictive measures against Belarus, accessed on March 26, 2023 (<https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-against-belarus/>).

Economic Integration

From its inception, the EU has had the fundamental objective, in line with its predecessors, of economic integration of its member states. After a long process, a single market that provides for the free movement of goods and services, persons and capital among the EU Member States was established as of January 1, 1993. The integration of the EU Member States' economies and the completion of a single market are also promoted by a European competition policy, which aims at creating a level-playing field for EU Member States' companies, thereby promoting economic efficiency, and by a European consumer policy. In addition, various liberalization and harmonization measures are being implemented, for example in the telecommunication and energy sectors. In the financial sector, the single market has been fostered by providing for the free movement of capital and the freedom to perform banking services throughout the EU under the "single passport," which enables financial institutions to provide financial services throughout the EU based on a single license obtained in one EU Member State. The EU promotes economic integration with regional aid, which is designed to focus development efforts on certain disadvantaged regions and sections of population of the EU. Another important policy area for the EU has been agriculture and fisheries.

State Aid. EU Member States may generally only grant state aid to companies within the narrow framework of the EU's regulations and procedures on state aid in order to safeguard a level-playing field within the single market. To enable EU Member States to support their national economies during the COVID-19 pandemic the European Commission adopted a temporary framework for state aid measures (the "COVID Temporary Framework") in March 2020, permitting EU Member States to provide certain types of direct support to companies and small enterprises affected by the COVID-19 pandemic. These support measures were therefore subject to less stringent conditions than would normally have been applicable. The COVID Temporary

Framework has been amended and extended several times since. It expired on June 30, 2022, albeit with some exceptions. In particular, investment and solvency support measures may still be implemented until December 31, 2023. In addition, the COVID Temporary Framework provides for a flexible transition, under clear safeguards, for the conversion and restructuring of debt instruments, such as loans and guarantees, into other forms of support, such as direct grants, until June 30, 2023. The COVID Temporary Framework has provided the basis for a number of German governmental support measures at the federal and regional (*Länder*) levels in connection with the COVID-19 pandemic, including for example the KfW Special Loan Program.

Similar considerations led to the adoption of a temporary crisis framework for state aid in March 2022 as part of the EU response to Russia's invasion of Ukraine. This framework is referred to as "Temporary Crisis and Transition Framework" and has been amended and extended several times. It permits EU Member States to grant limited amounts of aid to companies affected by the current crisis until December 31, 2023, and aims to ensure that sufficient liquidity remains available to businesses, to compensate companies for the additional costs incurred due to exceptionally high gas and electricity prices and to incentivize the reduction of electricity consumption. In addition, until December 31, 2025, EU Member States may grant support to foster the transition to a net-zero economy. In particular, state aid may be granted to accelerate the roll-out of renewable energy, storage and renewable heat technologies and to decarbonize industrial production processes.

The EU Budget and the EU Recovery Instrument. The EU's expenditures are governed by a long-term budget, also referred to as multiannual financial framework ("MFF"). The MFF is meant to ensure that the EU's expenditures develop in an orderly manner and within the limits of its own resources. It aims to align spending with policy priorities, to increase predictability of EU finances for co-financers and beneficiaries, to ensure EU budgetary discipline and to facilitate the adoption of the annual EU budget. It sets overall spending limits by determining annual maximum amounts for commitment appropriations, which cover commitments made to spend funds over one or more years in certain expenditure categories and for payment appropriations.

The regulation laying down the MFF of the EU for the years 2021 to 2027 was formally adopted in December 2020. The regulation provides for a long-term EU budget of EUR 1,210.9 billion (in current prices, including the integration of the European Development Fund) in commitment appropriations. Together with the new temporary Next Generation EU recovery instrument (the "EU Recovery Instrument") of up to EUR 806.9 billion (in current prices), which is specifically aimed at addressing the socioeconomic consequences of the COVID-19 pandemic, this allows the EU to provide an unprecedented amount of approximately EUR 2 trillion to support recovery from the COVID-19 pandemic in Europe and further the EU's long-term priorities across different policy areas with new and reinforced priorities, including green and digital transitions. Following Russia's invasion of Ukraine, the EU budget was used to provide emergency assistance and support in Ukraine and in the EU countries, and to alleviate the humanitarian consequences of the war.

The most important component of the EU Recovery Instrument is the Recovery and Resilience Facility ("RRF"), with up to EUR 724 billion (in current prices) in loans and grants available to support reforms and investments undertaken by the EU Member States. The balance of the funds under the EU Recovery Instrument is being employed through existing EU instruments and assistance programs. To access the RRF, EU Member States are required to submit national recovery and resilience plans which are assessed by the European Commission and then approved by the Council of the EU on a case-by-case basis. After a prefinancing of 13% of the total support available to the relevant EU Member State, an EU Member State may request further disbursements up to twice a year upon reaching certain agreed milestones and targets. As of February 21, 2023, the European Commission had disbursed EUR 144 billion to EU Member States under the RRF, thereof EUR 96 billion in the form of grants and EUR 48 billion in the form of loans. In February 2023, the European Parliament and the Council adopted an amending regulation to include REPowerEU chapters in the RRF. The purpose of REPowerEU is to strengthen the strategic autonomy of the EU by diversifying its energy supplies and ending its dependency on Russian fossil fuel imports. EU Member States will be able to add a new REPowerEU chapter to their national recovery and resilience plans, in order to finance key investments and reforms that will help achieve the REPowerEU objectives. To this end the RRF financial envelope has been increased with EUR 20 billion in new grants. The 2023 EU budget, which was adopted by the Council and the European Parliament in November 2022, amounts to EUR 186.6 billion in commitment appropriations and EUR 168.7 billion in payment appropriations.

To implement the EU Recovery Instrument, the EU's Own Resources Decision, which defines how the EU budget is financed and was adopted by the Council on December 14, 2020, pursuant to the special legislative procedure applicable thereto, was ratified by all EU Member States in accordance with their own constitutional requirements. Under the Own Resources Decision, the European Commission is authorized, on an

exceptional basis, to temporarily borrow up to EUR 806.9 billion (in current prices) on the capital markets for the EU Recovery Instrument. As of December 2022, the Commission raised EUR 171 billion for the EU Recovery Instrument via long-term EU bonds, of which EUR 36.5 billion were raised through green bonds. In addition, EUR 17 billion of short-term debt in EU bills was outstanding on December 31, 2022. The European Commission has announced plans to issue long-term EU bonds in an amount of EUR 80 billion between January and June 2023, to be complemented by short-term EU bills.

Sources: European Commission, Europe in 12 lessons by Pascal Fontaine (<https://publications.europa.eu/en/publication-detail/-/publication/a5ba73c6-3c6a-11e8-b5fe-01aa75ed71a1>); European Banking Authority, Regulation and policy, Passporting and supervision of branches (<https://eba.europa.eu/regulation-and-policy/passporting-and-supervision-branches>); European Commission, Competition Policy, State Aid (https://competition-policy.ec.europa.eu/state-aid_en); European Commission, Competition Policy, State Aid, Coronavirus, The State Aid Temporary Framework (https://competition-policy.ec.europa.eu/state-aid/coronavirus/temporary-framework_en); European Commission, Competition Policy, State Aid, Ukraine (https://competition-policy.ec.europa.eu/state-aid/ukraine_en); European Council, Policies, EU budget (<https://www.consilium.europa.eu/en/policies/the-eu-budget/>); European Council, Policies, Long-term EU budget 2021-2027 and recovery package (<https://www.consilium.europa.eu/en/policies/the-eu-budget/long-term-eu-budget-2021-2027/>); Publications Office of the European Union, The EU's 2021-2027 long-term budget and NextGenerationEU, Facts and Figures (<https://op.europa.eu/en/publication-detail/-/publication/d3e77637-a963-11eb-9585-01aa75ed71a1/language-en>); European Commission, Strategy and policy, Recovery Plan for Europe, accessed on March 24, 2023 (https://ec.europa.eu/info/strategy/recovery-plan-europe_en); European Commission, Business, Economy, Euro, Economic recovery, Recovery and Resilience Facility, accessed on March 24, 2023 (https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en); European Commission, Communication from the Commission to the European Parliament and the Council, Recovery and Resilience Facility: Two years on A unique instrument at the heart of the EU's green and digital transformation, February 21, 2023 (https://commission.europa.eu/system/files/2023-02/COM_2023_99_1_EN.pdf); Council of the EU, EU recovery plan: Council adopts REPowerEU, press release of February 21, 2023 (<https://www.consilium.europa.eu/en/press/press-releases/2023/02/21/eu-recovery-plan-council-adopts-repowerEU/>); European Parliament, MEPs adopt EU budget 2023: focus on Ukraine, energy and recovery, press release of November 23, 2022 (<https://www.europarl.europa.eu/news/de/press-room/20221118IPR55709/meps-adopt-eu-budget-2023-focus-on-ukraine-energy-and-recovery>); Official Journal of the European Union, DEFINITIVE ADOPTION (EU, Euratom) 2023/278 of the European Union's general budget for the financial year 2023, February 23, 2023 (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2023:058:FULL&from=EN>); Council of the European Union, Green light from all member states for EU recovery spending, press release of May 31, 2022 (<https://www.consilium.europa.eu/en/press/press-releases/2021/05/31/green-light-from-all-member-states-for-eu-recovery-spending/>); European Commission, Half-yearly report on the implementation of borrowing, debt management and related lending operations pursuant to Article 12 of Commission Implementing Decision C(2022)9700, February 22, 2023 (https://commission.europa.eu/system/files/2023-02/COM_2023_93_F1_REPORT_FROM_COMMISSION_EN.PDF).

Trade. The EU is responsible for trade matters with third-party countries. In the area of trade in goods, the EU has exclusive competence. Furthermore, the EU's responsibilities also cover trade in services, the commercial aspects of intellectual property (such as patents), public procurement and foreign direct investment, whereas in the case of portfolio investments, investment protection and investment dispute settlement, the competence is shared between the EU and the EU Member States. In particular, the EU is responsible for negotiating and concluding international trade agreements as well as identifying trade barriers and unfair trade practices by trading partners and adopting appropriate countermeasures. Trade agreements are negotiated by the European Commission upon authorization of the Council. Once the European Commission completes negotiations, the Council and the European Parliament examine the final negotiated agreement and decide whether or not to approve it. Trade agreements regulating areas of mixed responsibility between the EU and the EU Member States can only be concluded after ratification by all EU Member States. As part of the EU's response to Russia's Invasion of Ukraine the EU has imposed comprehensive economic sanctions, including trade restrictions. For more information on the trade restrictions, see "Political Integration—EU Sanctions".

Sources: European Commission, Home, EU trade relationships by country/region, Making trade policy (<https://ec.europa.eu/trade/policy/policy-making>); Federal Ministry for Economic Affairs and Energy, Topics, Trade Policy, Fostering international trade and reducing barriers (<https://www.bmwi.de/Redaktion/EN/Dossier/trade-policy.html>).

EU Response to the Energy Crisis. Since the fall of 2022, and significantly exacerbated by Russia's invasion of Ukraine, Europe has been facing an unprecedented energy crisis involving hikes in energy prices and disruptions to energy supply. In response, the EU Member States have been working together to ensure affordable and competitive energy for EU consumers, increase the EU's energy security and preparedness in the event of emergencies, and strengthen the energy resilience and autonomy of EU Member States. To this end, EU Member States agreed on a temporary market correction mechanism that is intended to limit episodes of extraordinarily high gas prices in the EU and thus reduce the impact of price hikes on EU citizens and the EU economy. A price ceiling for natural gas transactions is to be applied when and if natural gas prices reach exceptional levels. The mechanism entered into force on February 15, 2023 and can be deactivated or suspended following pre-defined rules. Furthermore, EU Member States in December 2022 adopted measures to improve solidarity across the EU and to better coordinate joint purchasing of natural gas on global markets. In October 2022, in order to assist citizens and businesses most affected by the energy crisis, the EU Member States had adopted an emergency regulation, which included emergency measures to reduce electricity use, to cap revenues of electricity producers and to secure a solidarity contribution from fossil fuel businesses. In June 2022, the EU Council had adopted the gas storage regulation. The regulation provides that underground gas storage on EU

member states' territory had to be filled to at least 80% of their capacity before the winter of 2022/2023 and to 90% before the following winter periods. In early 2022, the heads of state or government of the EU Member States had already jointly decided to phase out the EU's dependency on Russian fossil fuels. In this context, the EU Commission initiated the REPower EU plan discussed above under “—The EU Budget and the EU Recovery Instrument” and put in place the Temporary Crisis and Transition Framework discussed above under “—State Aid”.

Source: European Council/Council of the European Union, Policies, Energy prices and security of supply, last reviewed on March 24, 2023 (<https://www.consilium.europa.eu/en/policies/energy-prices-and-security-of-supply/>).

Monetary Integration

The Federal Republic is a signatory to and has ratified the Treaty on European Union of February 1992 (also known as the “Maastricht Treaty”). The Maastricht Treaty was the basis for the establishment of the European Economic and Monetary Union (“EMU”). The EMU led, in turn, to the adoption of irrevocable conversion rates between the euro and the national currencies of the initial participating member states on December 31, 1998, and the introduction of the euro as the single European currency in the euro area on January 1, 1999. On January 1, 2002, banknotes and coins denominated in euro were introduced as legal tender to replace the national currencies in the twelve member states forming the euro area at that time (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain). Slovenia, Malta, Cyprus, Slovakia, Estonia, Latvia, Lithuania and Croatia subsequently joined the euro area.

The European Central Bank (“ECB”) was established on June 1, 1998, as part of the European System of Central Banks (“ESCB”). According to the Maastricht Treaty, the primary objective of the ESCB is to maintain price stability. Without prejudice to the objective of price stability, the ESCB supports the general economic policies of the EU. See “—Monetary and Financial System” for more information on the ECB and ESCB as well as on the European financial system. The Eurosystem, consisting of the ECB and the national central banks of those EU Member States whose currency is the euro (“Euro Area Member States”), assumed sole responsibility for the monetary policy in the euro area on January 1, 1999.

Sources: European Union, Principles, countries, history, Principles and values, Founding agreements, Treaty on European Union – Maastricht Treaty (https://europa.eu/european-union/law/treaties_en); European Central Bank, About, History, Economic and Monetary Union (EMU) (<https://www.ecb.int/ecb/history/emu/html/index.en.html>); European Central Bank, The euro, Our money (<https://www.ecb.europa.eu/euro/intro/html/index.en.html>); European Central Bank, Monthly Bulletin, 10th Anniversary of the ECB (<https://www.ecb.europa.eu/pub/pdf/other/10thanniversaryoftheecbmb200806en.pdf>).

EU Economic Governance

The EU economic governance framework aims to detect, prevent and correct problematic economic trends such as excessive government deficits or public debt levels, which can stunt growth and put economies at risk. The framework consists of the following main components.

Stability and Growth Pact. To strengthen the monitoring and coordination of national fiscal and economic policies, the EU Member States established the Stability and Growth Pact (“SGP”) in 1997. Every April, EU Member States are required to lay out their fiscal plans for the year based on economic governance rules set forth in the SGP. Euro Area Member States do this in documents known as “Stability Programs”, while EU Member States whose currency is not the euro submit “Convergence Programs”, which include additional information about monetary policies. In addition, to ensure the coordination of fiscal policies among Euro Area Member States, governments are required by European economic governance rules to submit their draft budgetary plans for the following year to the European Commission by October 15 of each year.

The preventive arm of the SGP binds EU Member States to their commitments towards sound fiscal policies and coordination by setting country-specific, medium-term budgetary targets. These budget deficit (or surplus) targets are defined in structural terms by taking into consideration business cycle swings and filtering out the effect of one-off and temporary measures. The corrective arm of the SGP consists of the excessive deficit procedure (“EDP”). The EDP ensures the correction of excessive budget deficits (defined as a deficit in excess of 3% of GDP) or excessive public debt levels (defined as a debt ratio greater than 60% of GDP without an adequate diminishing trend). Countries that fail to respect the SGP's preventive or corrective rules may ultimately face sanctions. For Euro Area Member States, these could take the form of warnings and financial sanctions including fines. In addition, all EU Member States could face a suspension of commitments or payments from the EU's structural and investment funds if they fail to abide by the corrective rules. The SGP

contains rules for exceptional situations. In particular, in case of an unusual event outside the control of the EU Member State concerned which has a major impact on the financial position of the general government or in periods of severe economic downturn for the euro area or the EU as a whole, upon proposal of the European Commission and endorsement of the Council, EU Member States are allowed to depart from the budgetary requirements that would normally apply provided that this does not endanger fiscal sustainability in the medium-term. When applied in the case of a severe economic downturn for the euro area or the EU as a whole this rule is referred to as the “general escape clause.”

Upon proposal of the European Commission, the “general escape clause” under the SGP was activated in March 2020 as part of the EU’s response to the COVID-19 pandemic. The use of the clause has allowed EU Member States to deal adequately with the effects of the pandemic and has provided them with the required flexibility to take the measures necessary to support their health and civil protection systems and to protect European economies. In May 2022, the European Commission concluded that high uncertainty and downside risks to economic activity from Russia’s invasion of Ukraine warranted the extension of the general escape clause of the Stability and Growth Pact through 2023. According to the European Commission’s fiscal policy guidance for 2024, the general escape clause will be deactivated at the end of 2023. At the same time, the EU is working towards a reform of its economic governance framework. Discussions based on the Commission’s guidance presented in November 2022 are ongoing, with legislative proposals expected to be issued in the first half of 2023. See also “—Public Finance—Germany’s General Government Deficit/Surplus and General Government Gross Debt.”

Sources: European Commission, Economy and Finance, Economic and fiscal governance (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance_en); European Commission, Economy and Finance, Economic and fiscal governance, Stability and Growth Pact (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact_en); European Commission, Economy and Finance, Economic and fiscal governance, Stability and Growth Pact, Stability and convergence programmes (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact/stability-and-convergence-programmes_en); European Commission, Economy and Finance, Economic and fiscal governance, Stability and Growth Pact, Annual draft budgetary plans (DBPs) of euro area countries (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact/annual-draft-budgetary-plans-dbps-euro-area-countries_en); European Commission, Economy and Finance, Economic and fiscal governance, Stability and Growth Pact, The preventive arm (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact/preventive-arm_en); European Commission, Economy and Finance, Economic and fiscal governance, Stability and Growth Pact, The corrective arm / Excessive Deficit Procedure (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact/corrective-arm-excessive-deficit-procedure_en); European Commission, Vade Mecum on the Stability & Growth Pact 2019 edition, page 25 and page 44 (https://economy-finance.ec.europa.eu/system/files/2019-04/ip101_en.pdf); Council of the European Union, Statement of EU ministers of finance on the Stability and Growth Pact in light of the COVID-19 crisis, press release of March 23, 2020 (<https://www.consilium.europa.eu/en/press/press-releases/2020/03/23/statement-of-eu-ministers-of-finance-on-the-stability-and-growth-pact-in-light-of-the-covid-19-crisis/>); European Commission, 2022 European Semester - Spring Package, Communication from the Commission of May 5, 2022 (https://commission.europa.eu/system/files/2022-05/2022_european_semester_spring_package_communication_en.pdf); European Commission, Fiscal policy guidance for 2024: Promoting debt sustainability and sustainable and inclusive growth, press release of March 3, 2023 (https://ec.europa.eu/commission/presscorner/detail/%20en/ip_23_1410).

Macroeconomic Imbalance Procedure. Established in 2011, the macroeconomic imbalance procedure (“MIP”) is a surveillance mechanism for the EU and the EU Member States that aims to identify potential economic risks early on, prevent the emergence of harmful macroeconomic imbalances and correct any existing excessive imbalances. The preventive arm of the procedure relies on an early warning system that uses a scoreboard of indicators and in-depth country reviews. This preventive arm allows the European Commission and the Council to provide preventive recommendations to the respective EU Member State at an early stage. In cases of an EU Member State with excessive macroeconomic imbalances, the corrective arm may open an excessive imbalance procedure, under which the EU Member State concerned will have to submit a corrective action plan and regular progress reports. The enforcement regime within the corrective arm comprises the option to decide upon financial sanctions for Euro Area Member States, including fines of up to 0.1% of such Euro Area Member State’s GDP, if a Euro Area Member State repeatedly does not comply with its obligations.

In the 2022 surveillance cycle, twelve EU Member States, including Germany, were subject to an in-depth review in the context of the MIP. Of these twelve EU Member States, seven were found to be experiencing macroeconomic imbalances, including Germany, and three excessive imbalances. According to the European Commission’s assessment, a further in-depth review for Germany is warranted to examine the persistence of imbalances or their unwinding in 2023 (see “—The Economy—International Economic Relations—Germany’s Current Account Surplus and the Macroeconomic Imbalance Procedure”).

Sources: European Commission, Economy and Finance, Economic and fiscal governance, Macroeconomic imbalance procedure, Dealing with macroeconomic imbalances (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/macro-economic-imbalance-procedure/dealing-macro-economic-imbalances_en); European Commission, European Commission, Alert Mechanism Report 2023, (https://commission.europa.eu/system/files/2022-11/COM_2022_781_1_EN.pdf).

Treaty on Stability, Coordination and Governance in the EMU. The Treaty on Stability, Coordination and Governance in the EMU (“TSCG”), which was signed in March 2012 and entered into force on January 1, 2013, is intended to promote budgetary discipline in the participating EU Member States through a fiscal pact. The fiscal pact’s provisions are binding for Euro Area Member States, while the other participating EU Member States will only be bound if they adopt the euro, unless they declare their intention to be bound by certain provisions of the treaty at an earlier date. The TSCG requires the participating parties to ensure convergence towards the country-specific, medium-term budgetary objectives as defined in the SGP, with a limit of a structural deficit of 0.5% of such participating EU Member State’s GDP (or of 1% of GDP, if their debt-to-GDP ratio is well below 60%). In the event of a deviation from this requirement, an automatic correction mechanism will be triggered with escape clauses for exceptional circumstances. These budget rules were to be transposed into national law through provisions of “binding force and permanent character, preferably constitutional” one year after the entry into force of the treaty, i.e., by January 1, 2014, at the latest.

Sources: European Council, Fiscal compact signed: Strengthened fiscal discipline and convergence in the euro area, press release of March 2, 2012 (https://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/ec/128454.pdf); Deutsche Bundesbank, Glossary: Treaty on Stability, Coordination and Governance in the EMU (TSCG) (<https://www.bundesbank.de/dynamic/action/en/homepage/glossary/729724/glossary?firstLetter=T&contentId=653696#panel-653696>); European Commission, The EU’s economic governance explained, press release of November 26, 2015 (https://ec.europa.eu/commission/presscorner/detail/en/MEMO_15_6071).

Financial Assistance in the EU

EU countries experiencing or threatened by financing difficulties can request access to several financial assistance mechanisms. The main ones are described below.

Temporary Financial Stability Mechanism. In May 2010, the EU and Euro Area Member States established a temporary stability mechanism to safeguard the financial stability amid severe tensions in euro area sovereign debt markets, consisting of the European Financial Stabilisation Mechanism (“EFSM”) and the European Financial Stability Facility (“EFSF”). Through the EFSM the European Commission is allowed to borrow up to a total of EUR 60 billion on behalf of the EU under an implicit EU budget guarantee. The EFSF was created as a temporary institution and since July 1, 2013 no longer engages in new financing programs. As of March 2023, the EFSF had outstanding loans to Ireland, Portugal and Greece of approximately EUR 173 billion. Debt securities issued by the EFSF to finance these loans are backed by irrevocable and unconditional guarantees and over-guarantees (up to 165%) extended by the Euro Area Member States. The Federal Republic accounts for approximately 29% of the guarantees according to the contribution key. The EFSF will be dissolved and liquidated when all financial assistance provided to Euro Area Member States and all funding instruments issued by the EFSF have been repaid in full.

Sources: European Commission, Economy and Finance, EU financial assistance, How is financial assistance provided? (https://economy-finance.ec.europa.eu/eu-financial-assistance/how-financial-assistance-provided_en); European Commission, Economy and Finance, EU financial assistance, Euro area countries, European Financial Stabilisation Mechanism (EFSM) (https://economy-finance.ec.europa.eu/eu-financial-assistance/euro-area-countries/european-financial-stabilisation-mechanism-efsm_en); European Commission, Economy and Finance, EU financial assistance, Euro area countries, European Financial Stability Facility (EFSF) (https://economy-finance.ec.europa.eu/eu-financial-assistance/euro-area-countries/european-financial-stability-facility-efsf_en); European Stability Mechanism, Financial Assistance, Programme database, Programme Overview (<https://www.esm.europa.eu/financial-assistance/programme-database/programme-overview>); European Financial Stability Facility, Financial Statements, Management Report and Independent Auditor’s Report 2021 (https://www.esm.europa.eu/system/files/document/2022-06/EFSF_Financial%20Statements_31.12.21.pdf); European Stability Mechanism, Explainers, Guarantees by EFSF Countries (<https://www.esm.europa.eu/about-us/explainers#guarantees-by-efsf-countries>).

European Stability Mechanism. Since October 2012, the European Stability Mechanism (“ESM”), which was established as an intergovernmental organization under public international law by the Euro Area Member States, has been assisting in preserving the financial stability of the EMU. As of July 1, 2013, it assumed the tasks fulfilled by the EFSF and the EFSM and is currently the primary support mechanism for Euro Area Member States experiencing or threatened by severe financing problems, if such assistance is deemed essential to safeguard financial stability in the euro area as a whole. The ESM issues bonds or other debt instruments on the financial markets to raise capital to provide assistance, subject to certain conditions, to Euro Area Member States. Unlike the EFSF, which is based upon guarantees by Euro Area Member States, the ESM has total subscribed capital of EUR 708.5 billion provided by Euro Area Member States, which provides it with a lending capacity of EUR 500 billion. EUR 81 billion of the ESM’s subscribed capital is in the form of paid-in capital with the balance of EUR 627.5 billion being callable capital. The contribution of each Euro Area Member State is based on the paid-in capital for the ECB. On this basis, the Federal Republic’s contribution amounts to approximately 27% of the aggregate contributions to the ESM. The Federal Republic contributed approximately EUR 22 billion of paid-in capital to the ESM.

Financial assistance from the ESM is activated upon a request from a Euro Area Member State to the chairperson of the ESM's board of governors and is provided subject to strict conditions appropriate to the instrument chosen. The initial instruments available to the ESM have been modeled upon those available to the EFSF and include the extension of loans to a Euro Area Member State in financial difficulties, interventions in the primary and secondary debt markets, action based on a precautionary program, and the extension of loans to governments, or since December 2014 directly to affected financial institutions, for the purposes of recapitalizing financial institutions. Each instrument is to be linked to a memorandum of understanding which sets forth the conditions for financial support as well as the monitoring and surveillance procedures established to ensure the Euro Area Member State is progressing towards financial stability. In principle, decisions under the ESM are taken by mutual agreement. However, in the event that the European Commission and the ECB conclude that an urgent decision related to financial assistance is needed because the financial and economic sustainability of the euro area is threatened, the mutual agreement rule is replaced by a qualified majority of 85%. Given its voting rights of approximately 27%, the Federal Republic may veto any decision even under the emergency voting rule. As of March 2023, the ESM had loans in an aggregate principal amount of approximately EUR 86 billion outstanding to Spain, Cyprus and Greece.

Sources: European Stability Mechanism, Who we are, History (<https://www.esm.europa.eu/about-us/history>); European Commission, Economy and Finance, EU financial assistance, Euro area countries, European Stability Mechanism (ESM) (https://economy-finance.ec.europa.eu/eu-financial-assistance/euro-area-countries/european-stability-mechanism-esm_en); European Stability Mechanism, Who we are (https://www.esm.europa.eu/about-us#headline-who_we_are); European Stability Mechanism, Explainers, The ESM, Capital Structure (<https://www.esm.europa.eu/about-us/explainers#capital-structure>); European Stability Mechanism, Explainers, The ESM, Basic information (<https://www.esm.europa.eu/about-us/explainers#basic-information>); European Stability Mechanism, Financial Assistance, Financial assistance instruments, Lending toolkit (<https://www.esm.europa.eu/financial-assistance/lending-toolkit>); European Stability Mechanism, Explainers, Lending, Policy conditions attached to loans (<https://www.esm.europa.eu/about-us/explainers#are-policy-conditions-always-tied-to-esm-loans->); European Stability Mechanism, Explainers, The ESM, ESM decision making (<https://www.esm.europa.eu/about-us/explainers#esm-decision-making>); European Stability Mechanism, Financial Assistance, Programme database, Programme Overview (<https://www.esm.europa.eu/financial-assistance/programme-database/programme-overview>).

On January 27 and February 8, 2021, the Euro Area Member States signed an agreement amending the treaty establishing the ESM. The reform establishes a common backstop to the Single Resolution Fund (“SRF”) in the form of a credit line from the ESM to replace the direct recapitalization instrument for financial institutions, providing a financial safety net for bank resolutions in the European banking union (the “Banking Union”), which will help to protect financial stability (see “—Monetary and Financial System—Financial System—European Financial System—European System of Financial Supervision and European Banking Union” for more information on the Banking Union and the SRF). The maximum amount of ESM loans to the SRF is set at EUR 68 billion. The credit line may only be used as a last resort and to the extent that it is fiscally neutral in the medium term, i.e., it is repaid through ex-post contributions by banks over a period of three to five years. Moreover, the revised ESM Treaty envisages the introduction of single-limb collective action clauses for bonds with maturities of more than a year issued by governments of Euro Area Member States, which, if required, would facilitate orderly and predictable sovereign debt restructuring by allowing certain cross-series modifications to the terms of bonds provided the issuer consents and there is an affirmative vote or written resolution of the holders of not less than 66⅔% of the aggregate principal amount of the outstanding debt securities of all relevant series (taken in the aggregate). Furthermore, the reformed ESM Treaty enables the ESM to have a stronger role in future economic adjustment programs and crisis prevention. The reform clarified that ESM precautionary instruments provide support to Euro Area Member States with sound fundamentals that could be affected by an adverse shock beyond their control in order to safeguard the financial stability of the euro area as a whole. The eligibility criteria for granting a precautionary credit line were tightened accordingly. If a Euro Area Member State meets certain quantitative benchmarks and complies with qualitative conditions related to EU surveillance, it is eligible to request a precautionary credit line based on a letter of understanding. Access to the credit line shall be discontinued, however, if the Beneficiary Member State (“BMS”) no longer respects the eligibility criteria. If the non-compliant BMS has drawn funds from the credit line, an additional margin will be imposed. The reformed ESM Treaty will come into force once it has been ratified by the parliaments of all Euro Area Member States.

Sources: ESM, About us, ESM Reform (<https://www.esm.europa.eu/about-esm/esm-reform>); ESM, About esm, ESM Treaty Reform - explainer (<https://www.esm.europa.eu/about-esm/esm-treaty-reform-explainer#ui-id-5>); European Union, Economic and Financial Committee, Collective Action Clauses in the Euro area, “Single-limb” CAC (https://europa.eu/efc/efc-sub-committee-eu-sovereign-debt-markets/collective-action-clauses-euro-area_de); Terms of Reference of the 2022 CAC (<https://europa.eu/efc/system/files/2021-04/EA%20Model%20CAC%20-%20Draft%20Terms%20of%20Reference.pdf>); Council of the European Union, Infographic - Reform of the European Stability Mechanism (ESM) (<https://www.consilium.europa.eu/en/infographics/reform-of-the-european-stability-mechanism-esm/>); Council of the EU, Documents&Publications, Agreement Amending the Treaty Establishing the European Stability Mechanism (ESM) (<https://www.consilium.europa.eu/en/documents-publications/treaties-agreements/agreement/?id=2019035&DocLanguage=en>).

European Instrument for Temporary Support to Mitigate Unemployment Risks in an Emergency. As part of the EU’s economic policy response to the COVID-19 pandemic the European instrument for temporary Support to mitigate Unemployment Risks in an Emergency (“SURE”) was implemented by the Council of the EU in May 2020. Until the end of 2022, SURE provided for financial assistance of EUR 98.4 billion in the form of loans from the EU, underpinned by a system of voluntary guarantees by EU Member States, to 19 EU Member States. To finance SURE, the European Commission has been issuing social bonds since October 2020, with an aggregate principal amount of EUR 98.4 billion issued as of December 7, 2022.

Source: European Commission, Economy and Finance, EU financial assistance, SURE, accessed on March 23, 2021 (https://economy-finance.ec.europa.eu/eu-financial-assistance/sure_en).

Statistical Standards

Statistical Standard for the National Accounts

Since August 2014, the Federal Statistical Office calculates the German national accounts in accordance with the European System of National and Regional Accounts 2010 (“ESA 2010”) which, in turn, is based on the System of National Accounts (SNA 2008) of the United Nations. Recalculations have been conducted for all time series since 1991.

Statistical Standard for the Balance of Payments

Since July 2014, the methodological concept of the German balance of payments statistics follows the sixth edition of the Balance of Payments and International Investment Position Manual (“BPM6”), the revised standard of the IMF. The application of BPM6 is binding for EU Member States by virtue of a regulation adopted by the European Commission. Balance of payments data since 1971 have been recalculated in accordance with BPM6.

Source: Bundesbank, Statistics, Methodological notes (<https://www.bundesbank.de/en/statistics/external-sector/balance-of-payments/methodological-notes-794532>).

Statistical Disclosure Standards of the International Monetary Fund

Since February 2015, the Federal Republic meets the Special Data Dissemination Standard Plus (“SDDS Plus”) of the IMF relating to coverage, periodicity and timeliness of economic data. The SDDS Plus was created in 2012 as an extension of the existing Special Data Dissemination Standard. By providing comparable economic and financial data, it is designed to improve the transparency of the financial sector and its international interdependencies, and thus contributes to the identification of risks at an early stage. Although adherence by member countries to the SDDS Plus is voluntary, it carries a commitment requiring members to observe the standard and to provide certain information to the IMF about their practices in disseminating economic and financial data.

Source: Bundesbank, Statistics, Sets of indicators, SDDS Plus (Special Data Dissemination Standard) (<https://www.bundesbank.de/en/statistics/sets-of-indicators/sdds-plus/sdds-plus-795798>).

THE ECONOMY

Overview

Since 1945, the Federal Republic's economic system has developed into a social market economy, combining the free initiative of the individual with progressive social principles. The *Grundgesetz* guarantees freedom of private enterprise and private property, provided that these basic rights are not exercised against the public good. The state mainly has a regulatory function in the market economy, setting the general framework of conditions within which market processes take place.

Key Economic Figures

The German economy is one of the world's largest economies, with an annual GDP of EUR 3,867.05 billion in 2022. After a COVID-19 pandemic-induced decrease of 3.7% in 2020, the price-adjusted GDP increased by 2.6% in 2021 and 1.8% in 2022. Thus the German economy managed to recover from the sharp decline experienced during the first year of the pandemic and price-adjusted GDP in 2022 was 0.6% higher than in 2019, the year before the start of the COVID-19 pandemic. Compared to the level of 1991, which represents the first full year after German reunification on October 3, 1990, the price-adjusted GDP increased by 47.0%. The growth in GDP since 1991 has been largely driven by productivity gains, as the price-adjusted GDP per employee has risen by 25.4% since 1991. In calculating the price-adjusted GDP, the Federal Statistical Office (*Statistisches Bundesamt*) uses a chain index based on the previous year's prices. In 2022, the GDP per capita at current prices was EUR 46,149 while the GDP per person employed at current prices was EUR 84,860.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.1.4.

As in many advanced economies, the services sector of the Federal Republic has become the largest contributor to GDP (in terms of gross value added). In 2022, services accounted for 69.3% of gross value added, measured at current prices, compared to 61.9% in 1991. The two most important subsectors were "trade, transport, accommodation and food services," accounting for 17.0% in 2022, compared to 16.1% in 1991, and "public services, education, health," accounting for 18.8% of gross value added in 2022, compared to 15.9% in 1991. The production sector (excluding construction) generated 23.5% of gross value added compared to 30.8% in 1991. Construction contributed 6.0% to gross value added in 2022, compared to 6.0% in 1991, and agriculture, forestry and fishing accounted for 1.2% of gross value added in 2022, compared to 1.2% in 1991.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.2.1.

In 2022, private final consumption expenditure totaled 51.2% of GDP in current prices, gross capital formation amounted to 24.8% and government final consumption expenditure equaled 21.9%. Exports and imports of goods and services accounted for 50.3% and 48.3% of GDP at current prices, respectively. Germany's trade surplus has decreased substantially because of the deterioration of terms of trade as a result of Russia's invasion of Ukraine. In 2022 the trade balance (according to national accounts) showed a surplus equal to 2.1% of GDP (2021: 5.3% of GDP).

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.3.1.

In the spring of 2022, virtually all COVID-19 protection measures were lifted. This contributed to the recovery of the German economy. However, Russia's invasion of Ukraine at the end of February and the subsequent extreme rise in energy prices dampened economic activity. Lasting supply bottlenecks further complicated the situation. As a result, Germany's real GDP declined at the end of the year. Overall, the annual price-adjusted GDP in 2022 was 1.8% higher than in 2021. The GDP adjusted for both price and calendar effects increased by 1.9%. Household final consumption expenditure increased by a price-adjusted 4.3% year on year. Exports increased by 2.9%, while imports rose by 6.0%, all on a price-adjusted basis. The growth contribution of net exports was -1.2 percentage points. Gross fixed capital formation increased by 0.4%, in price-adjusted terms. Government final consumption expenditure increased by 1.2% on a price-adjusted basis.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Tables 2.1.1 and 2.3.2.

The annual average rate of registered unemployment (as computed under the "national definition" of the Federal Employment Agency (*Bundesagentur für Arbeit*)) decreased from 5.7% in 2021 to 5.3% in 2022. Based on the internationally comparable method of calculation promulgated by the International Labour

Organization (“ILO”), which is referred to as the “ILO definition,” the annual average unemployment rate decreased from 3.3% in 2021 to 2.8% in 2022. For an explanation of the differences between the national definition and the ILO definition, see “—Employment and Labor.” Inflation as measured by the percentage change in the national consumer price index (“CPI”) increased to 6.9% in 2022, compared to 3.1% in 2021. General government gross debt stood at EUR 2,563.1 billion at year-end 2022, compared to EUR 2,494.6 billion at year-end 2021.

Sources: Bundesagentur für Arbeit, Statistik der Bundesagentur für Arbeit, Arbeitslosigkeit im Zeitverlauf, Datenstand: Dezember 2022 (https://statistik.arbeitsagentur.de/Statistikdaten/Detail/Aktuell/iii4/laender-heft/laender-heft-dl-0.xlsx?__blob=publicationFile&v=5); Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.1.10 and 2.1.13; Deutsche Bundesbank, Time series BBK01.BJ9059: General government debt as defined in the Maastricht Treaty - Germany - overall (https://www.bundesbank.de/dynamic/action/en/statistics/time-series-databases/time-series-databases/745582/745582?listId=www_v27_web011_21a&tsId=BBK01.BJ9059).

The following table shows selected key economic figures for the Federal Republic for each of the years indicated.

KEY ECONOMIC FIGURES

	2022	2021	2020	2019	2018
	(EUR in billions, unless otherwise indicated)				
GDP - at current prices	3,867.1	3,601.8	3,405.4	3,473.3	3,365.5
(change from previous year in %)	7.4	5.8	-2.0	3.2	3.0
GDP - price-adjusted, chain-linked index (2015=100), not adjusted for calendar effects	107.8	105.9	103.2	107.1	106.0
(change from previous year in %)	1.8	2.6	-3.7	1.1	1.0
GDP - price-adjusted, chain-linked index (2015=100), adjusted for calendar effects	107.6	105.6	103.0	107.3	106.2
(change from previous year in %)	1.9	2.6	-4.1	1.1	1.0
Unemployment rate (ILO definition) (in %) (1)	2.8	3.3	3.3	2.8	3.0
Inflation (year-to-year change in the consumer price index (CPI) in %)	6.9	3.1	0.5	1.4	1.8
Balance of payments - current account	162.3	278.7	240.2	283.8	267.6
General government gross debt (2)	2,563.1	2,494.6	2,399.9	2,068.8	2,083.4

(1) Unemployed persons, available and seeking work.

(2) Definition according to Maastricht Treaty.

Sources: Statistisches Bundesamt, Fachserie 18, Reihe 1.2 - 4. Vierteljahr 2022 (February 2023), Tables 1.1 and 1.11; Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.1.10; Deutsche Bundesbank, Balance of payments statistics 13-04-2023, Table I. Major items of the balance of payments (<https://www.bundesbank.de/resource/blob/810958/9eefcfe025b012f92636bdf4e196cf05/mL/i-wichtige-posten-data.pdf>); Deutsche Bundesbank, Time series BBK01.BJ9059: General government debt as defined in the Maastricht Treaty - Germany - overall (https://www.bundesbank.de/Navigation/EN/Statistics/Time_series_databases/Macro_economic_time_series/its_details_value_node.html?tsId=BBK01.BJ9059&listId=www_v27_web011_02a).

Economic Outlook

The Germany economy proved robust against the economic consequences of Russia’s invasion of Ukraine in 2022 with a price-adjusted GDP growth of 1.8 % overall. Nevertheless, economic activity suffered a setback at the end of 2022 due to high inflation and its dampening effect on private consumption. In 2023, economic activity is expected to pick up again over the course of the year with inflation rates successively declining, shortages of materials further abating and the global economy gaining some momentum. In its forecast published on April 26, 2023, the Federal Government projects German price-adjusted GDP to rise by 0.4% overall in 2023. The expansion is expected to continue in 2024 with a real GDP growth rate of 1.6%.

The German inflation rate was markedly elevated in 2022 with 6.9% on average (based on the consumer price index) in particular due to strong increases in energy prices. The Federal Government expects the inflation rate to decrease over the course of 2023 as price pressure from producer and import prices is projected to abate. Nevertheless, with 5.9% on average the inflation rate is still expected to be elevated with major contributions from core inflation and food price inflation. For 2024, a decrease of the inflation rate to 2.7% is expected. Given still high inflation rates and previous losses in real disposable income, private consumption is expected to stagnate in 2023 (-0.1%). For 2024, a recovery of private consumption is expected

with lower inflation and rising real incomes (+2.1%). Total gross fixed capital formation is expected to decline by 1.0% in 2023 and increase by 1.3% in 2024. While investment in machinery and equipment is expected to increase by 2.4% in 2023 and by 3.6% in 2024 on the back of the comparatively high order backlog in manufacturing, investment in construction is expected to decline by 4.1% in 2023 and by 0.5% in 2024. The construction sector is particularly affected by markedly higher interest rates for real estate loans and higher prices for building materials. Imports are expected to increase only slightly by 0.6% in 2023, given subdued domestic demand, and accelerate in 2024 (+3.5%). With the easing of supply bottlenecks in manufacturing, exports are expected to grow more strongly than imports in 2023 (+1.3%) and to gain further momentum in 2024 (+3.3%). The current account surplus declined markedly to 4.3% of GDP in 2022 due to the primarily energy-price driven deterioration of the terms of trade. Given the decrease in energy prices since their highs in 2022, the current account surplus is expected to increase again to 5.5% of GDP in both 2023 and 2024 – still noticeably below its pre-war level.

The labor market is expected to continue its robust development. The use of short-time work schemes (*Kurzarbeit*) is not expected to play a significant role in 2023 and 2024. Employment is expected to increase further, although the rise is assumed to be slowed down by demographic change. According to the Federal Government's forecast, employment will rise by 0.8% in 2023 and by 0.2% in 2024. The unemployment rate (national definition) increased over the course of 2022 due to the registrations of refugees from Ukraine seeking work. In 2023 and 2024, it is expected to decline again to 5.4% and 5.2%, respectively.

Source: Bundesministerium für Wirtschaft und Klimaschutz, Eckwerte der Frühjahrspjektion 2023, April 26, 2023
(https://www.bmwk.de/Redaktion/DE/Publikationen/Wirtschaft/fruehjahrspjektion-2023.pdf?__blob=publicationFile&v=6).

General Economic Policy

Economic policy in 2022 was shaped by the challenges posed by Russia's invasion of Ukraine and the resulting energy crisis. In recent years, the energy supply of large parts of Europe has been dependent to a considerable extent on the imports of fossil fuels from Russia. Germany was among the countries with the highest dependence. In 2021, Germany obtained 55 percent of the natural gas it consumed domestically from Russia. Half of its demand for hard coal and one-third of its demand for crude oil was covered by imports from Russia. In January 2023 – less than a year after the start of Russia's invasion of Ukraine – Germany managed to meet its energy demands without almost any Russian energy imports. In retrospect, despite the tense situation in the summer and fall of 2022, sufficient supply of natural gas and electricity was never acutely threatened due to government action, entrepreneurial flexibility and the energy conservation efforts of private households.

The Federal Government responded to the short-term challenges with various measures. To immediately stabilize the supply of gas and oil, key energy suppliers were placed under trusteeship and provided with debt and equity capital. This applied in particular to the companies Uniper SE and Securing Energy for Europe GmbH ("SEFE"), previously known as Gazprom Germania, whose insolvency as a result of the loss of Russian gas supplies would have had far-reaching consequences for the European gas markets and are now almost entirely owned by the Federal Government. The filling of gas storage facilities based on clear government requirements also plays a significant role in the continued security of supply in Germany and Europe. For information on KfW's involvement with these measures under special mandates by the Federal Government, see "KfW—Business—Domestic Promotional Business—KfW measures to mitigate the economic impact in Germany of Russia's invasion of Ukraine."

To stabilize the economy during the crisis and cushion undesirable distributional effects, the Federal Government launched broad-based relief packages last year. The three relief packages aim to help companies and private households adjust to the increased price levels by providing more than EUR 95 billion in support. In addition, a comprehensive economic defense shield (*wirtschaftlicher Abwehrschirm*) is intended to cushion rising energy costs and the most severe economic consequences for private households and companies. To this end, the Federal Government is providing extensive funding of up to EUR 200 billion via the reactivation and realignment of the Economic Stabilization Fund (ESF). The defense shield measures are designed to largely preserve incentives to save energy. The gas and heat price brakes, which began to take effect in January 2023, aim to provide private households as well as small and medium-sized enterprises with economic security. Alongside the gas and heat price brakes, the electricity price brake is a second key instrument used to temporarily cushion high burdens related to price increases for energy. In addition, the Federal Government adopted the Inflation Compensation Act (*Inflationsausgleichsgesetz*), which seeks to dampen the effects of increased inflation, among others, by mitigating bracket creep (*kalte Progression*) of personal tax rates and by increasing child benefits.

Governmental measures to address the distributional effects of high inflation, among others, include: An increase in the general minimum wage to EUR 12 per hour, which has provided substantial improvement to around 6.2 million employees since October 1, 2022, and is helping to reduce wage inequality; an expansion of housing benefits; an increase in transfers through the new so-called citizen's income (*Bürgergeld*); and a permanent introduction of a discounted Germany wide ticket for local public transport, among other measures.

Inflation in Germany in 2022 was mainly attributable to supply-side shortages. In addition to the loss of Russian energy supplies and the associated replacement costs, supply bottlenecks resulting from the COVID-19 pandemic continued to contribute to price dynamics, albeit to a lesser extent. The Federal Government is therefore focusing its economic and fiscal policy for 2023 primarily on the medium- and long-term challenges facing the German economy and is aiming for a differentiated supply-side policy agenda. To modernize Germany, the Federal Government intends to further improve the framework conditions for start-ups, investment and innovation, by fundamentally increasing the availability of private capital for investment and further facilitating young companies' and start-ups' access to venture capital. The Federal Government also intends to reduce bureaucracy and render governmental administration more agile and digital. Against the background of Germany's initial situation in terms of energy policy, the Federal Government believes that maintaining Germany's competitiveness as an industrial location in 2023 is of particular importance.

The Federal Government's supply side policy aims to follow the requirements of a transformation towards carbon-neutral prosperity and not to stand in the way of the preservation of biodiversity. Accordingly, the Federal Government pursues a targeted supply policy by means of both market-based instruments and specific regulatory frameworks. Recognizing climate protection as a fundamental global challenge, 197 states at the World Climate Conference in Paris in 2015, including Germany, committed to limiting global warming to well below 2°C, preferably to 1.5°C, and to achieving greenhouse gas neutrality worldwide by the second half of the century. At the national level, the Federal Climate Protection Act (*Bundes-Klimaschutzgesetz*, KSG) provides the central legal framework for climate protection policy in Germany. In terms of greenhouse gas reduction targets, the KSG prescribes a reduction target of at least 65% for 2030 compared to 1990 levels, an interim reduction target of at least 88% for 2040 and greenhouse gas neutrality by 2045; after 2050, negative emissions are to be achieved across all sectors. To this end, the Federal Government has adopted a climate protection program for the period until 2030. The program provides for measures in all sectors and consists of four elements: a more comprehensive pricing of CO₂, support programs and further incentives for CO₂ savings, relief for citizens and the economy, and regulatory measures that will demonstrate their effectiveness by 2030 at the latest.

To avert the risk of stagflation, i.e., the simultaneous appearance in the economy of slow growth, high unemployment, and rising prices, a rapid expansion in the supply of energy is required. The Federal Government has significantly improved the conditions for an accelerated expansion of renewable energies. For example, in the case of solar energy and onshore wind, larger and more binding land use designations have been implemented and measures to accelerate grid expansion were taken. Furthermore, the Federal Government has been able to largely replace fossil energy imports from Russia in a timely manner – for example, through the consistent expansion of the LNG infrastructure, new supply relationships and the temporary use of existing coal-fired and nuclear power plants. In addition, numerous investment obstacles to the accelerated expansion of renewable energies have been removed with two legislative packages, among other things. The Federal Government believes that private-sector investment in new technologies is of central importance to achieve increasingly decarbonized production and thus aims to support such investments by providing an adequate framework and targeted support measures, such as carbon contracts, which intend to offset the additional costs of climate-friendly production processes compared with conventional processes for companies from energy intensive industries, and measures to ramp up hydrogen markets.

The events of 2022 have underscored the need for the EU and its Member States to adjust their economic and financial policies to geopolitical developments and to prevent risks arising from economic dependencies. The Federal Government, together with other Member States, has been working for years to strengthen EU-wide technological sovereignty. For example, several important projects in the common European interest have been launched to strengthen individual key technologies. Within the framework of the European Chips Act, the Federal Government is now laying an important foundation for expanding research and development as well as production capacities in semiconductor technologies in Germany. In view of the need to strengthen the resilience of the German and European economy, particularly through the diversification of supply chains, the Federal Government is also setting new priorities in its trade policy, including with respect to efforts to reform the WTO, the entry into, or negotiation of, EU trade agreements with high socio-ecological standards, or in investment protection.

The German labor market is proving to be resilient even in the wake of the current energy crisis. Never before have more people been employed in Germany than in 2022, but skilled workers are increasingly in short supply. The Federal Government's goal is therefore to secure and expand the skilled labor base in Germany. To this end, the Federal Government has adopted a skilled labor strategy and a set of comprehensive measures to increase skilled labor immigration from third countries.

Demographic and technological changes require the state to modernize and digitize its organization and processes. Key measures in the Federal Government's digital strategy include accelerating the roll-out of high-performance fiber-optic and mobile communication infrastructures, the widespread availability and use of data and data tools and the use of digital identities and networked registers.

The sustainability of the Federal Government's public finances remains crucial to Germany's prospects. In the 2023 federal budget and the 2026 financial plan adopted by the Federal Government, the constitutional "debt brake" rule is expected to be met again after three exceptional years, despite high public investment and extensive crisis management measures. At the same time, significant financial resources are available through special funds, many of which are earmarked for investments in the future. With the establishment of the Climate and Transformation Fund, the Federal Government has placed the financing of important tasks in this area on a predictable foundation. At the same time, the Federal Government is committing EUR 100 billion to strengthen defense capabilities, while the realigned ESF is being employed to finance measures to cushion the impact of the energy crisis.

For further information on the Federal Republic's fiscal situation and prospects, see "—Public Finance—Germany's General Government Deficit/Surplus and General Government Gross Debt" and "—Public Finance—Fiscal Outlook." For information on government measures to stabilize Germany's financial system, see "—Monetary and Financial System—Financial System—German Financial System." For information on government budgets, see "—Public Finance."

Sources: Bundesministerium für Wirtschaft und Klima, Jahreswirtschaftsbericht 2022

(https://www.bmwk.de/Redaktion/DE/Publikationen/Wirtschaft/jahreswirtschaftsbericht-2022.pdf?__blob=publicationFile&v=18); Bundesministerium für Wirtschaft und Energie, Jahreswirtschaftsbericht 2023

(https://www.bmwk.de/Redaktion/DE/Publikationen/Wirtschaft/jahreswirtschaftsbericht-2023.pdf?__blob=publicationFile&v=10).

Gross Domestic Product

The following tables show the structure of the Federal Republic's GDP at current prices by use and origin for each of the years indicated along with changes over the respective preceding period.

STRUCTURE OF GDP – USE

	2022	2021	2020	2019	2018	2022	2021	2020	2019
	(EUR in billions)					(change in %)			
Domestic uses	3,787.5	3,410.2	3,213.8	3,276.9	3,160.2	11.1	6.1	-1.9	3.7
Final private consumption	1,978.9	1,773.8	1,713.5	1,805.5	1,753.4	11.6	3.5	-5.1	3.0
Final government consumption	848.4	797.5	748.0	703.2	669.1	6.4	6.6	6.4	5.1
Gross fixed capital formation	872.3	783.8	736.1	742.4	708.9	11.3	6.5	-0.8	4.7
Machinery and equipment	253.7	229.4	217.5	241.2	235.5	10.6	5.5	-9.8	2.4
Construction	474.6	416.7	384.8	363.5	345.5	13.9	8.3	5.9	5.2
Other products	144.0	137.7	133.8	137.7	127.9	4.6	2.9	-2.8	7.6
Changes in inventories (1)	87.9	55.1	16.1	25.9	28.8	—	—	—	—
Net exports (1)	79.5	191.6	191.7	196.4	205.2	—	—	—	—
Exports	1,946.6	1,693.9	1,464.8	1,621.0	1,592.2	14.9	15.6	-9.6	1.8
Imports	1,867.1	1,502.4	1,273.1	1,424.6	1,386.9	24.3	18.0	-10.6	2.7
Gross domestic product	3,867.1	3,601.8	3,405.4	3,473.3	3,365.5	7.4	5.8	-2.0	3.2

(1) Percentage changes are not presented due to the potentially changing signs of these net positions.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.2 – 4. Vierteljahr 2022 (February 2023), Tables 3.1 and 3.9.

STRUCTURE OF GDP – ORIGIN

	2022	2021	2020	2019	2018	2022	2021	2020	2019
	(EUR in billions)					(change in %)			
Gross value added of all economic sectors	3,498.5	3,258.6	3,088.0	3,129.7	3,032.7	7.4	5.5	-1.3	3.2
Agriculture, forestry and fishing	42.9	30.6	25.6	26.9	23.2	40.0	19.6	-4.9	16.2
Production sector (excluding construction)	820.5	783.2	739.2	781.9	770.9	4.8	5.9	-5.5	1.4
Construction	211.1	179.8	167.3	154.3	148.0	17.4	7.5	8.4	4.2
Trade, transport, accommodation and food services	596.5	516.8	479.0	501.7	483.1	15.4	7.9	-4.5	3.9
Information and communication	169.6	163.8	154.7	152.5	145.9	3.5	5.9	1.4	4.5
Financial and insurance services	124.8	123.2	123.5	121.9	118.5	1.3	-0.3	1.3	2.9
Real estate activities	350.0	342.0	332.6	327.2	319.3	2.3	2.8	1.7	2.5
Business services	402.1	376.4	350.1	359.6	353.8	6.8	7.5	-2.7	1.6
Public services, education, health	656.2	628.4	604.6	583.3	554.5	4.4	3.9	3.6	5.2
Other services	124.8	114.4	111.3	120.3	115.4	9.1	2.8	-7.5	4.2
Taxes on products offset against subsidies on products	368.6	343.2	317.5	343.5	332.7	7.4	8.1	-7.6	3.3
Gross domestic product	3,867.1	3,601.8	3,405.4	3,473.3	3,365.5	7.4	5.8	-2.0	3.2

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.2 – 4. Vierteljahr 2022 (February 2023), Tables 1.14 and 2.1.

Sectors of the Economy

Production Sector

Following German reunification in 1990, industry in the eastern *Länder* (i.e., the territory of the former German Democratic Republic), has undergone a restructuring process. Today, the German production sector is characterized by a balanced mix of small, medium and large enterprises, and is almost entirely privately owned. Measured by its share in value added, approximately 59% of the production sector is geographically concentrated in the western *Länder* of Bavaria, Baden-Württemberg and North Rhine-Westphalia. The main segments of the production sector relate to the manufacturing of motor vehicles, machinery and equipment, electrical and optical equipment, basic metals and fabricated metal products, as well as chemicals and chemical products. In 2022, the production sector's aggregate contribution to gross value added at current prices was 23.5% (excluding construction) and 29.5% (including construction), respectively. Its price-adjusted gross value added (excluding construction) stagnated year-on-year in 2022.

Sources: Volkswirtschaftliche Gesamtrechnungen der Länder, Reihe 1, Länderergebnisse Band 1 (March 2023), Table 2.3; Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Tables 2.2.1 and 2.2.2.

OUTPUT IN THE PRODUCTION SECTOR (1)

(2015 = 100)

	2022	2021	2020	2019
Production sector, total	97.8	98.4	95.0	102.9
Industry (2)	96.2	96.6	92.2	102.2
of which:				
Intermediate goods (3)	99.5	102.7	94.9	101.8
Capital goods (4)	92.1	90.5	88.2	102.6
Durable goods (5)	105.7	103.6	97.6	106.2
Nondurable goods (6)	99.6	99.1	97.2	101.0
Energy (7)	85.1	87.1	84.4	90.4
Construction (8)	112.6	114.3	116.1	112.7

(1) Adjusted for working-day variations.

- (2) Manufacturing sector, unless assigned to the main grouping energy, plus mining and quarrying.
- (3) Including mining and quarrying except energy-producing goods.
- (4) Including manufacture of motor vehicles and components.
- (5) Consumption goods that have a long-term use, such as furniture.
- (6) Consumption goods that have a short-term use, such as food. Including printing and service activities related to printing.
- (7) Electricity, gas, steam and hot water supply, mining and quarrying of energy-producing materials, and especially manufacture of refined petroleum products.
- (8) Comprises the economic classifications "Site preparation" and "Building of complete constructions or parts thereof; civil engineering."

Source: Deutsche Bundesbank, Monatsbericht März 2023, Table XI.2.

Services Sector

As in most other industrialized countries, the services sector, which comprises "trade, transport, accommodation and food services," "information and communication," "financial and insurance services," "real estate activities," "business services," "public services, education, health" as well as "other services," has expanded rapidly in recent years and is currently the largest contributor to gross value added. In 2022, the services sector's aggregate contribution to gross value added at current prices was 69.3%, compared to 61.9% in 1991. Within the services sector, "public services, education, health" represented the largest subsector in terms of contribution to total gross value added at current prices, contributing 18.8% in 2022 after 15.9% in 1991.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.2.1.

Employment and Labor

As economic output increased in 2022, labor market conditions improved further. In 2022, the average unemployment rate according to the national definition was 5.3%, compared to 5.7% in 2021. Under the ILO definition, the average unemployment rate was 2.8% in 2022 compared to 3.3% in 2021. The number of persons resident in Germany who were either employed or self-employed was 45.4 million in 2022 compared to 44.9 million in 2021.

Sources: Bundesagentur für Arbeit, Arbeitslosigkeit im Zeitverlauf: Entwicklung der Arbeitslosenquote (Strukturmerkmale), April 2023, Table 2.1.1 (https://statistik.arbeitsagentur.de/SiteGlobals/Forms/Suche/Einzelheftsuche_Formular.html?nn=1610104&topic_f=alo-zeitreihe-dwo); Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (February 2023), Table 2.1.13.

The following table presents data with respect to employment and unemployment for each of the years indicated. The ILO definition and the national definition of unemployment differ in various ways. Further, the national definition of unemployment is applied to administrative data whereas unemployment according to the ILO is measured using surveys.

EMPLOYMENT AND UNEMPLOYMENT

	2022	2021	2020	2019	2018
Employed (in thousands)–ILO definition	45,431	44,866	44,821	45,133	44,727
Unemployed (in thousands)–ILO definition (1)	1,328	1,536	1,551	1,280	1,367
Unemployment rate (in %)–ILO definition	2.8	3.3	3.3	2.8	3.0
Unemployed (in thousands)–national definition (2)	2,418	2,613	2,695	2,267	2,340
Unemployment rate (in %)–national definition (3)	5.3	5.7	5.9	5.0	5.2

- (1) Unemployed persons, available and seeking work.
- (2) Registered unemployed persons, available and seeking work (but including persons working up to 15 hours per week).
- (3) As a percentage of the total work force (excluding armed forces).

Sources: Bundesagentur für Arbeit, Monatsbericht zum Arbeits- und Ausbildungsmarkt: Dezember und das Jahr 2022, Table 10.1; Statistisches Bundesamt, Fachserie 18, Reihe 1.2 – 4. Vierteljahr 2022 (February 2023), Table 1.11.

The following table presents data with respect to the employment rate broken down by gender and age for 2022.

EMPLOYMENT RATE – BREAKDOWN BY GENDER AND AGE

(Age in years)	2022		
	Total	Men	Women
15 to 19	28.1	30.3	25.8
20 to 24	69.5	71.3	67.5
25 to 29	81.1	84.7	77.9
30 to 34	84.2	89.7	78.4
35 to 39	85.2	90.9	79.3
40 to 44	86.5	90.9	82.1
45 to 49	87.3	90.6	84.2
50 to 54	86.4	89.8	83.6
55 to 59	82.3	86.1	78.6
60 to 64	63.3	67.4	59.3
65 to 69	19.1	22.6	15.8
15 to 64	76.9	80.6	73.1
65 and older	8.4	11.1	6.2
Total	59.8	64.8	54.9

Source: Statistisches Bundesamt, Erwerbsbeteiligung, Erwerbstätige und Erwerbstätigenquote nach Geschlecht und Alter; Ergebnis des Mikrozensus 2022 (<https://www.destatis.de/DE/Themen/Arbeit/Arbeitsmarkt/Erwerbstätigkeit/Tabellen/erwerbstätige-erwerbstätigenquote.html>).

The following table presents data with respect to the structure of employment by economic sector for 2022 and 2012.

STRUCTURE OF EMPLOYMENT – ECONOMIC SECTORS

	2022 (percent of total)	2012
Agriculture, forestry and fishing	1.2	1.5
Production sector (excluding construction)	17.8	19.0
<i>of which: manufacturing</i>	<i>16.4</i>	<i>17.6</i>
Construction	5.8	5.7
Trade, transport, accommodation and food services	22.2	23.1
Information and communication	3.3	2.8
Financial and insurance services	2.4	2.9
Real estate activities	1.0	1.1
Business services	13.7	13.1
Public services, education, health	26.1	23.8
Other services	6.6	7.0
Total (1)	100.0	100.0

(1) Figures may not add up due to rounding.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.2.9.

The following table shows changes in the annual wage level per employee and unit labor costs per hour worked for each of the years indicated.

WAGE TRENDS AND LABOR COSTS

	2022	2021	2020	2019	2018
Gross wages and salaries per employee in EUR	39,985	38,188	36,962	37,005	35,925
Change from previous year in %	4.7	3.3	-0.1	3.0	3.2
Unit labor costs per hour worked Index (2015=100)	116.7	112.5	111.7	108.7	105.4
Change from previous year in %	3.8	0.7	2.8	3.1	3.1

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.2 – 4. Vierteljahr 2022 (February 2023), Tables 2.17 and 2.20.

About one-sixth of the German work force consists of members of unions. The German Trade Union Federation (*Deutscher Gewerkschaftsbund*) serves as an umbrella organization for eight such unions. In 2022, approximately 5.6 million persons were members of a union under the umbrella of the *Deutscher Gewerkschaftsbund*, which is considerably less compared to the 11.8 million members in 1991, the first full year after German reunification. One major reason contributing to the strong decline since 1991 is the significant decline in manufacturing employment in the eastern *Länder* after reunification.

Each member union typically covers employees of an entire industry, regardless of the precise type of work done by those employees (the “one union, one industry” principle). As a result, employers usually deal with only one negotiating partner on the labor side in each specific industry. The unions and employers of each specific industry enter into collective labor agreements (*Tarifverträge*) without government intervention. The collective labor agreements often apply to all employees of a given industry, regardless of whether or not a particular employee is a member of a union, so long as the employer is a member of the relevant association of employers, which is often the case. Despite their binding character, collective labor agreements in many cases contain opt-out clauses (*Öffnungsklauseln*) allowing for company-specific adjustments to be negotiated between the employer and the works council at the specific company. Moreover, there is a range of additional possibilities to deviate from these agreements. Many employers in the eastern *Länder* are not members of employers’ associations, which means that wages are individually negotiated, often resulting in wage levels that are lower than those provided for by the collective labor agreements.

Sources: Deutscher Gewerkschaftsbund, Über uns, DGB Heute, Mitgliederzahlen 2022 (<https://www.dgb.de/uber-uns/dgb-heute/mitgliederzahlen/2020-2029>); Deutscher Gewerkschaftsbund, Mitgliederzahlen 1950-1993 (<https://www.dgb.de/uber-uns/dgb-heute/mitgliederzahlen/1950-1993>); European Trade Union Institute, National Industrial Relations, Countries, Germany, Trade Unions (<https://www.worker-participation.eu/National-Industrial-Relations/Countries/Germany>); Bundeszentrale für politische Bildung, kurz&knapp, Lexika, Handwörterbuch des politischen Systems, Tarifpolitik/Tarifautonomie (<https://www.bpb.de/nachschlagen/lexika/handwoerterbuch-politisches-system/202193/tarifautonomie>).

Social Security, Social Protection, and Social Policy

The comprehensive system of social security and protection in effect in the Federal Republic includes in particular health insurance, long-term care insurance, retirement and disability pensions, participation benefits and benefits for medical rehabilitation, protection against the effects of occupational accidents and diseases by means of the mandatory occupational accident insurance, unemployment benefits, compensation for workers in short-time work schemes (*Kurzarbeit*), family benefits, benefits and rehabilitation for persons with disabilities, allowances to orphans and to single persons with dependents, and the provision of general public assistance to persons in need. The majority of the German population is covered by mandatory statutory pensions and health insurance. Hospitals and institutions caring for children and handicapped persons are operated by municipalities, churches, charitable institutions, and private providers.

Most of these social services are mainly funded through social security contributions from employers and employees, and a smaller part is funded through direct contributions by the Federal Republic, the *Länder*, municipalities and other public institutions, depending notably upon whether the respective social service is provided by an insurance-based system funded through contributions or a social-assistance-like program funded through taxes.

The Federal Republic’s statutory pension insurance system operates on a pay-as-you-go basis, with contributions from current employers and employees funding payments to current retired persons. Generally, most employed and some self-employed and other persons are subject to mandatory insurance in the statutory retirement system. Certain persons, including employed members of particular professions (including some freelance professions) may apply for exemption, while others, as in the case of civil servants, are automatically exempt from mandatory participation in the statutory pension insurance system. Instead, exempted persons have to contribute to professional or public pension schemes or, in the case of civil servants and similar groups, they will benefit from special pension schemes for civil servants. Furthermore, the Retirement Funds Act (*Altersvermögensgesetz*) aims to ensure the long-term viability of the statutory pension insurance system by decreasing payments from the statutory pension insurance while encouraging insured persons to also sign up for designated privately funded or occupational pension schemes, for which certain bonus payments and tax incentives are provided.

Statutory health insurance coverage must remain available to all persons fulfilling the applicable eligibility criteria. Within the statutory health insurance system, insured persons may choose among a large number of statutory health insurance funds that have developed historically. Persons whose gross income exceeds certain thresholds as well as civil servants, self-employed persons and members of certain professions may opt out of the statutory system and choose private health insurance coverage, which, in case of opting-out, is obligatory as well. Contributions to the statutory health insurance system are based solely on the insured person's income situation and are independent of the insured person's gender, age and medical risk. By contrast, contributions towards private health insurance coverage are mainly calculated based on age, medical risk and the desired level of coverage.

In 2022, social security revenue, as shown in the national accounts, amounted to EUR 811.3 billion, and expenditure was EUR 804.7 billion. The social security budget thus incurred a surplus of EUR 6.7 billion in 2022, after a surplus of EUR 4.3 billion in 2021.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 3.4.3.7.

In light of a changing population structure, the Federal Government has already implemented structural reforms of the statutory pension system in order to safeguard the sustainability of the pension system in the long term. In addition, the Federal Republic has implemented reforms of the statutory pension insurance which gradually raise the regular retirement age by two years to the age of 67 since 2012. For example, the 1964 birth cohort will reach the regular retirement age of 67 in 2031.

To increase the sustainability of the health care system, the Federal Republic has implemented several structural reform measures to strengthen competition among providers in order to improve the efficiency and quality of health care services.

Sources: Bundesministerium der Gesundheit, Themen, Krankenversicherung, Finanzierung, Gesundheitsfonds (<https://www.bundesgesundheitsministerium.de/gesundheitsfonds.html>); European Commission, Employment, Social Affairs & Inclusion, Germany - Pensions and other old age benefits (<https://ec.europa.eu/social/main.jsp?catId=1111&intPageId=4554&langId=en>).

International Economic Relations

International economic relations are of major importance to the German economy. In 2022, exports and imports of goods and services amounted to 50.3% and 48.3% of GDP at current prices, respectively. The Federal Republic supports the EU in pursuing a liberal foreign trade policy aimed at dismantling tariffs and other barriers to trade. The responsibility for trade matters (particularly WTO and free trade agreements) in the EU rests with the European Commission. For further information on the EU's responsibility for trade matters, see “—General—The European Union and European Integration—Economic Integration.”

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.3.1.

Because of the openness of the Federal Republic's economy, German growth and employment depend particularly on open markets and foreign trade. Accordingly, the Federal Government supports efforts to reduce trade barriers. The strengthening of the multilateral trading system with the WTO at its center is a priority both for Germany and the EU. Bilaterally, the Federal Government and the European Commission champion ambitious, balanced and comprehensive free trade agreements in order to strengthen the international competitiveness of the European economy and thus growth and employment in Europe, while also contributing to sustainable development. An example of these agreements is the Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada, which was approved by the European Parliament in February 2017. On September 21, 2017, CETA entered into force provisionally, i.e., most of the agreement, with the exception of investment protection, investment market access for portfolio investment and the Investment Court System, is already in force. CETA will take full effect after ratification by all EU Member States. Similarly, in February 2019, a free trade agreement between the EU and Japan came into force (Economic Partnership Agreement), which is intended to remove the majority of duties and regulatory barriers.

Sources: Bundesministerium für Wirtschaft und Energie, Current free trade agreements (<https://www.bmwi.de/Redaktion/EN/Artikel/Foreign-Trade/ongoing-negotiations-on-free-trade-agreements.html>); Bundesministerium für Wirtschaft und Energie, WTO-Welthandelsrunde “Doha Development Agenda” (<https://www.bmwi.de/Redaktion/DE/Artikel/Aussenwirtschaft/wto-doha.html>); Bundesministerium für Wirtschaft und Energie, CETA – Das europäisch-kanadische Wirtschafts- und Handelsabkommen (<https://www.bmwi.de/Redaktion/DE/Dossier/ceta.html>); European Commission, EU trade relationships by country/region, Countries and Regions, Canada, EU-Canada agreement (https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/canada/eu-canada-agreement_en); Bundesministerium für Wirtschaft und Energie, Free Trade Agreements, EU-Japan Free Trade Agreement (<https://www.bmwi.de/Redaktion/EN/Artikel/Foreign-Trade/free-trade-agreement-japan.html>).

Balance of Payments

The Federal Republic typically achieves a surplus in the trading of goods. Traditionally, this surplus has been partially offset by deficits in other fields, such as services and secondary income. In 2022, the current account surplus totaled EUR 162.3 billion, compared to EUR 278.7 billion in 2021, a decrease of EUR 116.4 billion. Thus, the current account surplus decreased by 3½ percentage points to 4¼% of nominal GDP in 2022. The surplus in the trade in goods decreased, the surplus in the trade in services turned into a deficit and the surplus in primary income increased.

Source: Deutsche Bundesbank, Monatsbericht März 2023, Table XII.2, and Chapter Die deutsche Zahlungsbilanz für das Jahr 2022, p. 21.

According to data prepared by the Deutsche Bundesbank, applying the annual averages of a broad monthly indicator of Germany's price competitiveness compared to 60 trading partners based on consumer price indices, Germany's price competitiveness has been relatively stable since 1999, fluctuating within a range of approximately 10% of the average indicator value in the period from 1999 to 2021. In 2022, price competitiveness improved by 2.1% compared to 2021, mainly due to the depreciation of the euro relative to several currencies, including the U.S. dollar, the Chinese yuan and the Swiss franc. However, the influence of variations in the exchange rates should be viewed in light of the fact that the Euro Area Member States account for a major part of German exports (38.4% in 2022).

In 2022, the euro depreciated against the U.S. dollar by 11.0% partly due to a comparatively larger increase in U.S. interest rates. The euro depreciated against the U.S. dollar until October 2022. Since then, the Euro has appreciated by 9.0% until February 2023 due to a surprisingly resilient economy in Europe and the prospects of further interest rate hikes by the ECB.

Source: Deutsche Bundesbank, Monatsbericht März 2023, Tables XII.3, XII.9 XII.11.

The following table shows the Federal Republic's balance of payments for each of the years indicated.

BALANCE OF PAYMENTS (BALANCES)

	2022	2021	2020	2019	2018
	(EUR in millions)				
Current account					
Trade in goods (1)	111,887	194,388	191,031	219,548	221,983
Services (2)	-30,769	4,802	7,418	-13,553	-15,806
Primary income	150,017	138,545	96,014	128,602	112,389
Secondary income	-68,835	-59,046	-54,224	-50,747	-50,958
Total current account	162,300	278,689	240,239	283,849	267,609
Capital account (3)	-18,644	-1,179	-9,120	-3,705	914
Financial account					
Net German investment abroad (increase: +)	320,200	819,754	724,008	270,041	408,427
Net foreign investment in Germany (increase: +)	100,381	571,203	532,536	69,729	165,538
Net financial account					
(net lending: + / net borrowing: -)	219,819	248,551	191,481	200,312	242,889
Net errors and omissions (4)	76,164	-28,959	-39,638	-79,832	-25,634

(1) Including supplementary trade items.

(2) Including the freight and insurance costs of foreign trade.

(3) Including net acquisition/disposal of non-produced non-financial assets.

(4) Statistical errors and omissions, resulting from the difference between the balance on the financial account and the balances on the current account and the capital account.

Sources: Deutsche Bundesbank, Zahlungsbilanzstatistik, Stand vom 15.3.2023, Table I. Wichtige Posten der Zahlungsbilanz (<https://www.bundesbank.de/resource/blob/805258/8a20015437a2b74e29df58f1cfcc4bd9/mL/i-wichtige-posten-data.pdf>); Deutsche Bundesbank, Zahlungsbilanzstatistik, Stand vom 15.3.2023, Table IV. Kapitalbilanz 1. Übersicht a) Insgesamt (<https://www.bundesbank.de/resource/blob/805274/4e758d080ea205b7f4ed1d4683563459/mL/iv-kapitalbilanz-data.pdf>).

Balance of Trade

The following tables show information relating to foreign trade of the Federal Republic for each of the years indicated.

TRADE IN GOODS (1)

	2022	2021	2020	2019	2018
			(EUR in millions)		
Exports of goods	1,550,778	1,365,203	1,189,260	1,309,678	1,290,468
Imports of goods	1,438,891	1,170,815	998,229	1,090,130	1,068,485
Trade balance	111,887	194,388	191,031	219,548	221,983

(1) Including supplementary trade items.

Source: Deutsche Bundesbank, Zahlungsbilanzstatistik, Stand vom 15.3.2023, Table I. Wichtige Posten der Zahlungsbilanz (<https://www.bundesbank.de/resource/blob/805258/8a20015437a2b74e29df58f1cfcc4bd9/mL/i-wichtige-posten-data.pdf>).

In 2022 the Federal Republic's principal export goods were motor vehicles, machinery of all kinds, pharmaceutical and chemical products. The principal import goods were mineral fuels, electronic products, machinery of all kinds and motor vehicles. The Federal Republic has relatively few resources of industrial raw materials. As a result, it largely depends on imports to satisfy its demand for raw materials. This dependence on foreign supplies is particularly significant in the case of metals such as copper, tungsten, niobium, rare earth, rock phosphate, lithium carbonate, bauxite, manganese, titanium, and tin. The Federal Republic currently imports about 76% of its energy requirements, including 98% of its oil and 95% of its natural gas requirements as well as all enriched uranium needed for nuclear energy.

Sources: Statistisches Bundesamt, Statistischer Bericht Außenhandel - Dezember 2022 (February 2023), Tables 51000-05 and 51000-06 (https://www.destatis.de/DE/Themen/Wirtschaft/Aussenhandel/_inhalt.html#_j2teq2o56); Bundesanstalt für Geowissenschaften und Rohstoffe, Deutschland – Rohstoffsituation 2021 (https://www.bgr.bund.de/DE/Themen/Min_rohstoffe/Downloads/rohsit-2021.pdf;jsessionid=CB7D33642DFD8C41CDF89CA9AE06E9EF.internet961?__blob=publicationFile&v=4); Deutscher Bundestag, Abhängigkeit deutscher Unternehmen von Rohstoffimporten, 2022 (<https://www.bundestag.de/resource/blob/922148/cb88309a1d91a8292826377880eab81b/WD-5-110-22-pdf-data.pdf>).

Germany's Current Account Surplus and the Macroeconomic Imbalance Procedure

Within the framework of the MIP, on November 22, 2022, the European Commission published the Alert Mechanism Report 2023, which noted that Germany's large current account surplus has recently decreased substantially, because of the deterioration of terms of trade driven by the adverse external shock of the Russian invasion of Ukraine. Moreover, the report states that core inflation and wage increases in Germany may facilitate euro area rebalancing. Yet, until early 2022, nominal house price growth in Germany has been among the highest in the EU, and house prices are estimated to be overvalued. In the previous round of the MIP, the Commission carried out an in-depth review and concluded that Germany was experiencing macroeconomic imbalances. In the current round of the MIP, the Commission will examine the persistence of imbalances or their unwinding in an in-depth review of Germany.

The Federal Government supports the European Commission in the implementation of the MIP. Together with its European partners, the Federal Government aims to reduce economic imbalances while complying with the rules of the reformed SGP. However, the Federal Government points out that German foreign direct investments abroad increase the current account balance, as does the interest and capital income generated from past foreign direct investments. Furthermore, the current account surplus is the result of market-based decisions by companies and individuals that determine supply and demand. The German economy's specialization in the export of capital goods also plays a key role in the high surplus. The Federal Government has taken a wide range of measures to strengthen domestic demand and increase public and private investment activity, which are expected to have an indirect dampening effect on the current account balance. These measures include the comprehensive stimulus packages which were adopted during the COVID-19 pandemic, including a "package for the future" of around EUR 50 billion for investments in the green and digital transformation, further projects by the Federal Government launched under the EU Recovery Instrument and the various energy crisis-related relief packages for companies and private households. While respecting the autonomy of collective bargaining, the Federal Government is also creating framework conditions for greater collective bargaining coverage and striving to improve the conditions for taking up employment. Furthermore, a one-off increase in the minimum wage from EUR 9.82 to EUR 12.00 was implemented in 2022. As noted by the European Commission, Germany's current account surplus has decreased substantially by 3½ percentage points to 4¼% of GDP in 2022, mainly due to much higher costs for energy imports since Russia's invasion of Ukraine. Moreover, the planned increase in military spending is expected to generate both higher domestic and import demand. In addition, structural changes such as the significant investments in sustainable transformation, the aging of the population and the reorganization of supply chains are also likely to dampen the current account surplus in the medium and long term.

For general information on the MIP, see “—General—The European Union and European Integration—Monetary Integration—EU Economic Governance—Macroeconomic Imbalance Procedure.”

Sources: European Commission, Report from the Commission to the European Parliament, the Council, the European Central Bank and the European Economic and Social Committee, Alert Mechanism Report 2023, dated November 22, 2022 (https://commission.europa.eu/system/files/2022-11/COM_2022_781_1_EN.pdf); European Commission, Economy and fiscal governance, Macroeconomic imbalance procedure (https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/macroeconomic-imbalance-procedure_en); Bundesrat, Drucksache 125/23, Unterrichtung durch die Bundesregierung, Nationales Reformprogramm 2023 (https://www.bundesrat.de/SharedDocs/drucksachen/2023/0101-0200/125-23.pdf?__blob=publicationFile&v=1); Bundesministerium der Finanzen, Monatsbericht des BMF März 2017, Analysen und Berichte, Der deutsche Leistungsbilanzsaldo – Entwicklung und wirtschaftspolitische Implikationen (<https://www.bundesfinanzministerium.de/Monatsberichte/2017/03/Inhalte/Kapitel-3-Analysen/3-2-Der-deutsche-Leistungsbilanzsaldo.html>).

COMPOSITION OF EXPORTED AND IMPORTED GOODS

	2022 (1)	
	Imports (Percent of total)	Exports
Products of agriculture and hunting	2.5	0.7
Products of forestry	0.1	0.1
Fish and products of fishing	0.1	0.0
Coal and lignite	0.8	0.0
Crude petroleum and natural gas	8.8	0.6
Metal ores	0.8	0.0
Other mining and quarrying products	0.1	0.1
Food products	4.2	4.5
Beverages	0.5	0.4
Tobacco products	0.2	0.2
Textiles	0.9	0.8
Wearing apparel	2.9	1.5
Leather and related products	1.2	0.8
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	0.7	0.7
Paper and paper products	1.2	1.6
Coke and refined petroleum products	2.4	1.7
Chemicals and chemical products	9.2	10.3
Basic pharmaceutical products and pharmaceutical preparations	5.5	7.7
Rubber and plastic products	2.7	3.5
Other non-metallic mineral products	0.9	1.2
Basic metals	6.3	5.1
Fabricated metal products, except machinery and equipment	2.7	3.2
Computer, electronic and optical products	9.9	8.4
Electrical equipment	6.8	6.9
Machinery and equipment not elsewhere classified	6.9	13.2
Motor vehicles, trailers and semi-trailers	8.8	15.5
Other transport equipment	2.3	2.9
Furniture	1.1	0.8
Energy	0.8	1.1
Other goods	9.0	6.3
Total	100.0	100.0

(1) Preliminary data.

Source: Statistisches Bundesamt, Statistischer Bericht Außenhandel – Dezember 2022 (February 2023), Tables 51000-05 and 51000-06 (https://www.destatis.de/DE/Themen/Wirtschaft/Aussenhandel/_inhalt.html#_j2teq2o56); calculation of percentages by KfW based on import and export values in EUR thousands, respectively; figures may not add up to total due to rounding.

FOREIGN TRADE (SPECIAL TRADE) BY GROUPS OF COUNTRIES AND COUNTRIES (1)

	2022	2021	2020
	(EUR in millions)		
Exports to:			
Total	1,575,739	1,379,346	1,206,928
<i>of which:</i>			
United States	156,110	121,980	103,476
China (2)	106,859	103,564	95,840
France	116,012	102,741	90,910
The Netherlands	110,658	101,050	84,579
Italy	87,437	75,526	60,634
Austria	88,893	72,385	60,118
United Kingdom	73,808	65,002	67,086
Switzerland	70,605	60,638	56,265
Belgium/Luxembourg	69,531	58,080	48,824
New industrial countries and emerging markets of Asia (3)	63,265	55,295	50,590
Spain	48,887	43,932	37,618
Japan	20,512	18,245	17,396
Imports from:			
Total	1,494,826	1,204,050	1,026,502
<i>of which:</i>			
China (2)	191,348	142,964	117,373
The Netherlands	122,909	105,113	87,024
United States	91,738	72,316	67,694
Italy	72,360	65,389	53,906
France	69,618	61,921	56,364
New industrial countries and emerging markets of Asia (3)	70,240	55,441	48,222
Belgium/Luxembourg	66,337	55,726	39,584
Switzerland	55,254	49,247	45,556
Austria	57,665	47,492	40,454
Spain	37,388	34,180	31,281
United Kingdom	37,545	32,245	35,018
Japan	25,231	23,477	21,427

(1) Exports (f.o.b.) by country of destination, imports (c.i.f.) by country of origin. Special trade consists mainly of goods that are imported into the Federal Republic for use, consumption, adaptation or processing, as well as goods that are produced, manufactured, adapted or processed in the Federal Republic and subsequently exported.

(2) Excludes Hong Kong.

(3) Includes Brunei Darussalam, Hong Kong, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan and Thailand.

Source: Deutsche Bundesbank, Monatsbericht März 2023, Table XII.3.

Foreign Direct Investment

The following table presents data with respect to foreign direct investment stocks at year-end 2020.

FOREIGN DIRECT INVESTMENT STOCKS AT YEAR-END 2020

	Outward (1)	Inward (2)
	(EUR in billions)	
Total (3)	1,315.5	593.9
<i>Selected countries and regions</i>		
European Union	444.6	379.1
<i>of which: European Monetary Union</i>	314.3	361.8
United Kingdom (4)	124.3	37.2
Switzerland	47.6	46.5
Russia	22.7	1.7
United States	352.5	51.2

Canada	18.8	1.6
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	Outward (1) (EUR in billions)	Inward (2)
Central America	24.6	13.2
South America	29.1	2.0
Asia	192.7	45.1
<i>of which: China</i>	89.5	3.7
<i>of which: India</i>	18.6	0.5
<i>of which: Japan</i>	16.6	27.3
Australia	17.8	3.8
Africa	11.6	1.5
<i>Selected economic sectors of investment object</i>		
Manufacturing	443.8	138.9
<i>of which: Chemicals and chemical products</i>	88.2	21.6
<i>of which: Pharmaceutical products</i>	34.1	19.3
<i>of which: Machinery and equipment</i>	44.7	16.9
<i>of which: Motor vehicles, trailers and semi-trailers</i>	101.8	3.3
Electricity, gas, steam and air conditioning supply	40.6	37.7
Wholesale and retail trade; repair of motor vehicles and motor cycles	223.1	59.7
Information and communication	54.6	38.2
Financial and insurance activities	301.6	207.0
Real estate activities	56.7	33.4
Professional, scientific and technical activities	87.8	41.9

(1) German foreign direct investment abroad.

(2) Foreign direct investment in Germany.

(3) Primary and secondary direct investment (consolidated).

(4) The United Kingdom exited the European Union on January 31, 2020.

Source: Deutsche Bundesbank, Direktinvestitionsstatistiken, II. Bestandsangaben über Direktinvestitionen (nach dem Erweiterten Richtungsprinzip) (<https://www.bundesbank.de/de/statistiken/ausseiwirtschaft/direktinvestitionen/direktinvestitionsstatistiken-804078>), Tables II.1.b, II.2.b.

MONETARY AND FINANCIAL SYSTEM

The ESCB and the Eurosystem

The ESCB comprises the ECB and the national central banks of all EU Member States, while the Eurosystem consists only of the ECB and the national central banks of the Euro Area Member States.

The Eurosystem is responsible for the single monetary policy for the euro area. Its decision-making bodies are the Governing Council and the Executive Board of the ECB. The national central banks of the EU Member States that are not part of the Eurosystem are represented in the General Council of the ECB, but have no voting right in the decision-making process, particularly with respect to monetary policy. The ESCB's primary objective is to maintain price stability. Without prejudice to this objective, the ESCB supports the general economic policies of the EU.

The Deutsche Bundesbank – Germany's national central bank within the ESCB – has the responsibility of implementing the single monetary policy in Germany and continues to perform various other tasks, including operating cashless payment systems, cash management and playing an important role in banking and financial market supervision, as further described below under the caption “— Financial System.”

Sources: European Central Bank, Annual Report 2016, pages 101-107 (<https://www.ecb.europa.eu/pub/pdf/annrep/ar2016en.pdf>); European Central Bank, About, Organisation: ECB, ESCB and the Eurosystem (<https://www.ecb.europa.eu/ecb/orga/escb/html/index.en.html>); Deutsche Bundesbank, Tasks (<https://www.bundesbank.de/en/tasks>).

Monetary Policy

Monetary Policy Instruments of the ESCB and the ECB

To achieve its operational goals, the ESCB conducts open market operations, offers standing facilities and requires credit institutions to maintain minimum reserves in accounts with the ESCB. Open market operations play an important role in the ESCB's monetary policy for the purposes of steering interest rates and managing the liquidity situation in the market. Available open market operations are reverse transactions, outright transactions, the issuance of debt certificates or foreign exchange swaps, and the collection of fixed-term deposits. Standing facilities are designed to provide or absorb overnight liquidity, and the imposition of minimum reserve requirements allows the ESCB to stabilize money market interest rates, create (or enlarge) a structural liquidity shortage and possibly contribute to the control of monetary expansion. In addition the ECB also provides forward guidance, i.e., it provides information about its future monetary policy intentions, based on its assessment of the outlook for price stability. In response to the global economic and financial crisis, the European sovereign debt crisis and the COVID-19 pandemic, the ESCB also employed certain non-standard policy instruments, such as asset purchase programs and longer-term refinancing operations.

Source: European Central Bank, Monetary Policy: The Eurosystem's instruments (<https://www.ecb.europa.eu/mopo/implement/html/index.en.html>).

Monetary Policy Strategy and Prices

The ECB presented its revised monetary strategy in July 2021, its first revision since 2003. Its primary goal is to maintain medium-term price stability, which is defined as a year-on-year increase in the harmonized index of consumer prices for the euro area of 2%. The 2% target is symmetric. This means that the ECB considers negative and positive deviations from the target to be equally undesirable. When the economy is operating close to the lower bound on nominal interest rates, particularly forceful or persistent monetary policy action may be required to prevent negative deviations from the inflation target from becoming entrenched. The new strategy considers formerly unconventional measures such as asset purchasing programs to be part of its monetary tool kit for these purposes. The Governing Council of the ECB seeks to achieve price stability over the medium term. This allows for short-term deviations of inflation from its target, provides the necessary flexibility and makes it possible to take other considerations into account. The medium-term orientation indicates the commitment to provide an adequate margin to avoid the risk of deflation. The stability-oriented monetary policy strategy of the Eurosystem used by the ECB to achieve this goal is based on two independent analyses: (1) analysis and assessment of short- to medium-term risks to price stability (economic analysis); and (2) assessment of medium- to long-term monetary and financial developments (monetary and financial analysis).

Source: European Central Bank, Monetary Policy: Strategy (<https://www.ecb.europa.eu/mopo/strategy/html/index.en.html>).

The following table shows price trends in Germany for the periods indicated.

PRICE TRENDS

	2022	2021	2020	2019	2018
		(change from previous year in %)			
Harmonized index of consumer prices (HICP)	8.7	3.2	0.4	1.4	1.9
Consumer price index (CPI) (1)	6.9	3.1	0.5	1.4	1.8
Index of producer prices of industrial products sold on the domestic market (2)	32.9	10.5	-1.0	1.1	2.6

(1) Figures for all years up to and including 2020 currently not available due to changeover to the base year 2020.

(2) Excluding value-added tax.

Sources: Statistisches Bundesamt, Preise, Verbraucherpreisindizes, Harmonisierter Verbraucherpreisindex, Jahresdurchschnitte, Veränderung zum Vorjahr (<https://www.destatis.de/DE/Themen/Wirtschaft/Preise/Verbraucherpreisindex/Tabellen/Harmonisierter-Verbraucherpreisindex.html>); Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 2.1.10; Deutsche Bundesbank, Monatsbericht Dezember 2022, Table XI.7; Deutsche Bundesbank, Monatsbericht Februar 2023, Table XI.7.

Official Foreign Exchange Reserves

The following table shows the breakdown of the Federal Republic's official foreign exchange reserves as of the end of the years indicated.

OFFICIAL FOREIGN EXCHANGE RESERVES OF THE FEDERAL REPUBLIC (1)

	As of December 31				
	2022	2021	2020	2019	2018
	(EUR in millions)				
Gold	184,036	173,821	166,904	146,562	121,445
Special drawing rights	48,567	46,491	14,014	14,642	14,378
Foreign currency balances	34,404	32,649	30,066	32,039	31,796
Reserve position in the IMF	9,480	8,426	8,143	6,051	5,518
Total	276,488	261,387	219,127	199,295	173,138

(1) External position of the Deutsche Bundesbank in the EMU. Assets and liabilities vis-à-vis all EMU member countries and non-EMU member countries.

Source: Deutsche Bundesbank, Monatsbericht Februar 2023, Table XII.7.

The Federal Republic's foreign reserve assets are managed by the Deutsche Bundesbank. The Euro Area Member States have transferred foreign reserve assets to the ECB in an aggregate amount equivalent to approximately EUR 40.3 billion, consisting of foreign currency reserves and gold. The ECB manages the foreign reserve assets transferred to it. The foreign reserve assets not transferred to the ECB continue to be held and managed by the national central banks of the Euro Area Member States. In order to ensure consistency within the single monetary and foreign exchange policies of the EMU, the ECB monitors and coordinates market transactions conducted with those assets.

Sources: European Central Bank, Annual Report 1998, page 74 (<https://www.ecb.int/pub/pdf/annrep/ar1998en.pdf>); European Central Bank, Annual Accounts 2022, 2.1 Balance Sheet as at 31 December 2022 (<https://www.ecb.europa.eu/pub/annual/annual-accounts/html/ecb.annualaccounts2022~ee9329bf6f.en.html#toc14>).

External Positions of Banks

The following table shows the external assets and liabilities of the Deutsche Bundesbank and the banks (monetary financial institutions) of the Federal Republic as of the end of each of the years indicated.

EXTERNAL FINANCIAL ASSETS AND LIABILITIES BY SECTOR

	2022	2021	2020	2019	2018
	(EUR in billions)				
Deutsche Bundesbank					
Assets	1,617.1	1,592.8	1,429.2	1,161.0	1,210.0
<i>of which: clearing accounts within ESCB (1)</i>	1,269.1	1,260.7	1,136.0	895.2	966.2
Liabilities (2)	919.4	1,009.5	781.3	663.3	770.5
Net position	697.6	583.3	647.9	497.7	439.5
Banks					
Loans to foreign banks	1,151.3	1,100.7	1,024.3	1,064.2	1,014.1
Loans to foreign non-banks	913.7	871.2	822.8	795.3	762.0
Loans from foreign banks	998.4	914.6	761.2	680.6	643.1
Loans from foreign non-banks	370.3	288.2	258.5	229.8	231.5

(1) Consists mainly of net claims from the interbank payment system for the real-time processing of cross-border transfers throughout the EMU (TARGET2).

(2) Including estimates of currency in circulation abroad.

Source: Deutsche Bundesbank, Monatsbericht März 2023, Tables IV.4 and XII.7.

Foreign Exchange Rates and Controls

The euro is a freely convertible currency. Since its introduction in 1999, the euro has become the second most widely used currency internationally. Currency transactions do not require licenses or other permissions. Capital market transactions are not subject to any license or similar requirements. Gold may be imported and exported freely, subject only to the levy of VAT on some transactions.

Sources: International Monetary Fund, *Selected Decisions and Selected Documents of the IMF, Forty-First Issue—Freely Usable Currencies*, Prepared by the Legal Department of the IMF, as updated July 31, 2020 (https://www.imf.org/external/pubs/ft/sd/2021/41st_Sel_Dec_EN_Web_FINAL.pdf); Bank for International Settlements, *Triennial Central Bank Survey, Foreign exchange turnover in April 2019, September 2019, Table "Currency distribution of OTC foreign exchange turnover"*, p. 10 (https://www.bis.org/statistics/rpfx19_fx.pdf).

The following table shows the annual average exchange rates for selected currencies in relation to the euro for the years indicated.

ANNUAL AVERAGE EXCHANGE RATES OF THE EURO (1)

	2022	2021	2020	2019	2018
U.S. dollars per euro	1.0530	1.1827	1.1422	1.1195	1.1810
Pound sterling per euro	0.85276	0.85960	0.88970	0.87777	0.88471
Japanese yen per euro	138.03	129.88	121.85	122.01	130.40
Swiss franc per euro	1.0047	1.0811	1.0705	1.1124	1.1550
Chinese yuan per euro	7.0788	7.6282	7.8747	7.7355	7.8081

(1) Calculated from daily values.

Source: Deutsche Bundesbank, Monatsbericht Februar 2023, Table XII.9.

Financial System

German Financial System

Overview. As of January 31, 2023, 1,384 monetary financial institutions in Germany reported an aggregate balance sheet total of EUR 10,651.1 billion to the Deutsche Bundesbank. According to the Deutsche Bundesbank's classification, these institutions included:

- 241 commercial banks, with an aggregate balance sheet total of EUR 4,848.5 billion;
- 360 savings banks, with an aggregate balance sheet total of EUR 1,558.2 billion;

- the six regional institutions of those savings banks, including DekaBank Deutsche Girozentrale (the central asset managing institution of the German savings banks) and five *Landesbanken* (German public law financial institutions traditionally focusing on the banking business for and in the Land in which they operate), with an aggregate balance sheet total of EUR 970.8 billion;
- 18 special-purpose credit institutions, including KfW, KfW IPEX-Bank, promotional banks of the federal states (*Landesförderinstitute*), and, since July 2016, DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main (DZ Bank), the only remaining central institution of German credit cooperatives, with an aggregate balance sheet total of EUR 1,624.7 billion;
- 733 credit cooperatives, with an aggregate balance sheet total of EUR 1,164.4 billion;
- 8 mortgage banks, with an aggregate balance sheet total of EUR 224.9 billion;
- 18 building and loan associations, with an aggregate balance sheet total of EUR 260.0 billion; and
- 138 subsidiaries and branches of foreign banks located in the Federal Republic with an aggregate balance sheet total of EUR 2,422.0 billion. These institutions, which are majority-owned by foreign banks, are also included in the totals of the other categories of banks listed above.

Source: Deutsche Bundesbank, *Monatsbericht März 2023*, Table IV.2.

The German Banking Act (*Kreditwesengesetz*, or “KWG”) currently regulates all banks except for the Deutsche Bundesbank and KfW (although it does regulate KfW IPEX-Bank). Many important provisions of the KWG have become applicable by analogy to KfW with effect from January 1, 2016. For more information on the application of the KWG to KfW, see “KfW—General—Supervision and Regulation—Regulation.” German commercial banking institutions operate as “universal” banks and are not restricted by law or otherwise from offering a complete range of diverse financial services.

Supervision. The Federal Financial Supervisory Authority (*Bundesanstalt für Finanz-dienstleistungsaufsicht*, or “BaFin”) is responsible for the integrated supervision of financial services. Its primary objective is to ensure the proper functioning, stability and integrity of Germany as a financial center in the context of European integration and international cooperation, as well as to strengthen collective consumer protection through its regulatory actions. The BaFin, which is subject to the legal and technical oversight of the Federal Ministry of Finance, operates exclusively in the public interest. It helps to ensure the ability of banks, financial services institutions and insurance companies to meet their payment obligations (solvency supervision), and it also enforces standards of professional conduct aimed at preserving investors’ trust in the financial markets (market supervision). In addition, the BaFin has an investor protection role in that it seeks to prevent unauthorized financial business from being carried out.

The Deutsche Bundesbank is closely involved in the ongoing supervision of credit institutions by the BaFin and has been assigned a substantial number of the ongoing operational tasks in banking supervision. Furthermore, the German Federal Agency for Financial Market Stabilization (*Bundesanstalt für Finanzmarktstabilisierung*, or “FMSA”) supervises two wind-up institutions, Erste Abwicklungsanstalt and FMS Wertmanagement, as well as Portigon AG (the legal successor of former Landesbank WestLB which is in the process of being wound-up), all of which were founded under its auspices in order to stabilize the financial market (see “—Wind-up Institutions”).

In November 2014, the Single Supervisory Mechanism (“SSM”) – as one of the pillars of the Banking Union – became operational. Under the SSM, the ECB is the central prudential supervisor of financial institutions in the euro area as well as in non-euro area EU Member States that choose to join the SSM. The ECB directly supervises the most significant banks, while the national supervisors continue to monitor the remaining banks. The ECB and the national supervisors work closely together to ensure the banks’ compliance with EU banking regulations and to be able to address issues early on.

In order to facilitate the timely identification of risks to financial stability, the Financial Stability Committee (*Ausschuss für Finanzstabilität*), which consists of representatives of the Federal Ministry of Finance, the Deutsche Bundesbank and BaFin, was established in March 2013 based on the Financial Stability Act (*Gesetz zur Überwachung der Finanzstabilität, Finanzstabilitätsgesetz*). On basis of the Financial Stability Act and due to its macroeconomic and financial market expertise, the Deutsche Bundesbank is responsible for contributing towards safeguarding financial stability and tasked with analyzing all relevant factors in order to

identify threats to financial stability. If appropriate, the Deutsche Bundesbank may propose and submit warnings or recommendations for corrective measures to the Financial Stability Committee, which may pass resolutions with respect thereto and publish them if appropriate. The recipients of such warnings or recommendations are required to report on the implementation of corrective measures. In addition, the Financial Stability Committee is tasked with discussing issues relevant for financial stability, coordinating and strengthening the cooperation of its members during times of crisis, discussing how to deal with warnings or recommendations issued by the European Systemic Risk Board (“ESRB”) and reporting to the German Bundestag on a yearly basis.

Sources: Bundesministerium der Justiz, Gesetz über das Kreditwesen (<https://www.gesetze-im-internet.de/kredw/index.html>); Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin, Functions & history (https://www.bafin.de/EN/DieBaFin/AufgabenGeschichte/aufgabengeschichte_node_en.html); Deutsche Bundesbank, Tasks, Banking supervision (<https://www.bundesbank.de/en/tasks/banking-supervision>); Bundesanstalt für Finanzdienstleistungsaufsicht, Aufsichtsrichtlinie—Richtlinie zur Durchführung und Qualitätssicherung der laufenden Überwachung der Kredit- und Finanzdienstleistungsinstitute durch die Deutsche Bundesbank (Aufsichtsrichtlinie), May 21, 2013, revised on December 19, 2016 (https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Aufsichtsrecht/Richtlinie/rl_130521_aufsichtsrichtlinie.html); Bundesanstalt für Finanzdienstleistungsaufsicht, Act on the Strengthening of German Financial Supervision, January 18, 2013 (https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Fachartikel/2013/fa_bj_2013_01_finstabg_en.html); Bundesanstalt für Finanzmarktstabilisierung (FMSA): Federal Agency for Financial Market Stabilisation (<https://www.fmsa.de/en/>); Portigon AG: Unternehmensinformationen (<https://www.portigon.de/portigon-ag/unternehmensinformationen.html>); Deutsche Bundesbank, Macroprudential surveillance by the G-FSC (<https://www.bundesbank.de/en/tasks/financial-and-monetary-system/financial-and-monetary-stability/macroprudential-surveillance-g-fsc-macroprudential-surveillance-by-the-g-fsc-625732>); European Commission: Single supervisory mechanism (https://ec.europa.eu/info/business-economy-euro/banking-and-finance/banking-union/single-supervisory-mechanism_en).

Bank Recovery and Resolution. Between January 1, 2015, and December 31, 2017, the FMSA (see “—Supervision”) acted as the German national resolution authority for banks. The FMSA was thus responsible for the recovery and resolution of all banks in Germany under the European Bank Recovery and Resolution Directive (“BRRD”) which were not directly supervised by the ECB within the framework of the SSM (see “—European Financial System—European System of Financial Supervision and European Banking Union”). The BRRD was adopted in May 2014 to provide authorities with comprehensive and effective arrangements to deal with failing banks at the national level and with cooperation arrangements to tackle cross-border banking failures. The BRRD includes rules to set up national resolution funds, which must be established by each EU Member State, and it requires banks to prepare recovery plans to overcome financial distress.

On January 1, 2018, FMSA’s duties deriving from its role as the national resolution authority were integrated into the BaFin as a new and independently operating division. At the same time, FMSA’s responsibilities of administering and managing the Financial Market Stabilization Fund (“*Sondervermögen Finanzmarktstabilisierungsfonds*,” or “FMS”) were incorporated into the Federal Republic of Germany – Finance Agency (*Bundesrepublik Deutschland – Finanzagentur GmbH*). The FMS was originally created during the financial crisis on October 17, 2008. Until the Single Resolution Mechanism (“SRM”) became fully operational on January 1, 2016, and functionally replaced the FMS, the latter was responsible for stabilizing German banks by extending guarantees covering the banks’ securities and by granting loans. The stabilization measures provided by the FMS amounted to EUR 14.6 billion in capital injections, while loss compensation payments made to FMS Wertmanagement totaled EUR 9.3 billion.

For more information on the SRM, see “—European Financial System—European System of Financial Supervision and European Banking Union.”

Sources: Deutsche Bundesbank, Glossary: Restructuring Act (<https://www.bundesbank.de/dynamic/action/en/homepage/glossary/729724/glossary?firstLetter=R&contentId=653352#anchor-653352>); European Commission: Bank recovery and resolution (https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-supervision-and-risk-management/managing-risks-banks-and-financial-institutions/bank-recovery-and-resolution_en); Bundesministerium der Finanzen, Verordnung über die Erhebung der Beiträge zum Restrukturierungsfonds für Kreditinstitute (Restrukturierungsfonds-Verordnung—RStruktFV) (https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Verordnungen/2015-07-22-RStruktFV.html); Gesetz zur Neuordnung der Aufgaben der Bundesanstalt für Finanzmarktstabilisierung (FMSA-Neuordnungsgesetz—FMSANeuOG) (https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/18_Legislaturperiode/2016-12-28-FMSA-Neuordnungsgesetz/3-Verkuendetes-Gesetz.pdf?__blob=publicationFile&v=3); Federal Agency for Financial Market Stabilisation: History (<https://www.fmsa.de/en/history/>); Bundesrepublik Deutschland – Finanzagentur GmbH, Financial Market Stabilisation, Financial Market Stabilisation Fund (FMS) (<https://www.deutsche-finanzagentur.de/en/fms/financial-market-stabilisation-fund>); Bundesanstalt für Finanzdienstleistungsaufsicht: Recovery and resolution (https://www.bafin.de/EN/Aufsicht/BankenFinanzdienstleister/Massnahmen/SanierungAbwicklung/sanierung_abwicklung_node_en.html).

Wind-up Institutions. In the wake of the global financial crisis, two wind-up institutions (*Abwicklungsanstalten*) for troubled German banks were established. The first wind-up institution, Erste Abwicklungsanstalt, was established in December 2009 to liquidate a portfolio of EUR 77.5 billion assumed

from WestLB. It assumed a second portfolio consisting of an asset portfolio worth EUR 72.3 billion and a trading portfolio with a market value of approximately EUR 52.1 billion following the restructuring of WestLB. As of September 30, 2022, the combined asset portfolios had been reduced to approximately EUR 13.2 billion.

The second wind-up institution, FMS Wertmanagement, assumed a portfolio of EUR 175.7 billion from Hypo Real Estate Group in October 2010 to support restructuring efforts. In December 2014, FMS Wertmanagement acquired DEPFA Bank plc (“DEPFA”), which, as of December 31, 2013, had consolidated total assets amounting to EUR 49.1 billion from Hypo Real Estate Holding AG. In February 2021, FMS Wertmanagement announced that it is selling wholly-owned DEPFA to BAWAG P.S.K. AG. The transaction was closed in November 2021. As of December 31, 2022, FMS Wertmanagement’s portfolio had a nominal value of EUR 49.6 billion.

Sources: Erste Abwicklungsanstalt, Interim Report 30 September 2022 (https://www.aal.de/wp-content/uploads/2022/11/EAA_Interim-Report_30.09.2022.pdf); FMS Wertmanagement AöR, Investor Präsentation Nov. 2021, updated May 2022 (<https://www.fms-wm.de/de/downloadcenter-de/investoren/presentationen/149-investorenpraesentation/file>); FMS Wertmanagement AöR, Geschäftsbericht 2020 (<https://www.fms-wm.de/de/downloadcenter-de/investoren/berichte/210-geschaeftsbericht-2020-1/file>); FMS Wertmanagement AöR, FMS Wertmanagement sells DEPFA Bank plc to Austria’s BAWAG P.S.K. AG (<https://www.fms-wm.de/en/press/514-fms-wertmanagement-sells-depfa-bank-plc-to-austria-s-bawag-p-s-k-ag>); FMS Wertmanagement AöR, FMS Wertmanagement sells all of its shares in DEPFA BANK plc (<https://www.fms-wm.de/en/press/531-fms-wertmanagement-sells-all-of-its-shares-in-depfa-bank-plc>); Bundesanstalt für Finanzmarktstabilisierung, Gemeinsame Pressemitteilung von FMSA und HRE, press release of May 13, 2014 (https://www.fmsa.de/fileadmin/user_upload_fmsa/Pressemitteilung/PDF/20140513_FMS-WM.pdf); FMS Wertmanagement AöR, Joint Press Release of FMS-WM and HRE: FMS Wertmanagement closes acquisition of DEPFA Bank plc from HRE, press release of December 19, 2014 (<https://www.fms-wm.de/en/press/245-joint-press-release-of-fms-wm-and-hre-fms-wertmanagement-closes-acquisition-of-depfa-bank-plc-from-hre>); European Commission, Commission Decision of 18 July 2011 on State Aid C 15/2009 (ex N 196/2009), which Germany implemented and is planning to implement for Hypo Real Estate (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1490275422217&uri=CELEX:32012D0118>); FMS Wertmanagement, FMS Wertmanagement meets wind-up target and records positive result in demanding market environment, press release of March 29, 2023 (<https://www.fms-wm.de/en/press/551-fms-wertmanagement-meets-wind-up-target-and-records-positive-result-in-demanding-market-environment>).

European Financial System

European System of Financial Supervision and European Banking Union. The European system of financial supervisors became operational on January 1, 2011. At the macro-financial level, the ESRB was established, which provides macro-prudential oversight of the financial system. The ESRB’s role is to monitor and assess potential risks to the stability of the financial system. If necessary, it will issue risk warnings and recommendations for remedial action and will monitor their implementation. The ESRB is currently chaired by the President of the ECB.

At the micro-financial level, three supervisory authorities were established:

- the European Banking Authority (“EBA”);
- the European Insurance and Occupational Pensions Authority; and
- the European Securities and Markets Authority.

The three European Supervisory Authorities (“ESAs”) cooperate with the supervisory authorities of the EU Member States. National authorities are responsible for the day-to-day supervision of individual financial institutions, whereas the ESAs are responsible for ensuring that a single set of harmonized rules and consistent supervisory practices are applied by supervisory authorities of the EU Member States. The ESAs have, for example, the power to settle disputes among national financial supervisors by imposing legally binding mediation and to impose temporary bans on risky financial products or activities.

One of the key elements of the Banking Union, which was established in the wake of the European sovereign debt crisis, is the SSM composed of the ECB and the national supervisory authorities of participating EU Member States. The main aims of the SSM, which became operational in November 2014, are to contribute to the safety and soundness of credit institutions and the stability of the European financial system and to ensure consistent supervision. In its role within the SSM, the ECB directly supervises 115 significant banks and banking groups, which represent almost 82% of the total assets on the aggregated balance sheets of all credit institutions under its supervision. For the remaining banks, the ECB is responsible for setting and monitoring the supervisory standards and for working closely with the national competent authorities in the supervision of these banks.

Another key element of the Banking Union is the SRM which was established by a regulation adopted in July 2014 and became fully operational starting January 1, 2016 with the purpose of ensuring the orderly resolution of failing banks. The SRM consists of a single resolution board (“SRB”), which has broad powers in cases of bank resolution, and the SRF. The SRB is responsible for the planning and resolution phases of cross-border banks and those directly supervised by the ECB, while since January 1, 2015 national resolution authorities are responsible for all other banks under the BRRD. However, the SRB will always be responsible if the resolution of a bank requires access to the SRF. The SRF has been built up over a period of eight years since 2016 and is to reach a target level of at least 1% of the amount of covered deposits of all credit institutions authorized in all the participating EU Member States by the end of 2023. Banks have been making annual contributions to the SRF calculated on the basis of their liabilities, excluding own funds and covered deposits, and adjusted for risk. Companies defined in article 2 paragraph 5 of the EU Capital Requirements Directive IV (CRD IV), including KfW, are not required to contribute to the fund. During the transitional period until 2023 each participating Member State is providing an individual national credit line to the SRB to back its banks’ contributions to the SRF in the event of possible funding shortfalls following resolution cases of its banks. By now all 19 participating EU Member States have signed the Loan Facility Agreements with the SRB, which are the basis for the bridge financing in the form of national credit lines to the SRB. The maximum aggregate amount of the credit lines of the participating EU Member States will amount to just over EUR 60 billion. The repartition key among EU Member States corresponds to the contributions to the SRF, which will have been made by banks in each Member State by the end of 2023. In July 2022, the SRF had grown to approximately EUR 66 billion and its target size for 2023 is expected to be EUR 80 billion. In 2022, the aggregate contribution of German banks to the SRF amounted to 25.4% of total contributions.

In November 2015, and as amended on October 11, 2017, the European Commission proposed a European Deposit Insurance Scheme (“EDIS”) as an additional element of the Banking Union. Since then, work on a technical level has been ongoing. In December 2018, the Euro Summit, the meeting format of the heads of state or government of the Euro Area Member States, created a high-level working group to work on a roadmap for beginning political negotiations on EDIS. In December 2020, the Euro Summit invited the Eurogroup in inclusive format to prepare, on a consensual basis, a stepwise and time-bound work plan on all outstanding elements needed to complete the Banking Union, including deposit insurance and reaffirmed its statement in December 2021. In June 2022 the Eurogroup in inclusive format agreed as an immediate step that work on the Banking Union should focus on strengthening the common framework for bank crisis management and national deposit guarantee schemes (CMDI framework). Subsequently, it is planned to review the state of the Banking Union and identify in a consensual manner possible further measures with regard to the other outstanding elements to strengthen and complete the Banking Union.

In response to the global economic and financial crisis, regulatory authorities and central banks launched a comprehensive regulatory reform program. As a result, in December 2010, the Basel Committee on Banking Supervision launched a first package, typically referred to as Basel III, of new standards on bank capital adequacy and liquidity to enhance the banking regulatory framework. In order to implement Basel III into EU law, previous EU capital requirement directives were replaced by the Capital Requirements Regulation (CRR), a regulation establishing prudential requirements, and the Capital Requirements Directive IV (CRD IV), a directive governing access to deposit-taking activities, both of which entered into force on January 1, 2014 and have since been gradually implemented in the EU Member States. Further measures were implemented by changes to CRR and CRD adopted by the European legislators in 2019 as described below. A second reform package was endorsed by the Basel Committee on Banking Supervision in December 2017 to finalize the post-crisis reforms. It aims to reduce excessive variability in the calculation of risk-weighted assets.

In May 2019, European legislators adopted a package of revised rules aimed at reducing risks in the EU banking sector. Most new rules started to apply in mid-2021. The package comprised two regulations and two directives, relating to bank capital requirements (amendments to CRR (CRR II) and CRD (CRD V)) and the recovery and resolution of banks in difficulty (amendments to BRRD and the Single Resolution Mechanism Regulation (SRMR)) and implemented reforms agreed at the international level following the 2007-2008 financial crisis to strengthen the banking sector and to address outstanding challenges to financial stability. Among the core measures agreed to reduce risk in the banking system, the package enhances the framework for bank resolution. It requires global-systemically important institutions (G-SIIs) to have more loss-absorbing and recapitalization capacity by setting the minimum requirements with respect to the amount and quality of own funds and eligible liabilities (MREL) to ensure an effective and orderly “bail-in” process. It also provides provisional safeguards and possible additional actions for resolution authorities. Additionally, the package strengthens bank capital requirements to reduce incentives for excessive risk taking, by including a binding leverage ratio, a binding net stable funding ratio, and setting risk sensitive rules for trading in securities and

derivatives. Moreover, the package includes measures to improve banks' lending capacity and to facilitate a greater role for banks in the capital markets, such as reducing the administrative burden for smaller and less complex banks, linked in particular to reporting and disclosure requirements and enhancing the capacity of banks to lend to SMEs and to fund infrastructure projects. It also comprises a framework for cooperation and information sharing among the various authorities involved in the supervision and resolution of cross-border banking groups. The agreed measures aim to preserve the balance achieved by the Council between the powers of home and host supervisors in order to facilitate cross-border flows of capital and liquidity, while ensuring an adequate level of protection for depositors and creditors as well as financial stability in all EU Member States. Furthermore, the amendments improve cooperation between competent authorities on matters related to the supervision of anti-money laundering activities.

In the spring of 2020, due to the COVID-19 pandemic, the ECB announced a temporary change within its framework for market risk, by allowing banks to adjust the supervisory component of these requirements. Following a recommendation of the EBA, the BaFin extended these relief measures to smaller German banks which are not directly supervised by the ECB. In addition, the ECB announced in September 2020 that euro area banks under its direct supervision may exclude certain central bank exposures from the leverage ratio. This measure was extended to smaller German banks by BaFin as well. On February 10, 2022, the ECB announced that it will not extend capital and leverage relief measures for banks beyond December 2022. Further, the ECB announced that it will not extend the ability of banks to exclude certain central bank exposures from their leverage ratios beyond March 2022.

Based on their assessment of the risk situation in German credit markets as well as the development of supporting indicators like the credit/GDP gap, BaFin decided to increase the ratio of the national anticyclical capital buffer to 0.75% from February 1, 2022 onwards. The associated requirement for hard equity must therefore be met from February 1, 2023 onwards.

Sources: European Commission, European system of financial supervision

(https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-supervision-and-risk-management/european-system-financial-supervision_en); European Commission, Banking Union (https://ec.europa.eu/info/business-economy-euro/banking-and-finance/banking-union_en); Council of the European Union, Banking Union (<https://www.consilium.europa.eu/en/policies/banking-union/>); European Central Bank, ECB assumes responsibility for euro area banking supervision, press release of November 4, 2014 (<https://www.ecb.europa.eu/press/pr/date/2014/html/pr141104.en.html>); European Central Bank - Banking Supervision, Single Supervisory Mechanism (<https://www.bankingsupervision.europa.eu/about/thessm/html/index.en.html>); European Central Bank - Banking Supervision, List of supervised entities (<https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.listofsupervisedentities202102.en.pdf?332b1d8606bfdbb1cc4a5adcd66934f>); European Commission, Single Resolution Mechanism to come into effect for the Banking Union, press release of December 31, 2015 (https://europa.eu/rapid/press-release_IP-15-6397_en.htm); Single Resolution Board, News and Media, Single Resolution Fund grows by €13.7 billion to reach €66 billion, press release of July 8, 2022 (<https://www.srb.europa.eu/en/content/single-resolution-fund-grows-eu137-billion-reach-eu66-billion>); Single Resolution Board, National Compartment (million Euros), March 17, 2023 (https://www.srb.europa.eu/system/files/media/document/2023-03-17_National-Compartment.pdf); Single Resolution Board, The Single Resolution Fund (<https://srb.europa.eu/en/content/single-resolution-fund>); Single Resolution Board, Banking Union – Single Resolution Board completes signature of Loan Facility Agreements with all 19 participating Member States, February 8, 2017 (<https://srb.europa.eu/en/file/pr-banking-union-single-resolution-board-completes-signature-loan-facility-agreements-all-19>); Single Resolution Fund (SRF) Fact Sheet (https://www.srb.europa.eu/en/system/files?file=media/document/2020_fact_sheet.pdf); European Banking Authority, Implementing Basel III in Europe: CRD IV Package (<https://www.eba.europa.eu/regulation-and-policy/implementing-basel-iii-europe>); Bank for International Settlements, Basel Committee on Banking Supervision, Basel III: Finalising Post-Crisis Reforms (<https://www.bis.org/bcbs/publ/d424.htm>); European Commission, Communication from the Commission: Completing the banking union, first published on October 11, 2017 (https://ec.europa.eu/finance/docs/law/171011-communication-banking-union_en.pdf); Council of the European Union, Banking Union, Amendments to the banking union rules (<https://www.consilium.europa.eu/en/policies/banking-union/2016-amendments>); European Council, Banking Union: Council adopts measures to reduce risk in the banking system (<https://www.consilium.europa.eu/en/press/press-releases/2019/05/14/banking-union-council-adopts-measures-to-reduce-risk-in-the-banking-system/>); European Council, Euro Summit, 14/12/2018 (<https://www.consilium.europa.eu/en/meetings/euro-summit/2018/12/14/>); Single Resolution Board, Single Resolution Fund, SRF grows to EUR 33 billion after latest round of transfers, press release of July 17, 2019 (<https://srb.europa.eu/en/node/804>); European Central Bank – Banking Supervision, ECB Banking Supervision provides temporary relief for capital requirements for market risk, press release of April 16, 2020 (<https://www.bankingsupervision.europa.eu/press/pr/date/2020/html/ssm.pr200416~ecf270bca8.en.html>); European Central Bank – Banking Supervision, ECB Banking Supervision provides temporary capital and operational relief in reaction to coronavirus, press release of March 12, 2020 (<https://www.bankingsupervision.europa.eu/press/pr/date/2020/html/ssm.pr200312~43351ac3ac.en.html>); Bundesanstalt für Finanzdienstleistungsaufsicht, General Administrative Act regarding a decrease in the domestic countercyclical capital buffer rate of March 31, 2020, updated on April 23, 2020 (https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Aufsichtsrecht/Verfuegung/vf_200331_allgvfg_antizykl_kapitalpuffer_en.html); European Central Bank - Banking Supervision, ECB will not extend capital and leverage relief for banks, press release of February 10, 2022 (https://www.bankingsupervision.europa.eu/press/pr/date/2022/html/ssm.pr220210_1~ea3dd0cd51.en.html).

Securities Market

The Federal Republic's securities market is among Europe's largest. Trading in listed securities is not legally or otherwise confined to the stock exchanges. It is estimated, however, that most transactions in equity securities are executed through stock exchanges. By contrast, debt securities, although typically listed, are predominantly traded over-the-counter.

Highly developed secondary markets, combined with the distribution capabilities of an extensive network of financial institutions, provide the basis for the Federal Republic's position in the world's capital markets. Equity and debt issues are generally underwritten and distributed through banking syndicates, which typically include commercial banks as well as certain regional and specialized institutions. The regulated securities markets in Berlin, Dusseldorf, Frankfurt am Main, Hamburg, Hanover, Munich and Stuttgart and the European Energy Exchange are recognized as regulated markets of the EU according to Article 56 of Directive 2014/65/EU on Markets in Financial Instruments and comply with globally accepted regulatory standards.

Based on total turnover on German securities exchanges, the Frankfurt Stock Exchange, operated by Deutsche Börse AG, is by far the most important stock exchange in the Federal Republic.

In January 2013, the Heads of State or Government of the European Union adopted a decision authorizing a number of EU Member States to proceed with the introduction of a financial transaction tax through "enhanced cooperation." Negotiations are currently not being conducted.

Sources: Bundesanstalt für Finanzdienstleistungsaufsicht, Notice on the granting of authorization to provide financial services pursuant to section 32 (1) of the German Banking Act (https://www.bafin.de/SharedDocs/Downloads/EN/Merkblatt/WA/dl_fidierlaubnis_buba_en.html); Bundesanstalt für Finanzdienstleistungsaufsicht, Issuer Guidelines published by the Federal Financial Supervisory Authority (https://www.bafin.de/SharedDocs/Downloads/EN/Leitfaden/WA/dl_emittentenleitfaden_einleitung_en.html?nn=12655158); Bundesanstalt für Finanzdienstleistungsaufsicht, Stock exchanges & markets (https://www.bafin.de/EN/Aufsicht/BoersenMaerkte/boersenmaerkte_node_en.html); Deutsche Börse Group, The Frankfurt Stock Exchange (<https://www.deutsche-boerse.com/dbg-en/our-company/frankfurt-stock-exchange>); Council of the European Union, Financial transaction tax: Council agrees to enhanced cooperation, press release of January 22, 2013 (https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/134949.pdf).

PUBLIC FINANCE

Receipts and Expenditures

The Federal Government, each of the *Länder* governments and each of the municipalities (*Gemeinden*) have separate budgets. The federal budget is the largest single public budget.

The fiscal year of the Federal Republic is the calendar year. The annual federal budget is passed by an act of Parliament. On the basis of a proposal prepared by the Ministry of Finance, the Federal Government introduces the federal budget bill to the Parliament, generally in the summer of each year. The proposal has to pass through three Bundestag sessions, the budget committee of the Bundestag, and the Bundesrat, which deliberates on the proposal twice. The final vote on the proposal is taken by the Bundestag in its third session.

In addition to the federal, *Länder* and municipal budgets, there are separate budgets for the social security funds and various special funds (*Sondervermögen*) of the federal administration and the *Länder*, as well as other extra-budgetary entities at all levels of government that are created for specific public purposes. General government, as defined in the national accounts, comprises all these different levels of government activity.

In 2022, the need for new public spending because of the impact of Russia's invasion of Ukraine overlapped with the budget relief from the cessation of COVID-19 measures.

Total consolidated general government revenue, as presented in the national accounts, amounted to EUR 1,820.6 billion in 2022, with tax revenue of EUR 948.3 billion and net social contributions of EUR 665.8 billion.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 3.4.3.2.

In 2022, VAT and the taxes on income and wealth, as presented in the national accounts, amounted to EUR 287.5 billion and EUR 527.8 billion, respectively. These joint taxes are distributed among the Federal Government, the *Länder* governments and municipal authorities, according to predetermined formulae. In addition to joint taxes, the Federal Government, the *Länder* governments and the municipal authorities each levy special taxes, for example, on tobacco and beer.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 3.4.3.16.

Consolidated general government expenditure in 2022, as presented in the national accounts, amounted to a total of EUR 1,922.1 billion. The most significant consolidated general government expenditures were monetary social benefits (EUR 618.7 billion), social benefits in kind (EUR 355.6 billion) and employee compensation (EUR 306.7 billion). Other significant consolidated general government expenditures included intermediate consumption (EUR 236.9 billion), gross capital formation (EUR 101.6 billion), subsidies (EUR 72.8 billion) and interest on public debt (EUR 26.1 billion).

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Table 3.4.3.2.

GENERAL GOVERNMENT ACCOUNTS (1)

	2022	2021	2020	2019	2018
	(EUR in billions)				
Federal Government, <i>Länder</i> governments and municipalities					
Revenue	1,199.4	1,116.4	1,003.8	1,049.0	1,014.7
<i>of which: Current taxes (2)</i>	948.3	877.8	774.5	827.3	801.3
Expenditure	1,307.4	1,255.0	1,116.5	1,004.9	965.1
Balance	-108.0	-138.5	-112.7	44.0	49.6
Social security funds					
Revenue	811.3	783.5	717.9	690.9	662.0
Expenditure	804.7	779.2	752.7	681.7	646.0
Balance	6.7	4.3	-34.8	9.2	16.0
General government					
Revenue	1,820.8	1,711.7	1,569.1	1,615.8	1,557.2
Expenditure	1,922.1	1,846.0	1,716.6	1,562.6	1,491.6
Balance	-101.3	-134.3	-147.6	53.2	65.6

(1) Definition according to the national accounts.

(2) Excluding taxes of domestic sectors paid to EU.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 – 2022 (March 2023), Tables 3.4.3.2, 3.4.3.3 and 3.4.3.7.

FEDERAL GOVERNMENT ACCOUNTS (1)

	2022	2021	2020	2019	2018
			(EUR in billions)		
Revenue	502.6	471.1	421.9	456.9	442.1
<i>of which: Current taxes (2)</i>	<i>436.9</i>	<i>404.3</i>	<i>359.7</i>	<i>396.2</i>	<i>385.6</i>
Expenditure	631.8	617.0	509.3	435.5	421.2
Balance	-129.2	-145.9	-87.4	21.4	21.0

(1) Definition according to the national accounts.

(2) Excluding taxes of domestic sectors paid to EU.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 - 2022 (March 2023), Table 3.4.3.4.

GENERAL GOVERNMENT EXPENDITURE: BREAKDOWN BY FUNCTIONS (1)

	2022	2021	2020	2019	2018
			(EUR in billions)		
General public services	239.2	224.2	207.1	201.1	191.9
Defense	40.2	40.0	38.4	36.9	35.4
Public order and safety	63.4	60.3	58.1	56.3	53.3
Economic affairs	216.2	217.2	155.4	112.1	109.9
Environmental protection	22.2	20.7	23.1	20.7	19.4
Housing and community amenities	17.6	16.3	16.3	14.6	13.4
Health	331.8	311.3	284.9	253.2	241.5
Recreation, culture and religion	42.2	39.9	38.7	36.3	34.7
Education	172.6	163.2	157.8	151.7	143.6
Social protection	776.8	752.9	736.9	679.8	648.6
Total expenditure	1,922.1	1,846.0	1,716.6	1,562.6	1,491.6

(1) Definition according to the national accounts.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 - 2022 (March 2023), Table 3.4.3.11.

Germany's General Government Deficit/Surplus and General Government Gross Debt

For purposes of the EU Member States' reports to the European Commission under the EDP, the general government or "Maastricht" deficit/surplus refers to the difference between consolidated public sector revenue and consolidated public sector expenditure and is the balancing item "net borrowing/net lending" of the general government (central government, state government, local government and social security funds) as defined in ESA 2010. After eight annual surpluses in a row, the German general government budget balance turned negative in 2020 due to the impact of the COVID-19 pandemic. Following a general government deficit of 4.3% in 2020 and 3.7% in 2021, the German general government deficit amounted to EUR 101.3 billion or 2.6% of nominal GDP in 2022, which is below the EU's 3% reference value for the general government deficit. The German general government gross debt-to-GDP ratio decreased from 69.3% in 2021 to 66.3% in 2022, which is above the EU's respective reference value of 60%.

On March 23, 2020, the respective Ministers of Finance of the EU Member States agreed with the assessment of the European Commission that the condition for the use of the general escape clause under the SGP – a severe economic downturn in the euro area or the EU as a whole – had been fulfilled. The activated general escape clause allows Germany and the other EU Member States to depart from the budgetary requirements that would normally apply under the European fiscal framework to tackle the economic consequences of the COVID-19 pandemic. According to the fiscal policy guidance published by the European Commission on May 23, 2022, the general escape clause will continue to apply in 2023 against the backdrop of the economic consequences of Russia's invasion of Ukraine and is expected to be deactivated as of 2024. For further information, see also "General—Monetary Integration—EU Economic Governance—Stability and Growth Pact."

Sources: Statistisches Bundesamt, Fachserie 18, Reihe 1.2 – 4. Vierteljahr 2022 (February 2023), Table 1.10; EUR-lex, Consolidated Version of the Treaty on the Functioning of the European Union (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02016E/TXT-20200301&from=EN>); Deutsche Bundesbank, General government debt as defined in the Maastricht Treaty as a percentage of GDP - Germany - overall (https://www.bundesbank.de/dynamic/action/en/statistics/time-series-databases/time-series-databases/745582/745582?listId=www_v27_web011_21a&treeAnchor=FINANZEN&statisticType=BBK ITS&tsId=BBK01.BJ9959); Council of the European Union, Statement of EU ministers of finance on the Stability and Growth Pact in light of the COVID-19 crisis, press release of March 23, 2020 (<https://www.consilium.europa.eu/en/press/press-releases/2020/03/23/statement-of-eu-ministers-of-finance-on-the-stability-and-growth-pact-in-light-of-the-covid-19-crisis/>); European Commission, European Semester Spring Package: Sustaining a green and sustainable recovery in the face of increased uncertainty, press release of May 23, 2022 (https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3182).

As regards national fiscal rules, the German constitutional balanced budget rule known as the "debt brake" (*Schuldenbremse*) provides for a structural budget deficit of no more than 0.35% of GDP at the federal level and structurally balanced *Länder* budgets. The Bundestag suspended the debt brake for the years 2020 and 2021 in order to enable the financing of the governmental measures taken in connection with the COVID-19 pandemic as well as for the year 2022 due to Russia's invasion of Ukraine. From 2023 onwards, the debt brake will apply again, as is reflected in the 2023 federal budget plan (*Bundeshaushalt – Sollbericht 2023*). Still, in response to Russia's invasion of Ukraine, the Federal Government established a Special Fund for the Federal Armed Forces (*Sondervermögen Bundeswehr*) with its own credit authorization of up to EUR 100 billion on a one-off basis. This one-off credit authorization is exempted from the debt brake. The Special Fund will be used to supplement the defense section of the Federal Budget to achieve the guideline of the North Atlantic Treaty Organization (NATO) of spending at least 2% of GDP for defense each year.

Sources: Bundesministerium der Finanzen, Fiskalregeln (https://www.bundesfinanzministerium.de/Web/DE/Themen/Oeffentliche_Finanzen/Stabilitaetspolitik/Fiskalregeln/fiskalregeln.html); Bundesministerium der Finanzen, Kompendium zur Schuldenregel des Bundes (*Schuldenbremse*), February 25, 2022 (https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Oeffentliche_Finanzen/Schuldenbremse/kompendium-zur-schuldenbremse-des-bundes.pdf?__blob=publicationFile&v=9); Bundestag, Bundestag billigt mit breiter Mehrheit Nachtragshaushalt für 2020 (<https://www.bundestag.de/dokumente/textarchiv/2020/kw13-de-corona-schuldenbremse-688956>); Bundestag, Finanzministerium-Etat beschlossen – Schuldenbremse bleibt ausgesetzt (<https://www.bundestag.de/dokumente/textarchiv/2020/kw50-de-finanzministerium-bundesrechnungshof-810030>); Bundesministerium der Finanzen, Sollbericht 2023: Ausgaben und Einnahmen des Bundeshaushalts, BMF-Monatsbericht Februar 2023 (<https://www.bundesfinanzministerium.de/Monatsberichte/2023/02/Inhalte/Kapitel-3-1-sollbericht-2023.html>); Bundesministerium der Finanzen, Sondervermögen Bundeswehr: Investitionen in unsere Freiheit, press release of March 16, 2022 (https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2022/03/2022-03-16-sondervermoegen-bundeswehr.html?cms_pk_kwd=16.03.2022_Sonderverm%C3%B6gen+Bundeswehr+Investitionen+in+unsere+Freiheit&cms_pk_campaign=Newsletter-16.03.2022); Deutscher Bundestag, Dokumente, Textarchiv, 2022, Bundestag beschließt das Sondervermögen für die Bundeswehr (<https://www.bundestag.de/dokumente/textarchiv/2022/kw22-de-grundgesetzaenderung-897760>); Bundesrat, Bundesrat kompakt – Das wichtigste zur Sitzung, Ausgewählte Tagesordnungspunkte der 1022. Sitzung am 10.06.2022, Bundeswehrsondervermögen – Mindestlohn – Rente – Pflegebonus, TOP 24A Bundeswehr (<https://www.bundesrat.de/DE/plenum/bundesrat-kompakt/22/1022/1022-node.html>).

The following table shows historical information on the Federal Republic's general government deficit/surplus and debt as a percentage of GDP.

THE FEDERAL REPUBLIC'S FISCAL MAASTRICHT CRITERIA

	2022	2021	2020 (% of GDP)	2019	2018
General government deficit (-) / surplus (+)	-2.6	-3.7	-4.3	1.5	1.9
General government gross debt	66.3	69.3	68.7	59.6	61.9

Sources: Statistisches Bundesamt, Fachserie 18, Reihe 1.2 – 4. Vierteljahr 2022 (February 2023), Table 1.10; Deutsche Bundesbank, Time series BBK01.BJ9959: General government debt as defined in the Maastricht Treaty as a % of GDP - Germany - overall (https://www.bundesbank.de/dynamic/action/en/statistics/time-series-databases/time-series-databases/745582/745582?listId=www_v27_web011_21a&tsId=BBK01.BJ9959&dateSelect=2020).

Fiscal Outlook

On April 26, 2023, the Federal Government published the German Stability Program 2023, in accordance with the rules of the Stability and Growth Pact. The German Stability Program 2023 contains budgetary projections for the years 2023 to 2026 at all government levels (Federation, *Länder*, local authorities and social security funds). The projections are based on (i) the Federal Government's annual projection of macroeconomic trends of January 25, 2023, (ii) the results of the Working Party on Tax Revenue Estimates of October 25, 2022, as subsequently updated to take account of the Federal Government's annual projection, (iii) the federal budget for 2023 adopted by the German Parliament on November 22, 2022, and (d) the benchmark figures for the government draft of the federal budget for 2024 and the fiscal plan until 2026. Since the Federal Government presented no new fiscal plan until 2027, no projection for 2027 was included in the German Stability Program 2023.

The following table presents the Federal Government's projection for key fiscal indicators in the years 2023 to 2026 compared to the results for these key fiscal indicators in 2022, as set out in the German Stability Program 2023.

GENERAL GOVERNMENT BUDGETARY PROSPECTS (1)

	2026	2025	2024	2023	2022
Revenue	46³/₄	46¹/₂	46	45³/₄	47.1
Total taxes	24 ¹ / ₂	24 ¹ / ₄	23 ³ / ₄	24	24.8
Social contributions	17 ¹ / ₂	17 ¹ / ₂	17 ¹ / ₂	17 ¹ / ₄	17.2
Property income	¹ / ₂	¹ / ₂	¹ / ₂	¹ / ₄	0.4
Other	4	4 ¹ / ₄	4 ¹ / ₄	4 ¹ / ₄	4.7
Expenditure (2)	47¹/₄	47¹/₄	47³/₄	50	49.7
Compensation of employees and intermediate consumption	13	13 ¹ / ₄	13 ¹ / ₂	13 ¹ / ₂	14.1
Social payments	25 ¹ / ₄	25	24 ³ / ₄	24 ³ / ₄	25.2
Interest expenditure	1 ¹ / ₄	1	1	³ / ₄	0.7
Subsidies	1 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	3 ³ / ₄	1.9
Gross fixed capital formation	2 ³ / ₄	2 ³ / ₄	2 ¹ / ₂	2 ¹ / ₂	2.6
Capital transfers	1 ³ / ₄	1 ³ / ₄	2	2 ¹ / ₄	2.4
Other	2	2	2 ¹ / ₄	2 ¹ / ₄	2.9
General government deficit (-) / surplus (+)	-3⁴/₄	-3⁴/₄	-13⁴/₄	-41⁴/₄	-2.6
Federal Government	-3 ⁴ / ₄	-1	-13 ⁴ / ₄	-4 ¹ / ₂	-3.3
<i>Länder</i> governments	¹ / ₄	¹ / ₄	0	0	0.3
Municipalities	¹ / ₄	¹ / ₄	¹ / ₄	¹ / ₄	0.2
Social security funds	-1 ¹ / ₂	-1 ¹ / ₄	0	0	0.2
General government gross debt	65¹/₂	66¹/₄	66¹/₂	67³/₄	66.3

(1) Forecast figures are rounded to one-quarter of a percent of GDP.

(2) Adjusted by the net amount of payments in connection with swaps.

Source: Bundesministerium der Finanzen, Deutsches Stabilitätsprogramm 2023

(https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/stabilitaetsprogramm-2023.pdf?__blob=publicationFile&v=6), Tables 13 and 17.

Tax Structure

Income Tax

Significant sources of revenue for the general government are the various types of income taxes. Income taxation for employees and self-employed persons is based on a progressive tax scale with marginal tax rates ranging from 14% to 45% subject to the amount of taxable income. Employees pay taxes on their income from employment in the form of wage taxes. Self-employed persons typically pay estimated taxes during the year before filing their annual income tax return. Income generated by partnerships (*Personengesellschaften*) is not subject to tax at the partnership level, but at the level of the partners. The partners pay tax on this income according to their individual income tax brackets.

Income generated by corporations is subject to corporate income tax (*Körperschaftsteuer*) at a flat rate of 15%.

Capital income received by domestic taxpayers (all types of income from capital as well as private shareholders' net gains from sales of shares in corporations) is subject to a final uniform tax rate of 25% (*Abgeltungsteuer*), taking into consideration an allowance (*Sparerpauschbetrag*) of EUR 1,000 (EUR 2,000 for married couples).

In addition to the various types of income tax, a solidarity surcharge of 5.5% is imposed on the applicable income tax liability. From January 1, 2021, onwards, the additional tax burden resulting from the solidarity surcharge has been abolished for approximately 90% and reduced for approximately 6.5% of income taxpayers for the benefit of low and middle incomes.

Sources: Bundesministerium der Justiz, Einkommensteuergesetz (<https://www.gesetze-im-internet.de/estg/index.html>); Bundesministerium der Justiz, Körperschaftsteuergesetz (https://www.gesetze-im-internet.de/kstg_1977/index.html); Bundesministerium der Justiz, Solidaritätszuschlagsgesetz 1995, § 4 Zuschlagssatz (https://www.gesetze-im-internet.de/solzg_1995/_4.html); Bundesministerium der Finanzen, Fragen und Antworten zur weitgehenden Abschaffung des Solidaritätszuschlags, Was ist ab 2021 neu? (<https://www.bundesfinanzministerium.de/Content/DE/FAQ/2019-08-21-faq-solidaritaetszuschlag.html>).

VAT and Consumption Taxes

VAT serves as a significant source of revenue. VAT is a general consumption tax that is imposed on the value of most goods and services. The standard rate applicable to most goods and services is 19%. Certain items that are classified as necessities, such as food (except food and beverages in restaurants) and books, are subject to a reduced rate of 7%.

Against the backdrop of Russia's invasion of Ukraine and rising energy prices, the VAT rate for the supply of gas via the natural gas grid and district heating was temporarily reduced from 19% to 7% from October 1, 2022 until March 31, 2024.

In addition to the VAT, there are specific consumption taxes. The most significant specific consumption taxes relate to energy and tobacco.

Sources: Bundesministerium der Justiz, Umsatzsteuergesetz (https://www.gesetze-im-internet.de/ustg_1980/index.html); Bundesministerium der Justiz, Umsatzsteuergesetz, § 12 Steuersätze (https://www.gesetze-im-internet.de/ustg_1980/_12.html); Die Bundesregierung, Wir entlasten Deutschland, Im Bundesrat beschlossen – Umsatzsteuer auf Gas wird reduziert, published on October 26, 2022 (<https://www.bundesregierung.de/breg-de/themen/entlastung-fuer-deutschland/steuersenkung-gas-2125486>); Bundesministerium der Justiz, Energiesteuergesetz (<https://www.gesetze-im-internet.de/energiestg/>); Bundesministerium der Justiz, Tabaksteuergesetz (https://www.gesetze-im-internet.de/tabstg_2009/index.html).

Environmental Tax and Emissions Trading

The environmental tax regime aims to encourage energy conservation and to mitigate climate change by providing incentives for a reduction of carbon emissions. Furthermore, it aims to allocate the burden of taxes and contributions more equally among labor, capital and natural resources. Key points of the environmental tax regime are an electricity tax and a fossil fuel energy tax. The electricity tax rate is EUR 20.50 per megawatt-hour. The rates of the energy tax are assessed in accordance with certain environmental criteria.

In addition to the EU's Emissions Trading System (ETS) for carbon emissions applied to the manufacturing and energy industries, Germany has introduced a national ETS for carbon emissions of the transportation and buildings sector from 2021 onwards, starting with a price on carbon emissions initially set at EUR 25 per ton in 2021, EUR 30 per ton in 2022 and rising incrementally thereafter. In 2026, allowances will be auctioned within a price range of EUR 55 (minimum) to EUR 65 (maximum) per ton of carbon emissions.

Following Russia's invasion of Ukraine and its impact on energy prices for households and companies, the projected price increase on carbon emissions has been adjusted to EUR 30 per ton in 2023 (EUR 5 less per ton than previously planned), EUR 35 per ton in 2024 (EUR 10 less per ton than previously planned) and EUR 45 per ton in 2025 (EUR 10 less per ton than previously planned).

Sources: Bundesministerium der Justiz, Stromsteuergesetz (<https://www.gesetze-im-internet.de/stromstg/index.html>); Bundesministerium der Justiz, Stromsteuergesetz, § 3 Steuertarif (https://www.gesetze-im-internet.de/stromstg/___3.html); The Federal Government, Effectively reducing CO2 emissions (<https://www.bundesregierung.de/breg-en/issues/climate-action/effectively-reducing-co2-1795850>); Federal Ministry for Economic Affairs and Climate Action, Robert Habeck: “We are taking a more cautious approach to carbon pricing, reducing the burden on households and companies” – 2023 increase in carbon price postponed, press release of October 28, 2022 (<https://www.bmwk.de/Redaktion/EN/Pressemitteilungen/2022/10/20221028-robert-habeck-we-are-taking-a-more-cautious-approach-to-carbon-pricing-reducing-the-burden-on-households-and-companies.html>).

Trade Tax

Trade tax (*Gewerbesteuer*) is levied at the municipal level and is imposed on businesses and their objective earning power. The trade tax rate varies and depends on the municipality that levies the tax. Basis of assessment are the profits of a business enterprise as determined under income tax law or corporation tax law, increased or decreased by certain adjustments. The result is multiplied by the basic federal rate (*Gewerbesteuermesszahl*) to achieve the base amount for the trade tax (*Steuermessbetrag*), which is then multiplied by the municipal multiplier (*Hebesatz*). Beyond a required minimum level of 200% for the municipal multiplier, municipalities have discretion to fix the municipal tax collection rate. Based on a weighted average municipal multiplier of 400.2% in 2020 the average trade tax rate in 2021 amounted to 14.01%.

Sources: Bundesministerium der Justiz und für Verbraucherschutz, Gewerbesteuergesetz (<https://www.gesetze-im-internet.de/gewstg/index.html>); Bundesministerium der Finanzen, Die wichtigsten Steuern im internationalen Vergleich 2021, Overview 4, page 14 (https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/die-wichtigsten-steuern-im-internationalen-vergleich-2021.pdf?__blob=publicationFile&v=10).

The following table provides an overview of the annual tax revenues of the general government divided by categories for each of the years indicated, as presented in the national accounts.

TAXES (1)

	2022	2021	2020	2019	2018
	(EUR in billions)				
Current taxes	948.3	877.8	774.5	827.3	801.3
Taxes on production and imports	420.5	392.8	345.8	369.8	356.6
of which: VAT	287.5	259.4	221.6	244.1	235.1
Current taxes on income and wealth	527.8	485.0	428.7	457.5	444.7
of which: Wage tax	273.2	256.7	255.2	260.4	248.1
Assessed income tax	79.1	68.0	57.3	61.7	58.8
Non-assessed taxes on earnings	41.3	39.4	29.8	30.5	31.0
Corporate tax	49.2	44.3	25.8	34.1	36.0
Trade tax (<i>Gewerbesteuer</i>)	69.4	61.1	45.4	55.6	56.0
Capital taxes	9.2	9.8	8.7	7.0	6.8
Tax revenue of general government	957.5	887.6	783.1	834.3	808.1
Taxes of domestic sectors to EU	6.6	5.0	4.7	5.1	5.0
Taxes	964.1	892.6	787.9	839.4	813.1

(1) Definition according to the national accounts.

Source: Statistisches Bundesamt, Fachserie 18, Reihe 1.4 - 2022 (March 2023), Table 3.4.3.16.

Government Participations

The Federal Republic and its various special funds held direct participations in 117 public and private enterprises as of December 31, 2021.

The following table shows information on the Federal Republic's significant direct participations (including those held through special funds) as of December 31, 2021.

PARTICIPATIONS OF THE FEDERAL REPUBLIC

Enterprises	Total nominal capital of enterprise (EUR in millions)	Participation of the Federal Republic (%)
Significant majority participations:		
Deutsche Bahn AG	2,150	100.0
KfW Kreditanstalt für Wiederaufbau	3,750	80.0
Hypo Real Estate Holding GmbH (1)	909	100.0
Significant minority participations exceeding 25%:		
Flughafen München GmbH	307	26.0

(1) Participations held by a special fund.

Source: Bundesministerium der Finanzen, *Beteiligungsbericht des Bundes 2022*

(https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/beteiligungsbericht-des-bundes-2022.pdf?__blob=publicationFile&v=4).

In December 2022, following approval by the European Commission under EU state aid rules, the Federal Government acquired approximately 99% of the share capital of energy company Uniper SE (“Uniper”) with the aim of securing the energy supply in Germany. Unless otherwise approved by the European Commission, the Federal Government is obliged to reduce its stake in Uniper to a maximum of 25% plus one share by 2028 at the latest. Uniper provides critical energy infrastructure in Germany and plays a key role in the supply of electricity and natural gas. As a result of Russia’s invasion of Ukraine and the subsequent halt in the supply of Russian natural gas to Germany, Uniper faced existential difficulties. Due to Uniper’s central role for the energy supply in Germany, the Federal Government decided on initial support measures in July 2022, which were adapted based on further developments in September 2022. In this context, Uniper had already received substantial support from KfW in the form of credit lines. Funds provided by KfW will now be substituted by equity and repaid in part. Another company that was transferred to state ownership as a measure to safeguard energy security in Germany is SEFE. The European Commission confirmed these capital measures under state aid rules in December 2022. Specifically, the European Commission authorized the Federal Government to inject EUR 6.3 billion of additional equity into the company by substituting an existing KfW loan subject to certain competition-related conditions.

Sources: Bundesministerium der Finanzen, Bundesministerium für Wirtschaft und Klimaschutz, *Einstieg des Bundes bei Energieversorger Uniper SE vollzogen, joint press release of December 22, 2022*

(<https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2022/12/2022-12-22-einstieg-bund-bei-uniper-vollzogen.html>); Bundesministerium für Wirtschaft und Klimaschutz, *European Commission approves equity capital for reorientation of SEFE, press release of December 20, 2022*

(<https://www.bmwk.de/Redaktion/EN/Pressemitteilungen/2022/12/20221220-european-commission-approves-equity-capital-for-reorientation-of-sefe.html>).

Direct Debt of the Federal Government

As of December 31, 2022, the principal amount of the Federal Government’s direct debt totaled EUR 1,515.2 billion. For further information on the principal amount of the outstanding direct debt, see “Tables and Supplementary Information—I. Summary of the Principal Amount of the Outstanding Direct Debt of the Federal Government.”

The Federal Government raises funds primarily through the issuance of bonds and notes. Euro-denominated bonds and notes issued by the Federal Republic are evidenced by book entry and no certificates are issued.

In addition to its own direct debt obligations, the Federal Government and its special funds had outstanding guarantees in an aggregate amount of EUR 671.5 billion as of December 31, 2021. Of this amount, EUR 128.0 billion were outstanding in the form of export credit insurance, which is handled by Euler Hermes Aktiengesellschaft (“HERMES”) on behalf of and for the account of the Federal Government. Furthermore, EUR 22.4 billion of the aggregate amount were outstanding in the form of a guarantee for a loan to Greece according to the German Financial Stability Act, and EUR 89.4 billion of the aggregate amount were outstanding in the form of a guarantee for the European Financial Stability Facility.

Source: Bundesministerium der Finanzen, *Finanzbericht 2022, Overview 8.1.3, pages 308-309*

(https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/finanzbericht-2023.html).

For more detailed information regarding the Federal Government’s debt and guarantees, see “—Tables and Supplementary Information.”

For information on the Federal Government’s liability as of December 31, 2022 for capital subscriptions to various international financial organizations, see the table entitled “—Tables and Supplementary Information—III. Liabilities to International Financial Organizations.”

TABLES AND SUPPLEMENTARY INFORMATION

I. DIRECT DEBT OF THE FEDERAL GOVERNMENT

SUMMARY OF THE PRINCIPAL AMOUNT OF THE OUTSTANDING DIRECT DEBT OF THE FEDERAL GOVERNMENT

	Principal amount outstanding as of December 31, 2022 (EUR in millions)
Federal Bonds (<i>Bundesanleihen</i>)	1,090,500
Federal Notes (<i>Bundesobligationen</i>)	232,000
Federal Treasury Notes (<i>Bundesschatzanweisungen</i>)	130,500
Treasury Discount Paper (<i>Unverzinsliche Schatzanweisungen</i>)	139,000
Inflation-linked Securities (<i>Inflationsindexierte Bundeswertpapiere</i>)	77,150
Green Federal Bonds (<i>Grüne Bundesanleihen</i>)	28,500
Green Five-year Federal Notes (<i>Grüne Bundesobligationen</i>)	10,000
Borrowers' note loans (<i>Schuldscheindarlehen</i>)	5,360
Old debt (1)	4,474
Supplementary Federal Note (<i>Zusatzemission des Bundes</i>) for the ESF (2)	169,775
ESF investment in Federal Securities	-169,775
Repurchased debt	-202,256
Total (3)	1,515,228

- (1) Mainly equalization and covering claims of the Deutsche Bundesbank, other banks and insurance companies in connection with the currency reform of 1948.
- (2) ESF = Economic Stabilisation Fund (*WSF, Wirtschaftsstabilisierungsfonds*). The Supplementary Federal Note was issued outside of the regular issuance calendar activities. It was not and will not be sold on the market and was instead transferred directly into the portfolio of the Economic Stabilisation Fund. The two entries for the items "Supplementary Federal Note for the ESF" and "ESF investment in Federal Securities" will therefore always be matching to a balance of zero.
- (3) Compared to the published Monthly Report of the Federal Ministry of Finance, January 2023, from which the information above is derived, Treasury Discount Papers are presented with their outstanding volume (as opposed to in the amount owed)

Source: Monthly Report of the Federal Ministry of Finance, January 2023, Table "Entwicklung der Kreditaufnahme des Bundes (Haushalt und Sondervermögen ohne Darlehensfinanzierung im Dezember 2022", page 87, and table "Entwicklung von Umlaufvolumen, Eigenbestände und Anlagen des Wirtschaftsstabilisierungsfonds (WSF) im Dezember 2022", page 88 (https://www.bundesfinanzministerium.de/Monatsberichte/2023/01/Inhalte/Kapitel-4-Wirtschafts-und-Finanzlage/4-4-kreditaufnahme-des-bundes-und-seiner-sondervermoegen-pdf.pdf?__blob=publicationFile&v=4#:~:text=2%2C4%20Mrd.,Euro%20gegen%C3%BCberstanden.,aufnahme%20entfielen%20auf%20die%20Darlehensfinanzierung).

DEBT TABLES

1. FEDERAL BONDS (1)

Title	Interest rate (% per annum)	Year of issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
6.25% Bonds of the Federal Republic of 1994	6.25	1994	2024	12,750
6.5% Bonds of the Federal Republic of 1997	6.50	1997	2027	13,750
5.625% Bonds of the Federal Republic of 1998	5.625	1998	2028	17,000
4.75% Bonds of the Federal Republic of 1998	4.75	1998	2028	13,750
6.25% Bonds of the Federal Republic of 2000	6.25	2000	2030	11,750
5.5% Bonds of the Federal Republic of 2000	5.50	2000	2031	21,500
4.75% Bonds of the Federal Republic of 2003	4.75	2003	2034	24,500
4% Bonds of the Federal Republic of 2005	4.00	2005	2037	27,500
4.25% Bonds of the Federal Republic of 2007	4.25	2007	2039	18,500
4.75% Bonds of the Federal Republic of 2008	4.75	2008	2040	20,500
3.25% Bonds of the Federal Republic of 2010	3.25	2010	2042	19,500
2.5% Bonds of the Federal Republic of 2012	2.50	2012	2044	29,500
1.5% Bonds of the Federal Republic of 2013	1.50	2013	2023	20,500
1.5% Bonds of the Federal Republic of 2013	1.50	2013	2023	22,500

Title	Interest rate (% per annum)	Year of issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
2% Bonds of the Federal Republic of 2013	2.00	2013	2023	22,500
1.75% Bonds of the Federal Republic of 2014	1.75	2014	2024	22,500
2.5% Bonds of the Federal Republic of 2014	2.50	2014	2046	31,500
1.5% Bonds of the Federal Republic of 2014	1.50	2014	2024	22,500
1% Bonds of the Federal Republic of 2014	1.00	2014	2024	22,500
0.5% Bonds of the Federal Republic of 2015	0.50	2015	2025	30,500
1% Bonds of the Federal Republic of 2015	1.00	2015	2025	30,500
0.5% Bonds of the Federal Republic of 2016	0.50	2016	2026	33,500
0% Bonds of the Federal Republic of 2016	0.00	2016	2026	32,500
0.25% Bonds of the Federal Republic of 2017	0.25	2017	2027	30,500
0.5% Bonds of the Federal Republic of 2017	0.50	2017	2027	32,500
1.25% Bonds of the Federal Republic of 2017	1.25	2017	2048	34,500
0.5% Bonds of the Federal Republic of 2018	0.50	2018	2028	28,500
0.25% Bonds of the Federal Republic of 2018	0.25	2018	2028	28,500
0.25% Bonds of the Federal Republic of 2019	0.25	2019	2029	29,500
0.00% Bonds of the Federal Republic of 2019	0.00	2019	2029	29,500
0.00% Bonds of the Federal Republic of 2019	0.00	2019	2050	34,500
0.00% Bonds of the Federal Republic of 2020	0.00	2020	2030	28,000
0.00% Bonds of the Federal Republic of 2020	0.00	2020	2035	22,500
0.00% Bonds of the Federal Republic of 2020	0.00	2020	2027	22,000
0.00% Bonds of the Federal Republic of 2020	0.00	2020	2030	33,500
0.00% Bonds of the Federal Republic of 2021	0.00	2021	2028	27,000
0.00% Bonds of the Federal Republic of 2021	0.00	2021	2031	28,000
0.00% Bonds of the Federal Republic of 2021	0.00	2021	2031	32,000
0.00% Bonds of the Federal Republic of 2021	0.00	2021	2036	25,000
0.00% Bonds of the Federal Republic of 2021	0.00	2021	2052	19,000
0.00% Bonds of the Federal Republic of 2022	0.00	2022	2032	31,000
1.70% Bonds of the Federal Republic of 2022	1.70	2022	2032	28,000
1.00% Bonds of the Federal Republic of 2022	1.00	2022	2038	11,500
2.10% Bonds of the Federal Republic of 2022	2.10	2022	2029	8,000
1.80% Bonds of the Federal Republic of 2022	1.80	2022	2053	5,000
Total Federal Bonds				1,090,500

(1) Federal Bonds (*Bundesanleihen*) are evidenced by book entry, and no certificates are issued. Maturities are 7 to 30 years. No redemption prior to maturity; including principal strips.

2. GREEN FEDERAL BONDS (1)

Title	Interest rate (% per annum)	Year of issue	Maturity	Aggregate principal amount outstanding as of December 31, 2021 (EUR in millions)
0.00% Green Bonds of the Federal Republic of 2020	0.00	2020	2030	9,500
0.00% Green Bonds of the Federal Republic of 2021	0.00	2021	2031	9,000
0.00% Green Bonds of the Federal Republic of 2021	0.00	2021	2050	10,000
Total Green Federal Bonds				28,500

(1) Federal Bonds (*Bundesanleihen*) are evidenced by book entry, and no certificates are issued. Maturities are 7 to 30 years. No redemption prior to maturity; including principal strips.

3. INFLATION-LINKED SECURITIES (1)

Title	Interest rate (% per annum)	Year of issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
0.10% Inflation-linked Bonds of the Federal Republic of 2012	0.10	2012	2023	16,500
0.50% Inflation-linked Bonds of the Federal Republic of 2014	0.50	2014	2030	22,150
0.10% Inflation-linked Bonds of the Federal Republic of 2015	0.10	2015	2026	18,700
0.10% Inflation-linked Bonds of the Federal Republic of 2015	0.10	2015	2046	12,800
0.10% Inflation-linked Bonds of the Federal Republic of 2021	0.10	2021	2033	7,000
Total Inflation-linked Securities				77,150

(1) Inflation-linked Securities (*Inflationsindexierte Bundeswertpapiere*) are evidenced by book entry, and no certificates are issued. Maturities are 5 to 30 years. No redemption prior to maturity.

4. FEDERAL NOTES (1)

Title	Interest rate (% per annum)	Year of issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
0.00% Bonds of 2018-Series 177	0.00	2018	2023	18,500
0.00% Bonds of 2018-Series 178	0.00	2018	2023	18,500
0.00% Bonds of 2019-Series 179	0.00	2019	2024	23,500
0.00% Bonds of 2019-Series 180	0.00	2019	2024	22,500
0.00% Bonds of 2020-Series 181	0.00	2020	2025	23,000
0.00% Bonds of 2020-Series 182	0.00	2020	2025	25,000
0.00% Bonds of 2021-Series 183	0.00	2021	2026	28,000
0.00% Bonds of 2021-Series 184	0.00	2021	2026	24,000
0.00% Bonds of 2022-Series 185	0.00	2022	2027	22,000
1.30% Bonds of 2022-Series 186	1.30	2022	2027	27,000
Total Federal Notes				232,000

(1) Federal Notes (*Bundesobligationen*) are evidenced by book entry, and no certificates are issued. Maturities are approximately five years. No redemption prior to maturity.

5. GREEN FEDERAL NOTES (1)

Title	Interest rate (% per annum)	Year of issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
0.00% Green Bonds of 2020	0.00	2020	2025	5,000
1.30% Green Bonds of 2022	1.30	2022	2027	5,000
Total Federal Notes				10,000

(1) Federal Notes (*Bundesobligationen*) are evidenced by book entry, and no certificates are issued. Maturities are approximately five years. No redemption prior to maturity.

6. FEDERAL TREASURY NOTES (1)

Title	Interest Rate (% per annum)	Year of Issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
0.00% Notes of 2021	0.00	2021	2023	16,000
0.00% Notes of 2021 (II)	0.00	2021	2023	16,000
0.00% Notes of 2021 (III)	0.00	2021	2023	16,000
0.00% Notes of 2021 (IV)	0.00	2021	2023	18,000
0.00% Notes of 2022	0.00	2022	2024	19,500
0.20% Notes of 2022 (II)	0.20	2022	2024	17,000
0.40% Notes of 2022 (III)	0.40	2022	2024	17,000
2.20% Notes of 2022 (IV)	2.20	2022	2024	11,000
Total Federal Treasury Notes				130,500

(1) Federal Treasury Notes (*Bundesschatzanweisungen*) are evidenced by book-entry, and no certificates are issued. Maturities are two years. No redemption prior to maturity.

7. TREASURY DISCOUNT PAPER (1)

Treasury Discount Paper	Interest Rate (2) (% per annum)	Year of Issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
	-0.64 to 2.26	2022	2023	139,000

(1) Treasury Discount Papers (*Unverzinsliche Schatzanweisungen*) are issued at a discount and repaid at par value on the maturity date. No interest payments are made during the term of the paper. The papers are auctioned and intended for institutional investors. Maturities range from six months to twelve months. No redemption is permitted prior to maturity.

(2) Reflects annual interest rate paid to the holder by way of the initial issue discount. No redemption is permitted prior to maturity.

8. BORROWERS' NOTE LOANS (3)

Borrower's note loans (Schuldscheindarlehen)	Interest Rate (% per annum)	Year of Issue	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
	3.46 to 5.05	2003 to 2007	2023 to 2037	5,360

(1) Borrowers' note loans (*Schuldscheindarlehen*) are an instrument of the German capital market where the lending entity, generally an institutional investor, receives a certificate evidencing its loan to the borrower and the term of such loans. The certificate generally authorizes at least three assignments. No redemption is permitted prior to maturity.

Source for Debt Table 1 to 8: Federal Republic of Germany – Finance Agency, “Einzelaufstellung aller Bundeswertpapiere seit 1995” (<https://www.deutsche-finanzenagentur.de/downloadcenter>).

9. OTHER LIABILITIES

Old debt (1)	Interest Rate (% per annum)	Year of inurrence	Maturity	Aggregate principal amount outstanding as of December 31, 2022 (EUR in millions)
	0.00 to 3.00	Various	Various	4,474

(1) Includes mainly equalization and covering claims of the Deutsche Bundesbank, other banks and insurance companies in connection with the currency reform of 1948 as well as liabilities of the Federal Government to repay amounts received from the Investitionshilfeabgabe, a special duty levied on income, the proceeds of which were to be used to promote investments.

Source: Monthly Report of the Federal Ministry of Finance, January 2023, Table “Entwicklung der Kreditaufnahme des Bundes (Haushalt und Sondervermögen ohne Darlehensfinanzierung) im Dezember 2022”, page 87 (https://www.bundesfinanzministerium.de/Monatsberichte/2023/01/Inhalte/Kapitel-4-Wirtschafts-und-Finanzlage/4-4-kreditaufnahme-des-bundes-und-seiner-sondervermoegen-pdf.pdf?__blob=publicationFile&v=4#:~:text=2%2C4%20Mrd.,Euro%20gegen%C3%BCberstanden.,aufnahme%20entfielen%20auf%20die%20Darlehensfinanzierung.).

10. SUPPLEMENTARY FEDERAL NOTE

<u>Title</u>	<u>Interest Rate</u> (% per annum)	<u>Year of Issue</u>	<u>Maturity</u>	<u>Aggregate principal amount outstanding as of December 31, 2022</u> (EUR in millions)
Supplementary Federal Note (<i>Zusatzemission des Bundes</i>) for the ESF (1)	2.40	2022	2023	169,775

- (1) ESF = Economic Stabilisation Fund (*WSF, Wirtschaftsstabilisierungsfonds*). The Supplementary Federal Note was issued outside of the regular issuance calendar activities. It was not and will not be sold on the market and was instead transferred directly into the portfolio of the Economic Stabilisation Fund. The two entries for the items “Supplementary Federal Note for the ESF” and “ESF investment in Federal Securities” will therefore always be matching to a balance of zero.

Source: Monthly Report of the Federal Ministry of Finance, January 2023, Table “Entwicklung von Umlaufvolumen, Eigenbestände und Anlagen des Wirtschaftsstabilisierungsfonds (WSF) im Dezember 2022”, page 88

(https://www.bundesfinanzministerium.de/Monatsberichte/2023/01/Inhalte/Kapitel-4-Wirtschafts-und-Finanzlage/4-4-kreditaufnahme-des-bundes-und-seiner-sondervermoege-pd.pdf?__blob=publicationFile&v=4#:~:text=2%2C4%20Mrd.,Euro%20gegen%C3%BCberstanden.,aufnahme%20entfielen%20auf%20die%20Darlehensfinanzierung); Federal Republic of Germany, Finance Agency, Announcement, Supplementary Federal note, press release of December 28, 2022 (https://www.deutsche-finanzagentur.de/fileadmin/user_upload/Pressenotiz/20221228_PN_1_N_OTH_DE000BU4W000_en.pdf).

II. GUARANTEES BY THE FEDERAL GOVERNMENT (1)

Purpose of Guarantees	Aggregate principal amount outstanding as of December 31,	
	2021	2020
	(EUR in millions)	
Export finance loans (including rescheduled loans) (2)	128,049	125,328
Untied loans; direct foreign investments by German companies; Loans of the European Investment Bank to non-EU borrowers	35,133	37,027
Loans in connection market organization and stocking measures	0	0
Loans to domestic corporations and for projects in areas of agriculture, fishing and housing construction	267,997	269,036
Contributions to international financing institutions	75,493	68,637
Co-financing of bilateral projects of German financial co-operation	28,959	29,977
Successor agencies to <i>Treuhandanstalt</i>	1,009	1,009
Interest compensation guarantees	15,000	15,000
Total guarantees pursuant to the 2020 German Budget Act	551,640	546,014
Guarantee for a loan to Greece according to the German Financial Stability Act	22,400	22,400
Loan guarantees under the Act on Guarantees pertaining to the European Financial Stability Facility	89,412	91,526
Warranties in connection with the SURE-Warranty Act as of July 10, 2020	6,384	6,384
Total guarantees	670,586	666,324

- (1) Does not include guarantees under the KfW Law with respect to money borrowed, bonds issued and derivative transactions entered into by KfW. For information relating to KfW's borrowings, see "KfW—Business—Financial Markets—Funding."
- (2) Includes export finance loans extended by KfW IPEX-Bank guaranteed by the Federal Republic through HERMES, the official German export credit insurer. For information relating to loans extended by KfW IPEX-Bank benefiting from HERMES coverage, see "KfW—Business—Export and Project Finance (KfW IPEX-Bank)—Business."

Source: Bundesministerium der Finanzen, *Finanzbericht 2023, Overview 8.1.3, page 308-310*
(https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/finanzbericht-2023.pdf?__blob=publicationFile&v=4).

III. LIABILITIES TO INTERNATIONAL FINANCIAL ORGANIZATIONS

The Federal Republic is obligated to contribute to the capital subscriptions and, in some cases, to additional financing, according to the requirements of each respective membership. Such contributions were in many cases stated initially in 1944 with one U.S. dollar being an equivalent to 0.888671 grams of gold, and later – with the creation of the Special Drawing Right ("SDR") – being an equivalent to the SDR at the same value. The value of the SDR, the possible inclusion of new currencies in the basket, the initial weight of each of these currencies in the basket, and the financial instruments used in determining the interest rate on the SDR are reviewed every five years. With effect from August 1, 2022, the SDR basket consists of five currencies with the following initial weights: U.S. dollar (43%), Euro (29%), Chinese yuan (12%), Japanese yen (8%) and Pound sterling (7%).

SUBSCRIPTIONS OR COMMITMENTS BY THE FEDERAL REPUBLIC
TO INTERNATIONAL ORGANIZATIONS AS OF END OF DECEMBER 2022

Name of organization	Subscription or commitment by the Federal Republic (1)	Amount paid in (USD in millions)
IMF (2)	37,277.2	37,277.2
International Bank for Reconstruction and Development (IBRD) (3)	13,773.7	977.2
International Development Association (IDA) (3)	29,672.6	29,672.6
International Finance Corporation (IFC) (3)	1,150.2	1,150.2
European Investment Bank (EIB) (4)	49,834.1	4,444.8
African Development Bank (AfDB) (3)	7,917.9	366.3
African Development Fund (AfDF) (3)	4,735.7	4,723.6
Asian Development Bank (AsDB) (3)	6,111.3	305.6
Asian Development Fund (AsDF) (3)	2,002.0	1,873.0
Inter-American Development Bank (IDB) (3)	3,368.7	242.3
Inter-American Investment Corporation (IIC) (3)	23.0	23.0
Fund for Special Operations (FSO) (3)	—	—
International Fund for Agricultural Development (IFAD) (3)	792,342	731,389
Caribbean Development Bank (CDB) (3)	106.6	23.6
Special Development Fund of the Caribbean Development Bank (SDF) (3)	126.1	114.0
European Bank for Reconstruction and Development (EBRD) (4)	2,726.7	568.7
Council of Europe Development Bank (CEB) (4)	976.7	108.4
Asian Infrastructure Investment Bank (AIIB) (3)	4,484.2	896.8

- (1) Subscriptions are in part committed in USD, SDR or EUR. SDR or EUR commitments are converted to USD at year-end exchange rates, except that certain SDR commitments are converted at the fixed conversion rate of SDR 1 = USD 1.39959.
- (2) Quota in SDR: 26,634.4 Mio. SDR. Year-end value 2021 1 SDR = USD 1.399590. Source: computation provided by the Ministry of Finance based on data provided by the IMF; the subscription (quota) is fully paid in by the Deutsche Bundesbank. The foreign currency part of the quota (25% of the subscription) and the Deutsche Bundesbank's further contributions to the IMF's financing are part of the foreign currency reserves of the Deutsche Bundesbank. The government does not provide any guarantees or provisions for risks of IMF loans.
- (3) Source: computation provided by the Ministry of Finance and the Ministry for Economic Cooperation and Development.
- (4) Source: computation provided by the Ministry of Finance based on euro exchange rate of the European Central Bank of EUR 1 per USD 1.0666 in effect on December 31, 2022.



Combined Management Report



<u>Basic information on KfW Group</u>	3
<u>Overview</u>	3
<u>Strategic objectives 2027</u>	5
<u>Internal management system</u>	5
<u>Alternative key financial figures used</u>	7
 <u>Economic report</u>	 9
<u>General economic environment</u>	9
<u>Development of KfW Group</u>	11
<u>Development of earnings position</u>	14
<u>Development of net assets</u>	18
<u>Development of financial position</u>	19
 <u>Risk report</u>	 21
<u>Overview of key indicators</u>	21
<u>Basic principles and objectives of risk management</u>	23
<u>Current developments</u>	23
<u>Organisation of risk management and monitoring</u>	25
<u>Overview</u>	27
<u>Internal capital adequacy assessment process</u>	28
<u>Types of risk</u>	33
<u>Credit risk</u>	33
<u>Equity investment risks</u>	39
<u>Market price risk</u>	40
<u>Liquidity risk</u>	41
<u>Internal liquidity adequacy assessment process ("ILAAP")</u>	42
<u>Operational risk and business continuity management</u>	43
<u>Additional internal control procedures</u>	47
 <u>Forecast and opportunity report</u>	 50
<u>General economic environment and development trends</u>	50
<u>New business projections</u>	52
<u>Funding projections</u>	55
<u>Earnings projections</u>	56
<u>Overall conclusion</u>	56
 <u>Notes to the KfW annual financial statements prepared in accordance with the German Commercial Code</u>	 57
<u>Development of KfW</u>	57
<u>Development of earnings position</u>	57
<u>Development of net assets</u>	60
<u>Development of financial position</u>	61
 <u>Declaration of compliance</u>	 63
 <u>Non-financial statements</u>	 63

Basic information on KfW Group

The KfW management report is combined with KfW's group management report in accordance with Section 315 (5) in conjunction with Section 298 (2) of the German Commercial Code (*Handelsgesetzbuch – "HGB"*). The combined management report is included in the KfW Group financial report and is submitted to the operator of the electronic Federal Gazette (*Bundesanzeiger*) and disclosed in the *Bundesanzeiger*.

The KfW annual financial statements prepared in accordance with the German Commercial Code and the KfW Group financial report are also available online at www.kfw.de.

Information on KfW as the parent company can be found under a separate section, "Notes to the KfW annual financial statements prepared in accordance with the German Commercial Code".

The KfW consolidated financial statements were prepared in accordance with the provisions of Section 315e HGB in conjunction with the International Financial Reporting Standards (IFRS) as applicable within the European Union. With the exception of the HGB information in the section "Notes to the KfW annual financial statements prepared in accordance with the German Commercial Code", all financial figures in this combined management report, including the comparative figures for the previous year, are reported in accordance with IFRS.

Overview

KfW Group consists of KfW and six consolidated subsidiaries. KfW is a promotional bank of the Federal Republic of Germany – which owns 80% of KfW while the German federal states own 20%. The institutional framework for the promotional mandate, including the Federal Republic of Germany's liability for KfW's obligations, is defined in the Law Concerning KfW (KfW Law).

KfW promotes sustainable improvement of economic, environmental and social conditions around the world, with an emphasis on the German economy. The focus of KfW's promotional activities is on the promotional areas anchored in KfW's strategic objectives. A variety of financing products and services address, in particular, the areas of climate change and environment, digitalisation and innovation, globalisation, social change and financing of small and medium-sized German enterprises (SMEs). The domestic promotional lending business with enterprises and private individuals is characterised by the on-lending strategy, pursuant to which KfW extends loans to commercial banks, which, in turn, lend the funds to the ultimate borrowers. KfW thus does not have its own network of branch offices. It funds its business activities via the national and international money and capital markets. The group's main operating subsidiaries are (i) KfW IPEX-Bank, which provides export and project finance, and (ii) DEG, which is active in promoting the private sector in developing countries and emerging economies. KfW Capital invests in German and European venture capital and venture debt funds in order to strengthen venture and early growth financing in Germany.

In accordance with the business sector structure for KfW Group, the sectors and their main products and services can be presented as follows:

Mittelstandsbank & Private Kunden (SME Bank & Private Clients)	– Start-up financing – Financing of general corporate investments and investments in innovation, energy and environmental protection – Education financing – Financing for housing construction, conversion and refurbishment
Individualfinanzierung & Öffentliche Kunden (Customised Finance & Public Clients)	– Financing of municipal and social infrastructure – Customised corporate financing with equity and debt capital – Customised financing of banks and promotional institutions of the federal states – Mandated transactions for energy suppliers
KfW Capital	– Investments in German and European venture capital and venture debt funds
Export and project finance	– Financing of German and European export activities – Financing of projects and investments which are of special interest for Germany and Europe
KfW Development Bank	– Promotion of developing countries and emerging economies on behalf of the Federal Government with budget funds and complementary market funds raised by KfW
DEG	– Financing provided by DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH in developing countries and emerging economies (private enterprise financing)
Financial markets	– Securities and money market investments – Holding arrangements for the Federal Republic of Germany – Transactions mandated by the Federal Government, loan granted to Greece – Funding
Head office	– Central interest rate and currency management – Strategic equity investments

Composition of the KfW Group Total assets (IFRS, before consolidation)

	Total assets as of 31 Dec. 2022 EUR in millions	Total assets as of 31 Dec. 2021 EUR in millions
KfW, Frankfurt am Main, Germany	550,505	546,648
Subsidiaries		
KfW IPEX-Bank GmbH, Frankfurt am Main (KfW IPEX-Bank), Germany	27,643	28,860
DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH, Cologne (DEG), Germany	7,817	7,310
KfW Beteiligungsholding GmbH, Bonn, Germany	3,212	3,129
KfW Capital GmbH & Co. KG, Frankfurt am Main, Germany	908	754
Interkonnektor GmbH, Frankfurt am Main, Germany	316	357
IPEX Asia Ltd., Singapore	13	–
Investments accounted for using the equity method		
Microfinance Enhancement Facility S.A., Luxembourg (16.5%), Luxembourg	695	641
Green for Growth Fund, Southeast Europe S.A., Luxembourg (10.2%), Luxembourg	732	689
coparion GmbH & Co. KG, Cologne (16.4%), Germany	359	294
	31 Dec. 2022	31 Dec. 2021
DC Nordseekabel GmbH & Co. KG, Bayreuth (50.0%), Germany	854	895

Strategic objectives 2027

KfWplus is the group's strategic transformation agenda, which will serve as the basis for realising KfW's goal of becoming THE digital transformation and promotional bank. The strategic objectives are consistent with KfWplus and implement the control components, which are intended to enable comprehensive control and the achievement of targets. To this end, the **strategic objectives** define KfW's targeted medium-term positioning. This strategic framework encompasses top-level objectives at group level and serves as a central and binding reference for the strategic orientation of all business sectors, with a five-year horizon. The strategic objectives for 2027 were adopted in 2022.

KfW's **primary objective**, or purpose, is sustainable promotion, which means KfW aims to transform the economy and society to improve economic, environmental and social living conditions around the world. This primary objective is supported by the two promotional principles of subsidiarity and sustainability.

Subsidiarity means that KfW focuses on compensating market weaknesses. Putting this principle into practice, KfW Group strives to maintain high-quality promotional activities and to mobilise private capital, to ensure that the goal of transforming the economy and society is successfully achieved.

With regard to the principle of sustainability, KfW aims to achieve a ranking among the top five national and international promotional banks in the relevant sustainability ratings (Sustainalytics, ISS ESG and MSCI ESG Ratings). In addition, the contributions of KfW's financing activities to the UN's Sustainable Development Goals ("SDGs") and to 1.5 °C compatibility are monitored as part of fulfilling the climate goals.

Within the framework of these promotional principles, KfW finances projects under the motto "promoting transformation – boosting resilience" in support of the dual transformation – the key challenge of this decade. This means further expanding the relevant promotional areas of climate change and the environment (environmental share of financing >38%), and digitalisation and innovation. Promotional activities linked to globalisation and social change, moreover, continue to be ongoing tasks for KfW. In domestic promotion, KfW still aims at achieving an SME ratio of >40% in financing small and medium-sized German enterprises.

The primary objective, or purpose, is complemented by **secondary objectives** in the areas of digitalisation and agility, operating model and governance, and customer and employee centricity, which help to maintain and support a top-performing KfW. The secondary objectives comprise the same focus areas as in the prior year, with more emphasis on internal digitalisation.

Internal management system

KfW Group has an integrated strategy and planning process. Conceived as a group-wide strategy process, group business sector planning is KfW Group's central planning and management tool. Group business sector planning consists of three consecutive sub-processes performed every year: defining objectives, implementation and quality assurance and finalisation. The overall strategy and planning process includes the collaboration of staff responsible for planning in all areas.

Objectives: The KfWplus transformation agenda and the strategic objectives derived from it, both of which are set by the Executive Board, form the basis for strategic planning. These strategic objectives serve as a roadmap for KfW Group, laying out the direction in which KfW would like to develop over the next five years. They define KfW Group's medium-term targeted positioning and set top-level objectives for the entire bank. The strategic objectives are reviewed annually for relevance, completeness and aspiration level and are adjusted where necessary – for example, due to changed parameters or newly determined focus areas. Efforts are made, however, to maintain a high degree of consistency to ensure that there are no fundamental changes made to the strategic road map in the course of the annual review. Within this strategic framework and the strategic focus areas set by the Executive Board, major medium-term strategic initiatives are developed on a base case scenario by the business sectors and subsidiaries, taking into account their statutory requirements. Promised benefits (such as project efficiencies and cost reduction measures) are also considered in business sector planning. Assumptions regarding the future development of both external factors (including market development, regulatory requirements, the competitive situation and customer behaviour) and internal factors and resources (including human, technical and organisational resources, promotional expense, primary cost planning and tied-up capital) as well as targeted earnings levels, are made based on a risk and opportunity assessment. This analysis involves an evaluation of the key business and revenue drivers for each group business sector, as well as for the group as a whole. The business sectors are also called upon to address the environmental, social and governance risks ("ESG" risks) resulting from their business activity and new (strategic) initiatives. As risk drivers, these can have

a considerable impact on the likelihood of occurrence or the extent of typical banking risk types. Although ESG risks primarily affect the lending and equity finance business of KfW Group, they can also potentially give rise to consequential risks, such as reputational risk. The central departments (e.g. information technology, human resources and central services) play important roles in achieving the strategic objectives. By involving these departments, their own strategies are aligned with the strategic objectives. The first regular capital budget in the base case is prepared on a multi-year horizon on this basis. In this way, any capital bottlenecks resulting from strategic considerations or changed parameters can be identified and mitigated by resolving and implementing appropriate measures. The Executive Board defines top-down objectives for each department and business sector (with regard to promotion, risk and finances) for the entire planning period based on the assessment and prioritisation of all strategic initiatives from a group perspective. Strategic group-level planning is complemented by business strategy scenario analyses. A scenario analysis is a "what if" analysis of a specific, plausible scenario, looking at the interaction of exogenous influencing factors and translating the results of the analysis into management-relevant parameters in new business, earnings and risk / capital. Such scenarios assist in the process of identifying potential risks and opportunities for promotional targets and KfW Group's profitability and risk-bearing capacity, and enable these factors to be considered in the further planning process if necessary.

Implementation and quality assurance: The business sectors plan their new business, risks and earnings, and each department its budgets, and staffing in the form of full time equivalents ("FTEs"), based on the top-down objectives defined by the Executive Board, taking into account any changes in external or internal factors and in close collaboration with Accounting. These plans are checked for consistency with the objectives of the group and the business sectors/departments. The interest rate forecast plays a key role in shaping KfW Group's earnings position. Hence, both a high and a low interest rate scenario are also examined in addition to the anticipated base case. The plans are also assessed for future risk-bearing capacity in a second round of regular capital budgeting in a base and stress case over a multi-year horizon.

Finalisation: The Executive Board approves the resulting budget or has plans fine-tuned in a revision round if necessary. The key conclusions from the planning process are incorporated into the business and risk strategies. The management has overall responsibility for formulating and adopting both strategies. The business strategy comprises the group's strategic objectives for its main business activities as well as important internal and external factors, which are included in the strategy process. It also contains the business sectors' contribution to the strategic objectives and the measures for achieving each objective. Moreover, the business strategy combines the budget at the group and business sector levels. The Executive Board sets out KfW Group's risk policies in its risk strategy, which is consistent with the business strategy. KfW Group has defined strategic risk objectives for factors including risk-bearing capacity and liquidity. The main risk management approaches and risk tolerance levels are also incorporated into the risk strategy as a basis for operational risk management. There is regular consultation with the Risk Controlling department to ensure consistency between the business and risk strategies. The group business sector planning process ends when the Executive Board has adopted a final budget for the entire planning period, including the future capital requirement and the business and risk strategies. The budget is then presented to the supervisory body (Board of Supervisory Directors) for approval, along with the business and risk strategy for discussion. After the Board of Supervisory Directors has decided on the business and risk strategy, it is appropriately communicated to the staff.

The adoption of the business sector planning serves as a foundation for the group's qualitative and quantitative objectives. The Executive Board reviews target achievement both on a regular and on an ad hoc basis during each financial year. The assumptions concerning external and internal factors made when determining the business strategy are also subject to regular checks. The development of relevant control variables, their attainment and the reasons for any shortfalls are analysed as part of strategic management. Strategic assumptions are reviewed and a systematic variance analysis of early objectives and forecasts is performed at the beginning of every year. Ad hoc issues of strategic relevance are also addressed in consultation with the group's departments, and recommendations for action concerning potential strategy adjustments or optimisation of the use of resources are made to the Executive Board by means of the strategic performance report. The results of the analysis are included in further strategy discussions and strategic planning processes. At mid-year, the integrated forecasting process serves as a comprehensive basis for interim management input on quantitative group variables of strategic importance in line with the strategic objectives (new business, risk and earnings in respect of funding opportunities), while providing a well-founded guide to achieving planned objectives. The achievement of objectives is regularly monitored by the Board of Supervisory Directors based on reports submitted under the KfW Bylaws. The commentary in these reports outlines analyses of causes and any potential plans for action. Detailed reports are prepared on a monthly or quarterly basis as part of

financial controlling. These comprehensive detailed analyses at group and business sector level comprise earnings and cost developments and are reported to specific departments. Additionally, analyses of significant relevance to overall group performance are also presented directly to the Executive Board. The risk controlling function is implemented alongside strategic and financial controlling (see the risk report chapter). Early warning systems have been established and mitigation measures defined for all material risk types in line with the risk management requirements set out in the risk strategy. All controlling and monitoring approaches are integrated into regular risk reporting to the Executive Board. The Board of Supervisory Directors receives a risk report quarterly.

Alternative key financial figures used

The combined management report contains financial figures that are not defined in either the HGB or IFRS accounting standards. In its strategic objectives, KfW uses key indicators prescribed by accounting standards and supervisory regulations as well as key figures that are geared towards promotion as the core business activity. It also uses key figures, in which the temporary effects on results determined and reported in the consolidated financial statements in accordance with IFRS, and which KfW does not consider representative, are adjusted.

KfW has defined the following alternative key financial figures:

Promotional business volume

Promotional business volume refers to the commitments of each business sector during the reporting period. In addition to the lending commitments shown in the statement of financial position, promotional business volume comprises loans from Federal Government funds for promotion of developing countries and emerging economies – which are accounted for as trust activities – financial guarantees, equity financing and securities purchases (in the green bonds asset class). Promotional business volume also includes grants committed as part of development aid and in domestic promotional programmes. Allocation to the promotional business volume for the current financial year is generally based on the commitment date of each loan, financial guarantee and grant, and the transaction date of the equity finance and securities transactions. On the other hand, allocation of general funding and global loans to the promotional institutions of the federal states (*Landesförderinstitute – “LFI”*) and BAföG government loans is based on the individual drawdown volume and date, instead of the total volume of the contract at the time of commitment. In the lending business, financing amounts denominated in foreign currency are converted into euros at the exchange rate on the commitment date, whereas in the securities and equity finance business, the conversion generally occurs at the rate on the transaction date.

See the “Development of KfW Group” economic report or segment reports for a breakdown of promotional business volume by individual segment.

Promotional expense

Promotional expense is understood to mean certain expenses from the two business sectors *Mittelstandsbank & Privatkunden (SME Bank & Private Clients)* and *Individualfinanzierung & Öffentliche Kunden (Customised Finance & Public Clients)* incurred to achieve KfW’s promotional objectives.

Interest rate reductions accounted for at present value are the key component of KfW’s promotional expenses. KfW grants these reductions for certain domestic promotional loans for new business during the first fixed interest rate period in addition to passing on KfW’s favourable funding conditions (obtained on the strength of its triple-A rating). The difference between the fair value of these promotional loans and the transaction value during the first fixed interest rate period, due to the interest rate being below the market rate, is recognised in profit or loss as an interest expense and accounted for as an adjustment to the carrying amount under the item Financial assets at amortised cost. In addition, the accumulated interest rate reductions over the fixed interest rate period are recognised through profit or loss in Net interest income (see the relevant notes on KfW’s promotional lending business, financial assets at amortised cost, and provisions).

An additional promotional component (in commission expense) comprises the expense paid in the form of upfront fees to sales partners for processing microloans. Promotional expense also contains disposable and product-related marketing and sales expenses (administrative expense), expenses for innovative digital promotional approaches (commission and administrative expense), and promotional grants awarded as a supplement to the lending business (other operating expense).

Cost/income ratio (before promotional expense)

The cost/income ratio (before promotional expense) comprises administrative expense (excluding promotional expense) in relation to net interest and commission income before promotional expense.

The cost/income ratio ("CIR") shows costs in relation to income and is thus a measure of efficiency. To enable a comparison of the CIR with other (non-promotional) institutions, an adjustment for the components of KfW's promotional business results is made to the numerator (administrative expense) and denominator (net interest and commission income).

Consolidated profit before IFRS effects

Consolidated profit before IFRS effects from hedging is another key financial figure based on Consolidated profit in accordance with IFRS. Derivative financial instruments are entered into for hedging purposes. Under IFRS, the requirements for the recognition and valuation of derivatives and hedges give rise to temporary net gains or losses that are offset over the entire term. In KfW's opinion, such temporary effects on results are not representative as they are caused solely by economically effective hedging relationships.

Consequently, the following reconciliations are performed by eliminating temporary contributions to profit and loss as follows:

- Valuation results from micro and macro hedge accounting.
- Net gains or losses from the use of the fair value option to avoid an accounting mismatch in the case of funding including related hedging derivatives.
- Net gains or losses from the fair value accounting of hedges with high economic effectiveness but not qualifying for hedge accounting.
- Net gains or losses from foreign currency translation of foreign currency positions, in accordance with recognition and valuation requirements for derivatives and hedging relationships.
- Net gains or losses from changes to deferred taxes on credit rating-related effects of other derivatives from subsidiaries.

Economic report

General economic environment

Global real domestic product ("GDP") increased by 3.4% year on year in 2022 according to estimates by the International Monetary Fund ("IMF"). Global real GDP thus grew at a positive rate in 2022, albeit more slowly than in 2021. This trend is apparent for industrialised nations as well as for developing countries and emerging economies. According to the IMF, this broad-based downturn in the global economy is due to the impact of the war in Ukraine, including its effects on international food and energy prices as well as uncertainty about the energy supply in Europe, the ongoing consequences of COVID-19 outbreaks, particularly in China, and higher-than-expected inflation around the world along with the related monetary policy response of central banks and tightening of financing conditions. Before the Russian attack on Ukraine at the end of February 2022, the Organisation for Economic Co-operation and Development ("OECD") expected the economic situation to normalise following the above-average growth in 2021 in the wake of the recovery from the coronavirus pandemic.

Gross domestic product at constant prices

	2022 estimate	2021	2012 – 2021 average
Year-on-year change in %			
Global economy ¹⁾	3.4	6.0	3.0
Industrialised countries ¹⁾	2.7	5.2	1.6
Developing countries and emerging economies ¹⁾	3.9	6.6	4.1

¹⁾ The IMF aggregates the annual growth rates of GDP at constant prices of each country on the basis of the shares of country-specific GDP at purchasing power parities in the corresponding global aggregate to the growth rate of global real GDP, for industrialised countries as well as developing countries and emerging economies. The average is calculated as the geometric mean of annual growth rates.

The euro area economy grew at an above-average rate last year. Measured in terms of price-adjusted GDP, economic output rose by 3.5% year on year in 2022, after 2021 recorded the most significant increase in price-adjusted GDP since 1999 (5.3%) (see table on gross domestic product at constant prices, year-on-year change). The European Commission attributed growth in the first three quarters of 2022 to the easing of pandemic-induced restrictions. Demand by private households for contact-intensive services, such as those from the hospitality sector, increased. Towards the end of the year, however, the strain on euro area economic activity associated with the Ukraine war became more significant. High inflation eroded the purchasing power of household incomes, while energy costs reduced corporate profits. At the same time, external demand also cooled. Together with high uncertainty, this environment dampened consumer and investment demand. Nevertheless, the euro area's price-adjusted GDP in 2022 was back above the pre-pandemic level.

Gross domestic product at constant prices, year-on-year change

	2022 in %	2021 in %	2012–2021 average in %	1999–2021 maximum in %
Euro area	3.5	5.3	0.9	5.3 ¹⁾
Germany	1.8	2.6	1.0	4.2 ²⁾

¹⁾ 2021 ²⁾ 2010

Against the backdrop of the Ukraine war, rising prices, in particular for energy and food, rising interest rates, persistent global supply chain issues, the scaling back of most public health and social measures to contain the coronavirus pandemic, price-adjusted GDP in Germany grew by 1.8% in 2022 compared the previous year after shrinking by 2.6% in 2021 and having grown by 1.0% per year on average during the preceding ten years (from 2012 up to and including 2021) (see table on gross domestic product at constant prices, year-on-year change). Price-adjusted private consumption expenditure (+4.6%), price-adjusted government final consumption expenditure (+1.1%), price-adjusted gross capital formation in other products (+2.1%) and price-adjusted gross fixed capital formation in machinery and equipment (+2.5%) provided positive momentum for the rate of change in price-adjusted GDP in 2022, whereas price-adjusted gross fixed capital formation in construction fell (–1.6%). Overall, price-adjusted domestic use rose by 3.4% in 2022. Net exports detracted 1.3 percentage points from the rate of change of price-adjusted GDP in 2022, with the increase in price-adjusted exports (+3.2%) falling short that of price-adjusted imports (+6.7%). From a production perspective, price-adjusted gross value added was a positive driver for the rate of change of price-adjusted GDP in 2022 in most economic sectors, with the exception of agriculture, forestry and fishing (–4.5%) and construction (–2.3%), while manufacturing (excluding construction) stagnated (+/–0.0%). The number of people in employment located in Germany increased by 1.3% year on year in 2022 to 45.6 million.

Developments in the financial markets were dominated by high inflation rates in 2022. The Russian invasion of Ukraine sustained the momentum of already high inflation rates for energy, food and some intermediate products. The persistent inflationary macroeconomic environment in 2022 led central banks to reconsider their stance. The US Federal Reserve is well ahead, having raised the federal funds target rate range since March 2022 to 4.25%–4.5% as of the end of the year. It is gradually trimming its balance sheet of assets built up during the pandemic as part of quantitative tightening. The European Central Bank (“ECB”) discontinued its asset purchase programmes in March 2022 (pandemic emergency purchase programme, “PEPP”) and at the end of June 2022 (asset purchase programme, “APP”). The principal payments of the released assets will continue to be reinvested until the end of February 2023 in the case of the APP, and will continue to be reinvested until the end of 2024 in the case of the PEPP. The ECB plans to reduce its balance sheet volume by EUR 15 billion per month from March 2023 until end of June 2023. The ECB began its interest rate hikes at the end of July 2022. Beginning from –0.5%, it raised the deposit rate in 50 and 75 basis-point increments to 2.0% by the end of the year.

In order to reconcile the very favourable refinancing conditions for banks created during the pandemic with the changed monetary policy environment, early repayment dates were offered for targeted longer-term refinancing operations (“TLTRO III”), which will still be running until June 2023. The ECB has also raised the TLTRO rate to the average deposit rate between 22 November 2022 and either the end date or the early repayment date. The still elevated inflation rates are likely to decline over the course of 2023. According to the ECB’s own forecast, the ‘two percent target’ will not be reached again until 2025.

These developments have resulted in swap rates in the euro area and the USA rising noticeably year on year in 2022. Money market rates in both currency areas were also significantly above their prior-year averages. For instance, the 3-month EURIBOR averaged 0.35% in 2022 (2021: –0.55%); the 5-year EUR swap rate averaged 1.73% (2021: –0.26%); and the yield of the 10-year German government bond stood at 1.20% (2021: –0.31%). In the USA, the 3-month LIBOR was 2.4% on average for the year in 2022, compared with 0.16% in the previous year. The 5-year USD swap rate averaged 3.00% in 2022 (2021: 0.85%), and the yield on 10-year US Treasuries stood at 2.95% (2021: 1.44%). The yield curves, as measured by the difference between the yields of 10- and 2-year government bonds, developed differently for the EUR and the USD. On average in 2022, the curve slope of German government bonds was 43 bp (2021: 39 bp), while the US government bonds slope was –4 bp (2021: 117 bp).

There were also significant price corrections in global equity markets at times, particularly in the United States and the euro area. Major leading indices were down on the previous year. At 13,925 points, Germany's leading DAX index registered 2,095 points (–13%) lower than at the beginning of 2022. The key US index S&P 500 stood at 3,839 points, 957 points (–20%) lower than at the beginning of 2022.

Development of KfW Group

KfW had an exceptional promotional year in 2022. Multiple crises, such as the war in Europe and the subsequent energy price crisis, had a significant impact on the group's net assets, financial and earnings position in 2022. At the same time, KfW achieved its historically strongest promotional year in 2022 with a promotional volume of EUR 166.9 billion (2021: EUR 107.0 billion).

With a consolidated profit of EUR 1.4 billion for 2022, the bank's **earnings position** was robust and, despite the crisis environment, came in well above expectations (EUR 0.9 billion) following the previous year's earning position, which had been boosted by pent-up demand after the pandemic (EUR 2.2 billion). The operating result before valuation (before promotional expense) was, as expected, down on the previous year at EUR 1.5 billion (EUR 1.7 billion). This development was also reflected in the cost/income ratio (before promotional expense), which rose to 49.6% (2021: 45.9%) due to higher administrative expense and the overall slight decline in income from interest and commissions. The valuation result contributed slightly to consolidated profit with EUR 0.1 billion (2021: +EUR 0.8 billion). The IFRS effects from hedging relationships amounted to EUR 182 million (2021: EUR –139 million), resulting in a consolidated profit before IFRS effects of EUR 1,183 million (2021: EUR 2,354 million) from the reconciliation.

Consolidated total assets rose by EUR 3.9 billion to EUR 554.6 billion in financial year 2022. This development was largely attributable to the increase in Net loans and advances of EUR 24.9 billion to EUR 463.6 billion, of which EUR 22.4 billion came from transactions mandated on behalf of the Federal Government in order to secure Germany's energy supply. The increased liquidity holdings of EUR 13.8 billion also contributed to total asset growth. The value adjustments from macro hedge accounting trended in the opposite direction, posting a market-price-induced decline of EUR 30.5 billion. The volume of own issues reported under Certificated liabilities amounted to EUR 424.9 billion (31 Dec. 2021: EUR 447.6 billion). In addition to consolidated comprehensive income, the increase in equity of EUR 2.4 billion to EUR 36.6 billion was due to an improvement of EUR 0.9 billion in the revaluation reserve as a result of the increase in the discount rate for pension provisions.

Business performance in 2022 was largely characterised by the following developments:

A. Demand for KfW products at a historic high

With a promotional business volume of EUR 166.9 billion in 2022 (2021: EUR 107.0 billion), KfW recorded the strongest promotional year in its history. The main reason for the 56% year-on-year rise in promotional business volume is the large volume of Federal Government-mandated transactions, primarily in connection with securing Germany's energy supply. In this context, KfW, in particular, provided financing for replacement purchases of gas, to meet short-term 'marginising' liquidity requirements (obligatory collateral pledged when trading in energy) and to procure gas to maintain certain gas storage facility filling levels, which are legally required in Germany, as well as to implement the short-term emergency aid for gas and heat for advance payments in December. The Federal Government mandated these transactions in accordance with Article 2 (4) of the Law Concerning KfW (*KfW-Gesetz – "KfW Law"*) with a full federal guarantee, meaning that KfW is released from all risks and charges associated with implementing the measures. For the trust-based transactions and the emergency aid for gas and heat, KfW agreed remuneration with the Federal Government on a time and material basis. On the loan financings, KfW is entitled to upfront loan fees and percentages of commitment fees.

Total commitment volume from transactions mandated to secure the gas supply amounted to EUR 54.2 billion. Of this amount, a total of EUR 34.2 billion had been disbursed by the end of the year. Taking partial repayments or redemptions by the Federal Government into account, reported receivables amounted to EUR 22.4 billion as of 31 December 2022.

KfW's domestic promotional business had a very strong financial year with a promotional business volume of EUR 136.1 billion (2021: EUR 82.9 billion). In addition to the measures to secure Germany's energy supply, the high demand for the Federal Funding for Efficient Buildings programme of EUR 37.4 billion accounted for a large share of domestic promotional business volume. The subsidiary KfW Capital reached commitments totalling EUR 1.3 billion in 2022 (2021: EUR 0.5 billion).

International business commitments increased by 29% to a promotional business volume of EUR 30.7 billion in financial year 2022 (2021: EUR 23.8 billion). The business sector Export and project finance recorded a significant recovery in business volume with new commitments of EUR 18.1 billion (2021: EUR 13.6 billion). Commitments in the business sector KfW Development Bank increased by 27% to EUR 10.9 billion (2021: EUR 8.6 billion), while DEG commitments of EUR 1.6 billion also showed a positive development in new business (2021: EUR 1.5 billion).

In 2022, KfW raised a record volume of EUR 89.4 billion in the capital markets to fund its business activities (2021: EUR 82.6 billion). Since November 2022, KfW has been able to draw on funds from the Economic Stabilisation Fund ("WSF") to finance the mandated transactions to secure Germany's energy supply. By year-end, EUR 22.4 billion (nominal) of WSF funds had been drawn down for bridge loans provided under the mandated transactions and a further EUR 12.0 billion had been used for coronavirus aid measures (2021: EUR 3.0 billion). In 2022, KfW did not provide funding via participation in the Eurosystem TLTRO III (2021: EUR 1.4 billion).

Promotional business volume of KfW Group

	2022 EUR in billions	2021 EUR in billions
Domestic business	136.1	82.9
Mittelstandsbank & Private Kunden (<i>SME Bank & Private Clients</i>)	64.8	73.0
Individualfinanzierung & Öffentliche Kunden (<i>Customised Finance & Public Clients</i>)	70.0	9.5
KfW Capital	1.3	0.5
Financial markets	0.4	0.5
International business	30.7	23.8
Export and project finance	18.1	13.6
KfW Development Bank	10.9	8.6
DEG	1.6	1.5
Volume of new commitments¹⁾	166.9	107.0

¹⁾ Adjusted for export and project financing refinanced through KfW programme loans

B. Operating result exceeds expectations

At EUR 1,536 million (2021: EUR 1,712 million), the Operating result before valuation (before promotional expense) was 10% below the prior-year level and exceeded the target by 5%. The outperformance was primarily due to Net commission income (before promotional expense) of EUR 629 million (2021: EUR 634 million), which was 11% above target. At EUR 1,509 million, Administrative expense (before promotional expense) was still slightly below plan, despite exceeding the previous year's figure by EUR 57 million. At EUR 2,416 million, Net interest income (before promotional expense) almost reached the target level, although it recorded a 5% year-on-year decline (EUR 2,531 million) due to the decreasing structure contribution given the current interest rate development. Nevertheless, net interest income still constituted the main source of KfW's income.

C. Moderate need for risk provisioning despite crisis environment

Despite the challenging environment, risk provisions for lending business resulted in moderate net charges of EUR 122 million in 2022 (2021: net income of EUR 196 million). The risk provision result is therefore significantly better than the projected standard risk costs (EUR -473 million). The provisions were largely created by net additions to provisions for latent credit risks (stages 1 and 2) in an amount of EUR 202 million (2021: net income of EUR 142 million). The additions resulted, in particular, from risks relating to the war in Ukraine. The macroeconomic environment, which deteriorated as a result of the war and the ensuing crises, had a negative impact. In contrast, net reversals from stage 3 credit commitments of EUR 16 million (2021: net additions of EUR 8 million) and income from recoveries of loans previously written off of EUR 62 million had a positive impact on risk provisioning.

D. Mixed developments shape the equity investment result

The group generated a result of EUR 89 million from the valuation of the entire equity investment portfolio in financial year 2022, which was significantly below the previous year (EUR 766 million), which had benefited from reversals of COVID-related impairments. Strains resulting from the Russia-Ukraine war impacted the business sectors KfW Development Bank and DEG in particular; this was offset by value increases in the equity investment portfolios

of the business sectors Export and project finance, KfW Capital and Individualfinanzierung & Öffentliche Kunden (*Customised Finance & Public Clients*).

E. Increasing promotional expense following the interest rate turnaround

KfW's domestic promotional expense, which has a negative impact on its earnings position, increased year on year by EUR 117 million to EUR 305 million in 2022, but was still below target (EUR 365 million). The reasons for the increase were negative funding rates for financing partners in the on-lending promotional business introduced as of 1 July 2021 and the interest rate turnaround noted in particular in the second half of 2022. This enabled KfW to regain scope for interest rate reductions, which had been very limited in the persistent low interest environment.

The following key figures provide an overview of the development of key financial figures in financial year 2022:

Key financial figures of KfW Group

	2022 EUR in millions	2021 EUR in millions
Key figures of the income statement		
Operating result before valuation (before promotional expense)	1,536	1,712
Operating result after valuation (before promotional expense)	1,668	2,575
Promotional expense	305	188
Consolidated profit	1,365	2,215
Cost-income ratio (before promotional expense) ¹⁾	49.6%	45.9%
Key economic figures		
Consolidated profit before IFRS effects	1,183	2,354
Key figures of the statement of financial position		
	31 Dec. 2022 EUR in billions	31 Dec. 2021 EUR in billions
Total assets	554.6	550.7 ²⁾
Volume of lending	607.0	564.2
Volume of business	709.6	686.6 ²⁾
Equity	36.6	34.2
Equity ratio	6.6%	6.2%

¹⁾ Administrative expense (before promotional expense) in relation to adjusted income. Adjusted income is calculated from net interest income and net commission income (in each case before promotional expense).

²⁾ Adjustments to corresponding prior-year figures due to methodical change in calculating deferred taxes on derivatives, implemented in 2022.

Comparison with the previous year's forecast

	2021 forecast for 2022	2022 actual
New business		
Promotional business volume	EUR 87.1 billion	EUR 166.9 billion
Funding		
	EUR 80–85 billion	EUR 89.4 billion
Result		
Consolidated profit	EUR 0.9 billion	EUR 1.4 billion
Net interest income (before promotional expense)	EUR 2.4–2.5 billion	EUR 2.4 billion
Net commission income (before promotional expense)	EUR 0.6 billion	EUR 0.6 billion
Administrative expense (before promotional expense)	EUR 1.5 billion	EUR 1.5 billion
CIR (before promotional expense)	51%	50%
Risk provisions for lending business	EUR –0.5 billion	EUR –0.1 billion
Valuation result	EUR +0.2 billion	EUR +0.3 billion
Promotional expense	EUR 0.4 billion	EUR 0.3 billion

The main differences between the forecasts from the Financial Report 2021 and the actual business development in 2022 are presented in the Economic report.

Development of earnings position

The earnings position in 2022 was characterised by a year-on-year decrease in the operating result combined with a reduced but still positive valuation result. This resulted in a consolidated profit of EUR 1.4 billion, which was below the prior-year figure (EUR 2.2 billion), but above the target (EUR 0.9 billion).

Reconciliation of internal earnings position (before promotional expense) with external earnings position (after promotional expense) for financial year 2022

	EUR in millions	Reconciliation EUR in millions	EUR in millions	
Net interest income (before promotional expense)	2,416	-267	2,148	Net interest income
Net commission income (before promotional expense)	629	-12	617	Net commission income
Administrative expense (before promotional expense)	1,509	16	1,525	Administrative expense
Operating result before valuation (before promotional expense)	1,536	-295	1,241	Operating result before valuation
Risk provisions for lending business	-122	-2	-124	Net gains/losses from risk provisions
Net gains/losses from hedge accounting	150	0	150	Net gains/losses from hedge accounting
Other financial instruments at fair value through profit or loss	64	0	64	Net gains/losses from other financial instruments at fair value through profit or loss
Securities and investments	-3	2	-1	Net gains/losses from disposal of financial assets at amortised cost
Net gains/losses from investments accounted for using the equity method	43	0	43	Net gains/losses from investments accounted for using the equity method
Operating result after valuation (before promotional expense)	1,668	-295	1,373	Operating result after valuation
Net other operating income (before promotional expense)	1	-10	-8	Net other operating income or loss
Profit/loss from operating activities (before promotional expense)	1,669	-305	1,365	Profit/loss from operating activities
Promotional expense	305	-305	0	-
Taxes on income	-1	0	-1	Taxes on income
Consolidated profit	1,365	0	1,365	Consolidated profit
Temporary net gains/losses from hedge accounting	182		182	Temporary net gains/losses from hedge accounting
Consolidated profit before IFRS effects	1,183	0	1,183	Consolidated profit before IFRS effects

Reconciliation of internal earnings position (before promotional expense) with external earnings position (after promotional expense) for financial year 2021

	EUR in millions	Reconciliation EUR in millions	EUR in millions	
Net interest income (before promotional expense)	2,531	-144	2,386	Net interest income
Net commission income (before promotional expense)	634	-12	623	Net commission income
Administrative expense (before promotional expense)	1,452	14	1,466	Administrative expense
Operating result before valuation (before promotional expense)	1,712	-170	1,542	Operating result before valuation
Risk provisions for lending business	196	0	196	Net gains/losses from risk provisions
Net gains/losses from hedge accounting	-110	0	-110	Net gains/losses from hedge accounting
Other financial instruments at fair value through profit or loss	767	0	767	Net gains/losses from other financial instruments at fair value through profit or loss
Securities and investments	-4	-0	-4	Net gains/losses from disposal of financial assets at amortised cost
Net gains/losses from investments accounted for using the equity method	14	0	14	Net gains/losses from investments accounted for using the equity method
Operating result after valuation (before promotional expense)	2,575	-170	2,405	Operating result after valuation
Net other operating income (before promotional expense)	-34	-18	-53	Net other operating income or loss
Profit/loss from operating activities (before promotional expense)	2,541	-188	2,353	Profit/loss from operating activities
Promotional expense	188	-188	0	-
Taxes on income	137	0	137	Taxes on income
Consolidated profit	2,215	0	2,215	Consolidated profit
Temporary net gains/losses from hedge accounting	-139		-139	Temporary net gains/losses from hedge accounting
Consolidated profit before IFRS effects	2,354	0	2,354	Consolidated profit before IFRS effects

At EUR 1,536 million (2021: EUR 1,712 million), the **Operating result before valuation (before promotional expense)** was below the prior-year level but above the target (EUR 1,464 million).

At EUR 2,416 million, **Net interest income (before promotional expense)** decreased compared to the 2021 figure (EUR 2,531 million). The main factor behind the decline was the lower structure contribution due to market conditions, which was significantly below target. The opposite was true for interest margin income and commitment fees, which exceeded both the previous year and the target. In this context, net interest income benefited, among other things, from fees collected by KfW as part of the transactions mandated to secure the energy supply. Moreover, KfW's funding conditions on the capital and money markets remained very good and made a positive contribution to Net interest income due to the bank's top-notch credit rating.

Net commission income (before promotional expense) amounted to EUR 629 million, which was nearly on par with the 2021 figure (EUR 634 million) and exceeded expectations (EUR 565 million). This figure was mainly due to the cost-based remuneration of EUR 363 million (2021: EUR 362 million) for the implementation of the promotional programmes for the Federal Government, which was primarily in energy efficiency and renewables, including charging infrastructure. Remuneration for administration of German Financial Cooperation ("FC") increased slightly to EUR 231 million (2021: EUR 229 million). The remuneration from the Federal Government was offset by related administrative expenses. In addition to the time and material fees, syndication fees and restructuring fees in the business sector Export and project finance contributed to the outperformance.

Administrative expense (before promotional expense) grew from EUR 1,452 million to EUR 1,509 million, but was lower than expected (EUR 1,546 million). Personnel expense amounted to EUR 887 million, which is higher than the previous year's figure of EUR 842 million. This increase was due in part to a full-time equivalent ("FTE") increase that was lower than expected. In addition, collective wage increases and special payments to employees to compensate for inflation had a cost-increasing effect. Non-personnel expense (before promotional expense) rose slightly from EUR 610 million to EUR 622 million.

The cost-income ratio before promotional expense increased to 49.6% (2021: 45.9%), mainly due to the increase in administrative expense and the overall decline in operating income. Adjusted for income and expenses from products for which cost-based remuneration has been agreed with the Federal Government, the cost-income ratio for 2022 amounted to 37.1% (2021: 33.3%).

Despite the more challenging environment, the **risk provision result** saw moderate charges of EUR 122 million in 2022, which were significantly below the projected standard risk costs (EUR –473 million). There was a considerable deterioration compared to the previous year's net income of EUR 196 million, which had benefited from pent-up demand following the global coronavirus crisis. The net additions were due in particular to the economic impact of the Russia-Ukraine war and the resulting crises. These additions were offset by relief from the validation and continued development of provisioning and its methods. Net additions mainly affected the business sectors DEG and Mittelstandsbank & Private Kunden (*SME Bank & Private Clients*).

The gloomy macroeconomic environment led to a need for risk provisions for performing loans of EUR 202 million (2021: net income of EUR 142 million). The impact of the Russia-Ukraine war and the energy crisis are reflected in the adjusted probabilities of default, more conservative treatment of loss ratios and inclusion of a second conservative macroeconomic scenario.

Net reversals of EUR 16 million (2021: net additions of EUR 8 million) were recorded in risk provisions for non-performing loans (stage 3) including direct write-offs in 2022. Net additions arose mainly from the business sector DEG, in an amount of EUR 55 million (2021: EUR 53 million), of which almost 50% were attributable to exposures directly related to Ukraine, and in the business sector Mittelstandsbank & Private Kunden (*SME Bank & Private Clients*) in an amount of EUR 44 million (2021: EUR 47 million), of which EUR 54 million was attributable to education financing (2021: EUR 37 million). These additions were offset by net reversals in the business sector Export and project finance of EUR 107 million (2021: EUR 74 million), which largely resulted from the reversal of risk provisions due to validation results.

At EUR 62 million, income from recoveries of loans previously written off was below that of the previous year (EUR 83 million). Of this amount, EUR 38 million was attributable to the business sector Mittelstandsbank & Private Kunden (*SME Bank & Private Clients*) and EUR 19 million to the business sector DEG.

Risk provisions for lending business increased to EUR 2.2 billion in financial year 2022 (2021: EUR 2.0 billion), of which EUR 1.4 billion was related to provisions for imminent risks in stage 3 (2021: EUR 1.4 billion). Provisions for individual risks in stage 2 that cannot be allocated increased from EUR 0.4 billion to EUR 0.5 billion, and in stage 1 from EUR 0.3 billion to EUR 0.4 billion.

The **net gains/losses from hedge accounting and other financial instruments at fair value through profit or loss** amounted to EUR 214 million (2021: EUR 657 million) and, in financial year 2022, were driven by positive valuation effects from the equity investment portfolio, and by purely IFRS-related effects from the measurement of derivatives used for hedging purposes.

The equity investment portfolios measured at fair value through profit or loss generated total income of EUR 46 million in financial year 2022, after the previous year's result of EUR 752 million which was due to reversals of impairment losses as a result of the absence of pandemic-related charges. The development in 2022 was characterised by the impact of the war in Ukraine, which mainly affected the equity investment portfolios of the business sectors KfW Development Bank and DEG, with a result of EUR –61 million (2021: EUR 448 million) and EUR 17 million (2021: EUR 424 million), respectively. DEG's negative securities result of EUR –73 million was more than compensated for by positive exchange rate-induced increases in value – in particular, from the appreciation of the US dollar. There was positive performance in the equity investment portfolios of the business sectors Individualfinanzierung & Öffentliche Kunden (*Customised Finance & Public Clients*) (EUR 31 million; 2021: EUR 54 million), KfW Capital (EUR 26 million; 2021: EUR 194 million) and Export and project finance (EUR 11 million; 2021: EUR 51 million).

Hedge accounting and borrowings recognised at fair value, including derivatives used for hedging purposes, resulted in net expenses of EUR 202 million (2021: EUR 139 million). The mark-to-market derivatives are part of economically hedged positions. However, if the other part of the hedging relationship cannot be carried at fair value or different valuation methods and parameters have to be applied, this inevitably results in temporary fluctuations in income that are fully offset over the term of the transactions.

The measurement of securities at fair value through profit or loss yielded a balanced result as in the previous year of EUR 0 million.

In the case of securities not carried at fair value, developments in the financial markets resulted in a net difference of EUR – 57 million between the carrying amount and the fair value (2021: EUR 98 million). This development is partly attributable to decreases in the value of the covered bonds. However, there were no defaults or significant deteriorations in credit quality.

There were **net gains** of EUR 41 million (2021: EUR 10 million) **from securities and investments** as well as from **investments accounted for using the equity method**. Investments accounted for using the equity method contributed EUR 43 million to the result. This was primarily due to value increases in the business sector Export and project finance.

Net other operating income (before promotional expense) was EUR 1 million, which was up on the previous year's figure (2021: EUR –34 million).

At EUR 305 million in 2022, KfW's domestic **promotional expense**, which has a negative impact on KfW Group's earnings position, was above the prior-year level (EUR 188 million) but below projections (EUR 365 million), due to the low interest environment.

Interest rate reductions are the key component of KfW's promotional expense. KfW grants these for certain domestic promotional loans during the first fixed-interest-rate period, which has a negative effect on its earnings position, in addition to passing on its funding conditions which are influenced by its triple-A rating. The volume of interest rate reductions was EUR 267 million in financial year 2022, which was above the prior-year figure (EUR 144 million) but below the projected figure (EUR 330 million). The increase in interest rate reductions was the result not only of passing on negative funding rates to KfW financing partners from the third quarter 2021 onwards, but also primarily of the significant increase in interest rates, in particular in the second half of 2022, which led to an additional increase in demand for promotional loans at reduced rates. In addition to its lending business, KfW provided promotional grants, in particular for the Climate action campaign and the ERP Digitalisation and Innovation programmes, totalling EUR 10 million in financial year 2022 (2021: EUR 18 million), which were recognised as promotional expense in Net other operating income. Moreover, promotional expenses reported in net commission income and administrative expense amounted to EUR 28 million (2021: EUR 26 million). This spending was aimed at, among other things, the sale of KfW's promotional products.

KfW reported a tax result of EUR 1 million for financial year 2022 (2021: EUR –137 million), with the current taxes on income of EUR 46 million (2021: EUR 49 million) offset by deferred tax income of EUR 47 million (2021: expense of EUR 88 million).

Overall, KfW generated a **consolidated profit of** EUR 1,365 million, which is significantly lower than in 2021 (EUR 2,215 million) but above expectations of around EUR 900 million.

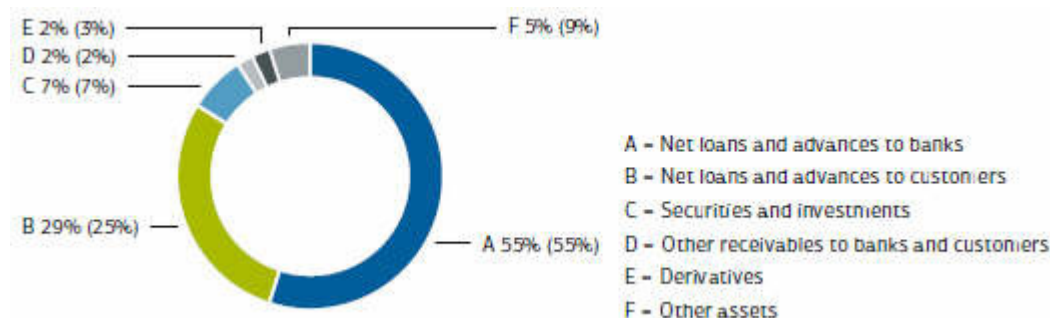
Consolidated profit before IFRS effects from hedging is another key financial figure based on Consolidated profit in accordance with IFRS to reflect the fact that KfW uses derivative financial instruments solely for hedging purposes. Under IFRS, the requirements for the recognition and valuation of derivatives and hedges give rise to temporary net gains or losses that are offset over the entire term. Against this backdrop, IFRS effects from hedging relationships amounting to EUR 182 million (2021: EUR –139 million) were eliminated.

The reconciled earnings position amounted to a profit of EUR 1,183 million (2021: EUR 2,354 million). The significant decline in consolidated profit is largely due to the charges from risk provisions and the declining valuation result of the equity investment portfolio, after the previous year's profit had benefited exceptionally from recovery after COVID-related pressures. Nevertheless, the result still exceeds the sustainable earnings potential of EUR 1.0 billion.

Development of net assets

Lending to banks and customers accounted for 84% of the group's assets as of 31 December 2022 (2021: 80%).

Assets as of 31 December 2022 (31 Dec. 2021)



The **volume of lending** increased significantly compared to the previous year, amounting to EUR 607.0 billion (2021: EUR 564.2 billion).

Volume of lending

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Loans and advances	465,655	440,623
Risk provisions for lending business	-2,102	-1,943
Net loans and advances	463,554	438,680
Contingent liabilities from financial guarantees	3,543	3,168
Irrevocable loan commitments	129,183	111,376
Loans and advances held in trust	10,681	10,999
Total	606,961	564,223

Loans and advances increased by EUR 25.0 billion in 2022, which was primarily the result of liquidity support for energy suppliers (around EUR 22 billion) and the Federal Funding for Efficient Buildings programme (BEG) (EUR 10.4 billion). The coronavirus special programme 2020, particularly the KfW Entrepreneur Loan and KfW Entrepreneur Loan – SMEs, in contrast, posted a decrease of EUR 5.9 billion. Overall, disbursements in new lending business more than compensated for unscheduled repayments (EUR 14.5 billion; 2021: EUR 14.2 billion) and scheduled repayments. At EUR 463.6 billion, Net loans and advances accounted for 76% of lending volume.

Contingent liabilities from financial guarantees amounted to EUR 3.5 billion, an increase of EUR 0.4 billion on the prior-year figure (2021: EUR 3.2 billion). Irrevocable loan commitments rose by EUR 17.8 billion to EUR 129.2 billion largely as a result of irrevocable commitments to liquidity support of EUR 20.0 billion for energy suppliers. Within assets held in trust, the volume of Loans and advances held in trust, which primarily comprise loans to promote developing countries and emerging economies financed by budget funds provided by the Federal Republic of Germany, decreased by EUR 0.3 billion to EUR 10.7 billion.

Other loans and advances to banks and customers posted an increase from 8.4 billion to EUR 12.7 billion. The increase of EUR 4.3 billion was attributable to receivables from cash collateral in connection with collateral management in the derivatives business.

The total amount of **securities and investments**, at EUR 38.1 billion, was 4% below the previous year's level.

Securities and investments

	31 Dec. 2022	31 Dec. 2021
	EUR in millions	EUR in millions
Bonds and other fixed-income securities	33,721	35,774
Shares and other non-fixed income securities	0	0
Equity investments	4,342	4,015
Shares in non-consolidated subsidiaries	80	68
Total	38,143	39,856

The **securities portfolio** decreased by EUR 2.1 billion to EUR 33.7 billion in financial year 2022 (31 Dec. 2021: EUR 35.8 billion). The portfolio of **Equity investments** and **Shares in non-consolidated subsidiaries** increased by EUR 0.3 billion to EUR 4.4 billion in 2022. This was due in part to portfolio growth in DEG and KfW Capital.

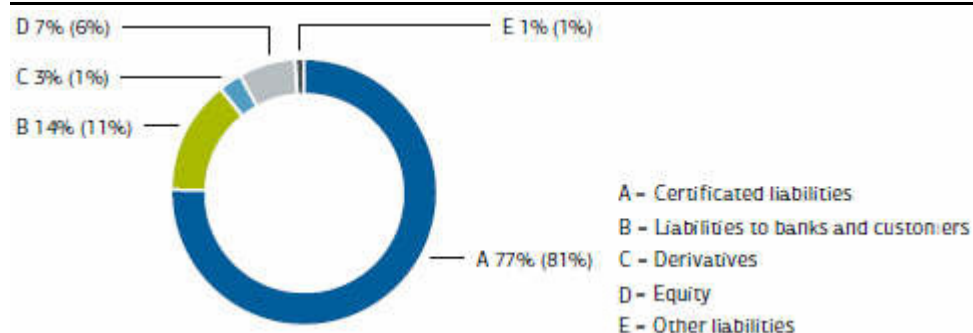
Value adjustments from macro hedge accounting declined by EUR 30.5 billion, based on fair value, from EUR 4.6 billion to EUR –25.9 billion. **Derivatives** with positive fair values, which are primarily used to hedge refinancing transactions, declined from EUR 13.9 billion in 2021 to EUR 11.5 billion. This was primarily due to value adjustments of stand-alone derivatives decreasing from EUR 5.4 billion to EUR 2.5 billion.

KfW increased its balances with central banks by EUR 9.4 billion to EUR 51.8 billion. The liquidity held continues to ensure the expected servicing of measures related to securing the energy supply and, in addition, enables reaction to market events at short notice. There were only minor changes in the other asset line items in the statement of financial position.

Development of financial position

KfW Group's funding strategy in the national and international capital markets is based on the four product categories: "benchmark programmes in euros and US dollars", "Green Bonds – Made by KfW", "other public bonds" and "private placements". In addition, funds totalling EUR 34.4 billion (nominal) were raised via the Economic Stabilisation Fund ("WSF") in 2022 to fund support measures for energy suppliers due to the Ukraine war (EUR 22.4 billion) and the coronavirus special programmes (EUR 12.0 billion). KfW fully repaid its funding via participation in the targeted longer-term funding of the Eurosystem via TLTRO III in 2022. Overall, the share of total assets accounted for by funding in the form of certificated liabilities therefore declined to 77% (previous year: 81%).

Financial position as of 31 December 2022 (31 Dec. 2021)



Borrowings decreased by EUR 5.8 billion to EUR 500.3 billion.

Borrowings

	31 Dec. 2022	31 Dec. 2021
	EUR in millions	EUR in millions
Short-term funds	43,810	51,588
Bonds and notes	385,810	397,617
Other funding	70,678	56,854
Total	500,298	506,059

Funds raised in the form of certificated liabilities declined by EUR 22.7 billion to EUR 424.9 billion. Of this decrease, EUR 11.8 billion was a result of a lower volume of medium and long-term bonds and notes, which remain the group's principal source of funding. At year-end 2022, such funds amounted to EUR 385.8 billion (31 Dec. 2021: EUR 397.6 billion) and accounted for 77% of borrowings. Short-term issues of commercial paper declined by EUR 10.9 billion to EUR 39.1 billion. Total short-term funds, including demand deposits and term deposits, amounted to EUR 43.8 billion, compared with EUR 51.6 billion the previous year. Additional funds were raised in connection with the provision of liquidity support for energy suppliers. This largely resulted in an increase in Other funding of EUR 13.8 billion to EUR 70.7 billion (31 Dec. 2021: EUR 56.9 billion). In addition to the increase of EUR 12.7 billion in promissory note loans (*Schuldscheindarlehen*) from banks and customers to EUR 53.5 billion (mainly funding via the WSF); this also includes higher liabilities to the Federal Republic of Germany for future disbursements in short-term emergency aid for gas and heat (EUR 4.4 billion). In contrast, cash collateral received, which primarily serves to reduce counterparty risk from the derivatives business, declined from EUR 9.0 billion in the previous year to EUR 5.4 billion.

The carrying amounts of derivatives with negative fair values, which were primarily used to hedge own issues, increased by EUR 8.1 billion from EUR 6.4 billion as of 31 December 2021, primarily due to changes in market parameters, and amounted to EUR 14.5 billion at year-end 2022. One significant factor was the dramatic hike in key interest rates by the European Central Bank in 2022.

There were only minor changes in the **other liability line items** of the statement of financial position.

At EUR 36.6 billion, **equity** was EUR 2.4 billion above the level of 31 December 2021 of EUR 34.2 billion. The increase resulted in particular from consolidated profit (EUR 1.4 billion). The significant increase in the discount rate for pension obligations from 1.32% to 3.89% provided a reduction of EUR 0.9 billion in the revaluation reserves. The equity ratio increased year on year from 6.2% to 6.6% as of 31 December 2022, primarily due to the increase in equity.

Equity

	31 Dec. 2022	31 Dec. 2021
	EUR in millions	EUR in millions
Paid-in subscribed capital	3,300	3,300
Capital reserve	8,447	8,447
Reserve from the ERP Special Fund	1,191	1,191
Retained earnings	23,391	22,026
Fund for general banking risks	200	200
Revaluation reserves	50	-957
Total	36,579	34,207

The consolidated profit was allocated to retained earnings.

Risk report

Overview of key indicators

Risks are reported at group level in accordance with KfW Group's internal risk management. The key risk indicators are presented below:

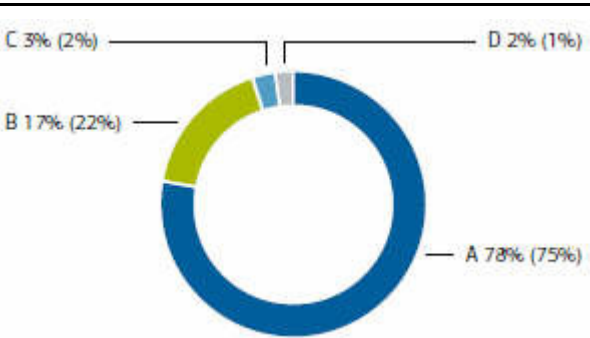
Regulatory capital ratios:



The increase in the capital ratio is primarily due to the increase in own funds, which rose by around EUR 2.8 billion year on year and thus more than offset the increase in total risk exposure, which was largely due to methodology.

A = Tier 1 capital ratio
B = Total capital ratio

Credit risk: 2022 (2021), Net exposure breakdown



The share of investment grade net exposure increased slightly year on year to 78% of total net exposure. The change is primarily due to rating improvements in the banking portfolio. The distribution of exposures is quite stable overall.

A = Investment grade
B = Non-investment grade
C = Watch list
D = Default

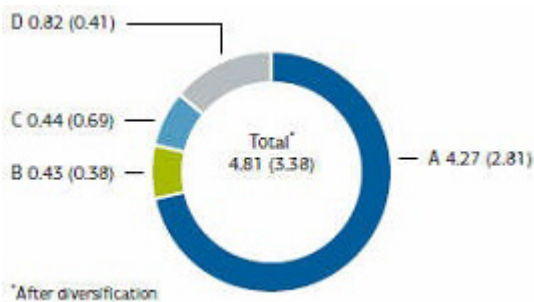
Economic risk-bearing capacity: (EUR in billions)



The year 2022 was characterised by high volatilities in the markets. This led to a higher economic capital requirement for market price risks. The increase in available financial resources, in particular due to the positive annual result, largely compensated for the increase in the economic capital requirement. Economic risk-bearing capacity, which was transitioned to a present-value calculation in 2022, was maintained at a confidence level of 99.9% in the reporting year.

A = Available financial resources
B = Total economic capital requirement

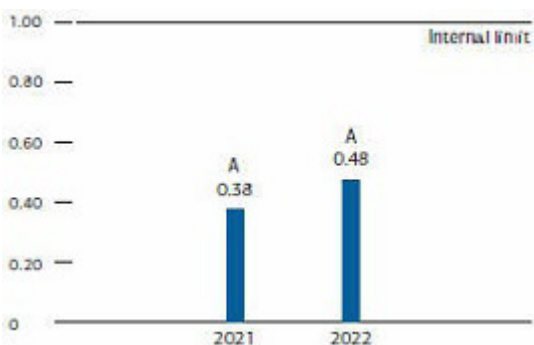
Market price risk: 2022 (2021), ECAP (EUR in billions)



Greater volatility in the market due to the Russia-Ukraine war caused a higher capital requirement for market price risk compared to the previous year, primarily due to the increased interest risk. The highly volatile markets also caused an increase in interest rate volatility risk and credit spread risk. Currency risk decreased due to a lower USD present value.

A = Interest risk
B = Interest volatility risk
C = Currency risk
D = Credit spread risk

Liquidity risk:



The liquidity risk indicator remained considerably below the internal limit throughout the year. The increase in the liquidity risk indicator largely resulted from new lines of credit granted within the scope of mandated transactions.

A = Liquidity risk indicator (worst case)

Operational risk:

ECAP (EUR in millions)



The updating of risk scenarios led to a reduction in economic capital requirements at the end of 2022.

A = ECAP

In financial year 2022, as in previous years, KfW Group refined the processes and instruments of its risk management and controlling taking into account current banking supervisory requirements. Economic risk-bearing capacity was changed to a present-value calculation. The measurement of available financial resources and of economic capital for credit risk was developed accordingly. A new digital stress test reporting system was also introduced.

Other focus areas included the expansion of the reporting systems in Risk Controlling and further development of the management of environmental, social and governance risks (“ESG” risks) as part of a group-wide project. KfW has been implementing its sustainable finance concept as part of this project (“transForm”) since the end of 2020. KfW is enhancing its ESG risk management on this basis in order to identify and assess ESG risks even earlier in future and to take mounting regulatory requirements into account. The ESG risk project is based on developing and implementing an ESG risk database (“ESG risk profile”) to store an assessment of ESG risks for risk-relevant business partners as an ESG risk profile in the future. Other central issues include further development of ESG stress testing methods and reporting, and improved consideration of ESG risks in the relevant overall bank and risk management processes.

Basic principles and objectives of risk management

KfW Group has a statutory promotional mandate. Sustainable promotion is KfW Group’s overarching purpose. The aim of risk management is for the group to take risks only to the extent that they appear manageable in the context of its current and anticipated earnings position and capital resources. KfW Group’s risk/return management takes into account the business model of a promotional bank without the primary intention of generating a profit and without a trading book, with appropriate implementation of supervisory requirements constituting a fundamental prerequisite for the group’s business activities.

The promotional bank business model determines the group’s risk culture with its four regulatory-based elements: leadership culture, responsibilities, communication and incentives. Incentive structures for employees and their responsibilities are designed accordingly. Senior management specifies the desired code of conduct and sets an example in practising it, with the desired dialogue established by means of communication with and through the relevant bodies.

Current developments

The global economic situation in 2022 was dominated by the Russia-Ukraine war. Its consequences thwarted the economic recovery that began in 2021 after the pandemic-induced crisis. The global economy has been slowed more broadly and more significantly than expected. The return of historically high inflation, in particular, poses a great

challenge in this environment. Central banks are aiming to contain inflation but risk further slowing the economy in the process. Governments, in turn, are confronted with the public's demands to curb costs. At the same time, the fiscal leeway of many countries has already shrunk considerably after two years of pandemic. There is pressure from interest rates, which are expected to continue to rise, and the US dollar, which was boosted by the Federal Reserve's systematic interest rate policy, on heavily indebted developing countries and emerging economies, in particular, but also on highly indebted industrialised countries. The countries most at risk are the ones that are particularly vulnerable to external shocks due to prolonged current account deficits. These negative developments are primarily reflected in increased rating downgrades in KfW's country risk management in the second half of 2022. These rating downgrades result in the respective country limits potentially being reduced. The deterioration in credit quality also affects the bank ratings of counterparties in the respective countries.

Immediately after the outbreak of the Russia-Ukraine war, KfW's risk management identified business partner banks with significant exposure to the affected countries. Processes were temporarily adapted, and monitoring stepped up as a precautionary measure. The regular ratings for the bank portfolio in 2022 were significantly influenced by country rating changes, which are included as parameters in the bank rating. Global banking markets were challenged by rapidly and significantly rising interest rates in 2022. Banks had to rebalance their pricing policy at the end of the low-interest period. Although interest margins would increase, lending also had to remain intact. The latter proved particularly difficult for the real estate sector. Rising interest rates on loans were compounded by higher prices for building materials and scarce construction capacities in that sector, causing a significant decline in demand for home ownership in many countries. The developments outlined above became intertwined with the coronavirus crisis. The moratoria and other COVID-related support measures granted in most countries ended. The effects on banks expected at the outset of the pandemic (higher rates of NPLs and declining earnings) have failed to materialise thus far because, in many cases, they have been mitigated by means of regulation and government spending. The overall situation is currently very challenging. While the COVID, Ukraine and energy crises demand greater spending and the debt burden is accumulating, rising key interest rates are rendering financing increasingly costly. Declining securities prices have in turn impacted bank balance sheets in different countries and also accounting standards. The forecast for 2023 is therefore subject to considerable uncertainties.

The consequences of the Russia-Ukraine war and the related sanctions are exacerbating the supply chain, energy and price problems that were already present at the beginning of 2022 and weighing on the corporate sector. KfW responded to the outbreak of the Russia-Ukraine war by creating a crisis team together with its subsidiaries to coordinate the complex issues and took extensive action in the corporate segment in risk/portfolio and credit management. In addition to the monitoring, reporting and strict management of credit risks related to the Russia-Ukraine war, these measures include, in particular, the further reduction of the direct exposure to Russia by prohibiting new business, making portfolio sales and assigning default status on corporate loans for customers with registered offices in Russia and Ukraine (direct exposure to Belarus is negligible). Direct and indirect risk exposures (i.e. borrowers with first-round exposure – such as through important supply relationships) to corporates associated with Russia, Belarus and Ukraine are largely hedged, account for only a small part of the credit risks in the entire corporate segment and are also declining. For example, Russian business has been heavily restricted since 2014 and direct Russian exposure in the corporate segment has been considerably limited in this regard. In contrast, extensive mandated transactions were concluded on behalf of the Federal Government in connection with the war in Ukraine in order to support energy suppliers. Negative macroeconomic effects of the war in Ukraine (gas supply shortage, energy price pressure, monetary policy tightening to combat persistent inflation, increasing supply chain issues), and the pressure on the corporate sector already felt before the war due to the pandemic, have resulted in great uncertainty about the extent to which the corporate segment will be affected in the future. However, the corporate loan portfolio has been largely stable thus far despite the difficult economic environment.

Organisation of risk management and monitoring

Risk management bodies and responsibilities

As part of its overall responsibility, KfW's Executive Board determines the group's risk policies. The Board of Supervisory Directors is informed at least quarterly of KfW Group's risk situation. The Risk and Credit Committee set up by the Board of Supervisory Directors is primarily responsible for advising the Board of Supervisory Directors about the group's current and future overall risk tolerance and strategy and supports it in monitoring the implementation of the latter. The Committee decides on loan approvals (including loans to members of management), operational level equity investments, funding and swap transactions, where committee authorisation is required by the KfW Bylaws. The Audit Committee monitors, above all, the accounting process and the effectiveness of the risk management system and internal control and offers recommendations to the Board of Supervisory Directors concerning its approval of KfW's annual and consolidated financial statements.

Group risk management is carried out by various interconnected decision-making bodies. At the top of the system is the Executive Board, which takes the key decisions on risk policy. There are three risk committees below Executive Board level (Credit Risk Committee, Market Price Risk Committee and Operational Risk Committee) that prepare decisions for the Executive Board and also take their own decisions within their remits. The committees also perform KfW Group management functions; thus, representatives from KfW subsidiaries are also included. Internal Auditing also has the right to attend committee meetings as a guest. Working groups such as the Rating Systems Working Group, Collateral Working Group, Country Rating Working Group, Corporate Sector Risk Working Group, Market Price Risk Working Group, Hedge Committee and OpRisk Working Group support the committees. Committee resolutions are adopted by simple majority with middle and back-office departments (*Marktfolge*) or Risk Controlling entitled to veto decisions. Escalation to Executive Board level is possible in all committees.



Credit Risk Committee

The Credit Risk Committee is chaired by the Chief Risk Officer and meets once a week. Additional voting members of the committee are the Director of Credit Risk Management, members of the Executive Board with front-office responsibilities and KfW IPEX-Bank's Chief Risk Officer ("CRO"). The CRO of DEG has guest status. The weekly meetings of the Credit Risk Committee involve, in particular, making important lending decisions in line with the credit approval policy, with KfW subsidiary exposures also being presented. In addition, current developments in the loan portfolio, including country and sector risks, are discussed on an ad hoc basis; DEG's CRO is also entitled to vote in these discussions and the managing director of KfW Capital responsible for risk issues has guest status. Once a month, the (General) Credit Risk Committee acknowledges the submissions addressed in the working groups, discusses overarching credit risk issues and makes decisions on significant adjustments in accordance with the competency matrix. In particular, these include reports and draft resolutions on the risk situation and risk management as well as on credit risk methods and principles. Reports are also made on the development of regulatory requirements, their impact and the progress of implementation projects in KfW Group. To this end, membership of the Credit Risk Committee has been expanded to include the Director of Risk Controlling, the DEG CRO and the managing director of KfW Capital responsible for risk issues. The Credit Risk

Committee is supported by various working groups. The Country Rating Working Group serves as the central unit for assessing country risk. The Collateral Working Group supports the committee in connection with methodological and procedural issues and decisions relating to collateral acceptance and valuation, in particular the (further) development of methods used, approval of validation results and adjustments to the collateral management processes. The Rating Systems Working Group is responsible for credit risk measurement instruments and rating procedures.

The Corporate Sector Risk Working Group is a group-wide expert panel which analyses sector and product-related credit risks in the corporate segment. The decisions made, reports submitted and other key topics addressed in the working groups are communicated to the Credit Risk Committee via the working group minutes.

Market Price Risk Committee

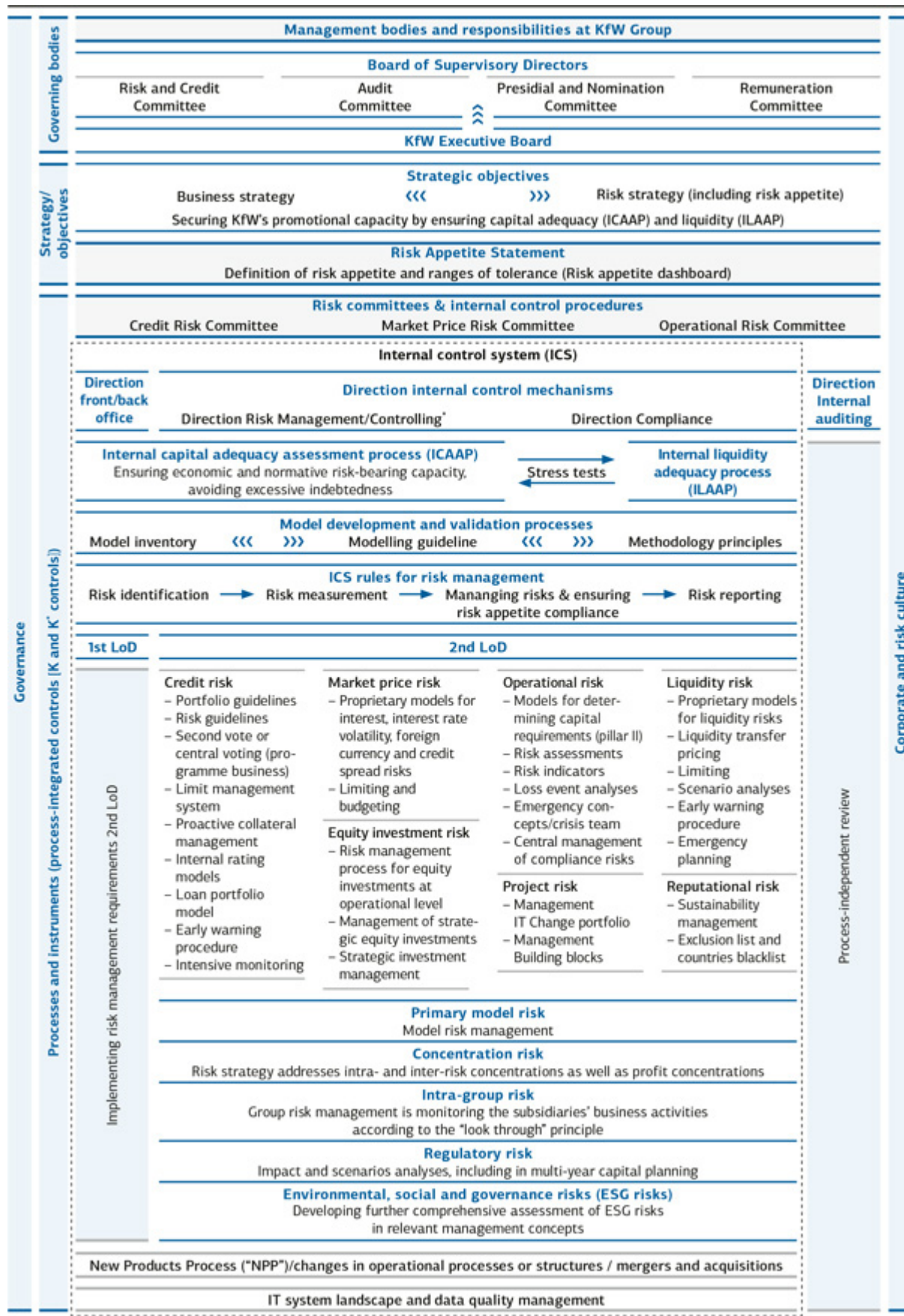
The Market Price Risk Committee meets monthly or on an ad hoc basis as required and is chaired by the Chief Risk Officer. In addition to the Chief Risk Officer, the members of the Executive Board responsible for capital markets business and finance are also represented. The members of the committee also include the directors of Risk Controlling, Financial Markets, Accounting, Transaction Management and the CROs of KfW IPEX-Bank and DEG. The Market Price Risk Committee discusses KfW Group's market price and liquidity risk position and assesses the market price risk strategy on a monthly basis. The committee also decides on questions relating to the principles and methods applied for the management of market price and liquidity risks, on funding, transfer pricing and on valuation for commercial transactions. The Market Price Risk Committee is supported by the Hedge Committee and the Market Price Risk Working Group. The Hedge Committee deals primarily with the earnings effects of IFRS hedge accounting and the further development thereof. The Market Price Risk Working Group deals with methodology issues relating to market price and liquidity risks as well as measurement issues. These include matters relating to model development, validation and financial reporting measurement, in particular, acknowledging validation reports and making decisions on recommendations resulting from validation. A decision on the matters addressed is either made directly by the Market Price Risk Working Group or prepared for referral to the Market Price Risk Committee.

Operational Risk Committee

The Operational Risk Committee meets once every quarter and provides support to the Executive Board in cross-functional management and the necessary decisions and acknowledgements in respect of operational and reputational risk, and group security including business continuity management ("BCM"). The Chief Risk Officer is responsible for chairing the Operational Risk Committee meetings. In principle, all areas of the bank are represented in the committee – in selected cases based on a representation concept. Moreover, the managing director level of KfW IPEX-Bank, DEG and KfW Capital is represented on the committee. The committee makes decisions on group-wide management measures. Furthermore, the committee discusses the risk status on the basis of the findings obtained through different methods and instruments and evaluates any group-wide need for action, with the aim of adequate risk management. The results of the validation of the OpRisk model are acknowledged. In the area of BCM, the committee establishes crisis-prevention and emergency-planning measures using the results of the annual business impact analysis. Monitoring is based on reports about planned or implemented emergency and crisis team tests and significant disruptions to business. The committee meeting documents, together with the minutes and the resolutions and recommendations contained therein, are submitted to the Executive Board. The committee formed the Group Security Board ("GSB") to take up matters related to group security and business continuity management ("BCM") and the OpRisk Working Group as a working group for exchange with the decentralised department coordinators for operational risk and business continuity management ("BOB").

Additionally, the subsidiaries and organisational entities of KfW Group exercise their own control functions within the group-wide risk management system. Group-wide regulations, projects and working groups are in place to implement a uniform approach, such as in the rollout of rating instruments to subsidiaries or in the management and valuation of collateral. The responsibility for developing and structuring risk management and risk control activities is located outside the front-office departments and lies in particular with the Risk Controlling and Credit Risk Management areas.

Risk management approach of KfW Group (overview)



* In addition to Risk Controlling, Credit Risk Management and Transaction Management in some cases also exercise control functions due to organisational reasons.

To ensure capital and liquidity adequacy in line with the defined risk appetite, Risk Controlling supports the Executive Board in developing and implementing the group's risk strategy together with the relevant subsidiaries, KfW IPEX-Bank, DEG and KfW Capital.

The risk strategy translates the group's long-term and strategic risk objectives into operational risk management requirements. This involves defining risk management objectives for core business activities and measures for achieving targets, as well as determining KfW Group's appetite for material risks.

In order to determine its material risks, KfW Group conducts a **risk inventory** at least once a year. The risk inventory identifies and defines types of risks relevant to the group and then subjects them to a materiality evaluation. The materiality of a risk type depends on the potential danger for KfW Group's net assets, earnings and liquidity. The materiality evaluation looks at both the quantified net risk (taking existing risk mitigation instruments into account) and the gross risk. The key outcome of the risk inventory is an overall risk profile, which provides an overview of KfW Group's material and immaterial risk types. The 2022 inventory identified that KfW Group faces the following material risks: credit, market price, liquidity, operational, equity investment, regulatory, project, reputational and intra-group and primary model risks. Risk concentrations associated with material risks either within a risk type or across various risk types are taken into account in the risk inventory. In addition, the risk inventory process involves looking at the impact of ESG (environmental, social and governance) risks on the overall risk profile.

The Executive Board is informed about KfW Group's risk situation on a monthly basis. A risk report is issued quarterly to KfW Group's supervisory bodies. The respective bodies are informed on an ad hoc basis as required.

The models used for group-wide risk measurement and management, as well as for financial reporting measurement, are regularly validated and refined where necessary. These primarily include the models for measuring and managing credit, equity investment, market price, liquidity and operational risks, as well as the models for financial reporting measurement. The model for measuring risks for the "project risk" risk type, which is classed as material, is also subject to regular review.

The risk management approach is set out in the group's procedural rules. The procedural rules stipulate the framework for the application of uniform policies and procedures to identify, measure, control and monitor risk. The rules and regulations laid out in the procedural rules are binding for the entire group and are accessible to employees through their publication on the intranet. KfW group-wide regulations are supplemented by rules specific to each business sector. See the following sections for details on other elements of KfW Group's risk management approach.

INTERNAL CAPITAL ADEQUACY ASSESSMENT PROCESS

The group's internal capital adequacy assessment process ("ICAAP") is aimed at safeguarding its risk-bearing capacity at any time and thus also the long-term continuation of corporate activities on the basis of substance and profitability. This is accomplished based on two perspectives:

The normative perspective of ICAAP in particular ensures continuous compliance with the regulatory capital requirements of Pillar I in accordance with the Capital Requirements Regulation ("CRR") and the German Banking Act (*Kreditwesengesetz – "KWG"*) both on an ongoing basis, and in a longer-term view (normative capital planning). In addition to a base scenario, the total capital ratio is also considered in adverse scenarios (downturn and stress scenarios). This is intended to enable early identification of any capital bottlenecks. This also takes into account potential effects resulting from risks that do not have to be explicitly backed by capital under Pillar I. Achievement of the strategic risk-bearing capacity objectives is also monitored in KfW's planning and management process. The development of the large exposure limit and the leverage ratio are monitored as further structural capital requirements.

The economic perspective of the ICAAP serves to safeguard the economic assets of the institution in order to protect creditors from economic loss. This is achieved by comparing the available financial resources as of a key date with the risk assumed as of the same date (economic capital requirement or ECAP for all material risks to capital). Both available financial resources and risk figures are calculated at present value and static, i.e. they do not take into account new business or expected results from transactions not yet executed. The amount of economic capital required is largely determined by the confidence level for risk measurement. The multi-year capital planning process does not include a regular forecast of economic risk-bearing capacity, although an indicative forecast of economic risk-bearing capacity may be produced if necessary, if future developments which may have a material impact on risk-bearing capacity are identified via a list of questions.

The ICAAP is subject to an annual review of its adequacy. The results of this review are taken into account in the assessment of risk-bearing capacity.

Both ICAAP perspectives include regularly performed stress tests in the form of simulations of adverse economic conditions (downturn and stress scenarios). A traffic light system established in this context with thresholds for the key indicators relating to normative and economic risk-bearing capacity indicates a need for action as part of operational and strategic management in the event of critical developments.

Budgets based on total risk exposure in accordance with Art. 92 CRR at the level of each business sector/area are taken into account to ensure risk-bearing capacity. The allocated budgets are available to the business sectors/areas for backing existing and new business for the various types of risk. Capital allocation is conducted as part of KfW Group's annual business sector planning process. In addition to the requirements induced by business sector and area planning, this process also takes into account the risk objectives and the bank's risk appetite. Budget compliance is checked on a monthly basis and action is taken if necessary. Moreover, economic capital budgets are set for material risk types as their central control and limit variable, and are monitored monthly.

Normative risk-bearing capacity

Key regulatory figures

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Total risk exposure in accordance with Art. 92 CRR	139,643	135,135
– Credit risk	131,642	127,261
– Market price risk	2,369	2,488
– Operational risk	5,632	5,386
Regulatory capital	35,126	32,335
– (Common equity) tier 1 capital	34,891	32,279
– Additional tier 1 capital	0	0
– Tier 2 capital	235	57
CET1 ratio	25.0%	23.9%
Tier 1 capital ratio	25.0%	23.9%
Total capital ratio	25.2%	23.9%

KfW calculates the total risk exposure for significant parts based on an advanced IRBA. The increase in the capital ratio is primarily due to the increase in own funds, which rose by around EUR 2.8 billion year on year and thus more than offset the increase in total risk exposure, which was largely driven by methodology. At 25.2%, the total capital ratio at year-end 2022 remained above the overall capital requirement. KfW Group's exposure to the macroprudential measures announced on 12 January 2022 to mitigate systemic risks in the residential property market continues to be assessed as low, as KfW's portfolio does not contain any material exposure secured by residential property. According to the current impact analysis, the increase in the countercyclical capital buffer in Germany by 0.75 percentage points will increase the capital requirements by 0.21 percentage points, which will be included in capital planning from 1 February 2023.

Minimum requirements for total capital ratios

	31 Dec. 2022	31 Dec. 2021
Total SREP capital requirements (TSCR)	12.25%	12.50%
Capital conservation buffer	2.50%	2.50%
Countercyclical capital buffer	0.17%	0.08%
Other systemic buffer	1.00%	1.00%
Overall capital requirement (OCR)	15.92%	16.08%

Economic risk-bearing capacity

To assess its economic risk-bearing capacity, KfW Group compares its economic capital requirement for potential losses from material quantifiable risks to capital with its available financial resources calculated at present value. The basis of available financial resources is KfW Group's equity adjusted for present value differences from the present-value calculation of market price risk, previously unrecognised accrued profits, the risk provisions for non-value-adjusted business and some capital deduction items to ensure a prudent economic valuation. KfW Group bases its calculation of the economic capital requirement on a one-year time frame.

Credit risk is the risk of a negative impact on net assets, earnings position and liquidity if business partners fail to meet their payment obligations to KfW Group at all, in due time or in full (default) or if their credit ratings deteriorate (migration). Credit risk includes settlement risk in connection with derivative transactions and counterparty risk including credit valuation adjustment risk ("CVA" risk) in relation to derivative exposures. CVA risk is reported as part of the combined "counterparty risk (including CVA risk)" sub-risk type. The economic capital requirement for credit risk is quantified by the Risk Controlling department, largely with the help of statistical models. For counterparty risk including migration risks, the loss potential is computed using a loan portfolio model and the risk measure "credit value-at-risk". In this context, possible migrations until the end of the respective loan term are included at present value in the present value-based approach adjusted in November 2022. The economic capital requirement for CVA risk is based on the CVA charge of Pillar I, which is adjusted for economically relevant aspects (including consideration of other risk-relevant items and the use of internal ratings). For settlement risks, a buffer determined on the basis of different quantification approaches, which is reviewed annually, is applied in calculating economic risk-bearing capacity.

Since January 2021, the economic capital requirement for **equity investments at operational level** has been measured using a new approach in order to take account of possible fluctuations in the value of the positions and thereby also to meet the corresponding requirements set out in the Bundesbank guideline on procedural integration into the overall performance and risk management processes ("ICAAP").

The economic capital requirement for **market price risk** is calculated on the basis of the value-at-risk concept. Pillar II's economic analysis takes account of interest risk (consisting of the jointly analysed sub-risk types: interest risk, as well as tenor and cross-currency basis spread risks) of the banking book, foreign currency risk, credit spread risk for securities and interest rate volatility risk. The possible loss of present value or price is determined for each type of market price risk using a value-at-risk based on historical simulation. Ultimately, the economic capital requirement is determined by total value-at-risk ("VaR"), which takes into account diversification effects between the various sub-types of market price risk.

The economic capital requirement for **operational risk** is calculated using an internal statistical model, which was derived from regulatory requirements for advanced measurement approaches. It takes a risk-sensitive approach to internal and external event data and risk scenarios. The capital requirement is calculated at group level, taking into account diversification effects, and then allocated to the business sectors. Moreover, the measurement of the quality of operational risk management within the group can generate premiums that are then applied to the capital requirement.

Project risks are also taken into account in the risk-bearing capacity concept. Both quantified individual risks from projects and building blocks (agile implementation units used to bundle activities to further develop IT) and general assumptions about potential losses in the project portfolio are included in risk measurement.

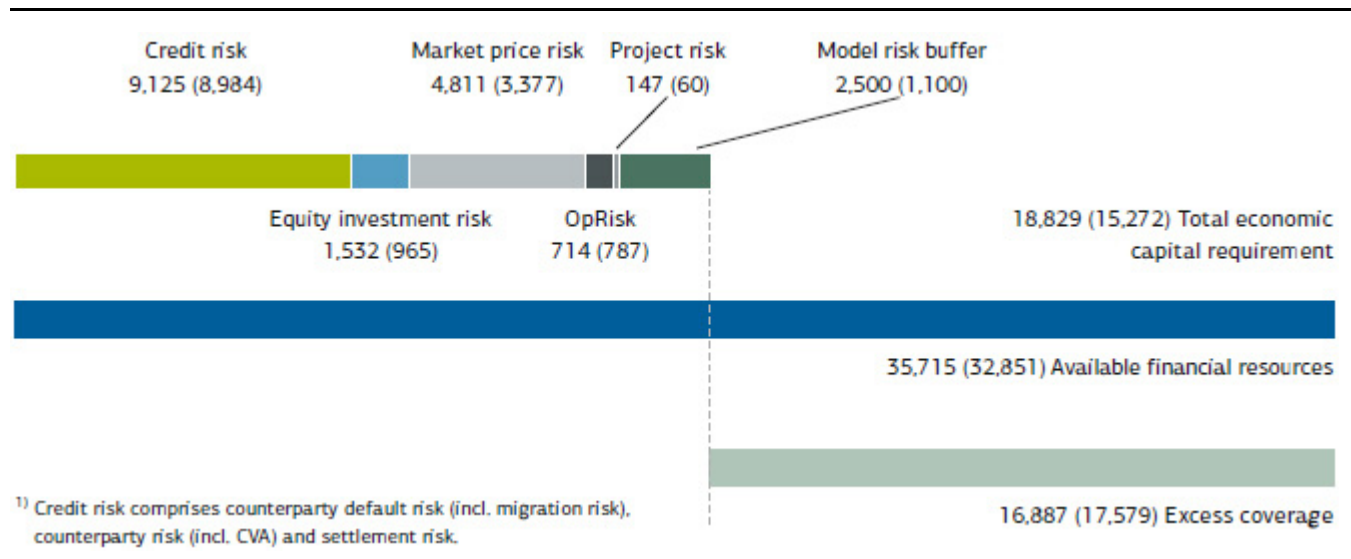
In addition, as a central result of the annual ICAAP, a **model risk buffer** is applied to cover model weaknesses and foreseeable methodological changes in economic risk-bearing capacity, adjusted during the year as necessary.

Using this method, the economic risk-bearing capacity as of 31 December 2022 satisfied a confidence level of 99.90%. The excess coverage of the available financial resources beyond the total capital requirement as of 31 December 2022 (EUR 16,887 million) decreased compared to the previous year's figure (EUR 17,579 million). This is largely due to the increase in the total capital requirement, which resulted in particular from higher market price risks in 2022 due to greater market volatility and the associated higher interest risk. The capital requirement for equity investment, credit and project risks also increased. The higher capital requirement for equity investment risk is due to both method adjustments and business expansion. The capital requirement for credit risk rose in particular due to the transition to the present value approach, with a corresponding reduction in counterparty risk (including CVA risk). The capital

requirement for project risk increased primarily due to technical aspects of the transition to the new “building blocks” project management structure. By contrast, the capital requirement for operational risk decreased, due in particular to updates to the risk scenarios included in the model. The model risk buffer was increased during the year mainly due to a model weakness regarding the delayed reaction of the market price risk model to sudden crisis scenarios. Available financial resources, which also increased primarily due to the change to the present value approach as well as the positive annual result, only partially compensated for the increase in the total capital requirement.

Economic risk-bearing capacity as of 31 December 2022

EUR in millions



In brackets: figures as of 31 December 2021

The group manages **liquidity risks** in the narrower sense (synonymous with insolvency risk) primarily on the basis of internal risk indicators. Moreover, maximum liquidity gap limits (outflows on a monthly and yearly basis), available liquidity (liquidity potential) and the difference between the average residual maturity of inflows and outflows (maturity gap) are monitored. On the basis of the KfW Law, KfW's liquidity risks are additionally limited by the utilisation threshold in accordance with Article 4 of the KfW Law. The utilisation threshold compares current and non-current liabilities and must not exceed 10%. Internal indicators relating to the liquidity situation are based on comparing liquidity requirements and liquidity potential as a ratio in stress scenarios of differing severity. No capital is currently allocated as part of calculating risk-bearing capacity.

Reputational risks are evaluated and managed on a qualitative basis. No capital backing is currently provided as part of calculating risk-bearing capacity. The materiality of reputational risk is derived from KfW Group's Federal Government mandate. It reflects stakeholders' expectations as well as the bank's self-image of adhering to all relevant ethical, governance, environmental and compliance standards. This also applies irrespective of previously unobserved or potential adverse effects on net assets, earnings position or liquidity due to reputational events.

Each risk identification model represents a simplification of a complex reality and builds on the assumption that risk parameters observed in the past can be considered representative of the future. Not all possible inputs and their complex interactions can be identified and modelled for the risk development of a portfolio. This is addressed by including safety margins in the design of the model, and a supplementary model risk buffer in the calculation of economic risk-bearing capacity. This is one reason why KfW Group carries out stress tests with both the credit risk models and the market price risk models. The group continues to develop its risk models and processes in line with current banking regulations.

Stress and scenario calculations

To ensure the early indicator function and proactive focus in the ICAAP, KfW Group monitors, on a quarterly basis, different scenarios (a baseline or expected scenario, a downturn scenario (slightly deteriorated economic conditions compared to expectations) and a stress scenario (deep recession)) as well as their respective effects on risk-bearing capacity. These analyses demonstrate the group's resilience and ability to act in the event of the occurrence of one of these scenarios. The baseline and stress scenarios also take the leverage ratio into account.

The baseline scenario includes projected business performance, expected consolidated comprehensive income, and other effects influencing normative risk-bearing capacity, such as foreseeable changes in the capital structure and methodological developments. It also takes into account the negative effects on the earnings position and risk situation resulting from the expected economic development.

The downturn and stress scenarios simulate adverse effects of varying severity on earnings and changes in capital requirements during the forecast period (in the economic perspective directly related to risk-bearing capacity as of the balance sheet date) extending beyond the negative effects expected in the baseline scenario. The stress scenario assumes a prolonged and severe global recession. In both scenarios, the group assumes an extended increase in credit and equity investment risks and losses. In these scenarios, the EUR and USD interest rates as well as the EUR-USD exchange rate are forecast to develop in line with the economic situation. At the same time, it is assumed that increasing market uncertainties will lead to increased volatility in interest rates, currencies and credit spreads, as a result of which the economic capital requirement for the corresponding types of risk will rise. Losses from operational and project risk further reduce available capital in the stress scenario.

The group met the economic risk-bearing capacity requirements, including the confidence level of 99.90% in the scenarios analysed, as of all quarterly calculation dates in 2022. The regulatory capital ratios and the leverage ratio exceeded the threshold values defined for risk appetite at all times.

Stress testing activities in 2022 focused on simulating the impact of the Russian attack on Ukraine, including the economic consequences from energy and raw material shortages. Moreover, the potential consequences of the looming conflict between China and the USA with bloc formation at global level were also considered. A scenario was also prepared on consequences for selected sectors and companies in the case of attacks on critical infrastructure in Europe. In addition to the scenarios motivated by current macroeconomic risk potentials, further stress tests are regularly carried out to examine the resilience of KfW Group's economic and normative risk-bearing capacity, as well as its liquidity resources. Sensitivity analyses and standard stress tests as well as concentration and inverse stress tests are also carried out to demonstrate how concentration risks and other potential dangers could jeopardise KfW Group's risk-bearing capacity and business model. Work on expanding the stress testing methods for ESG risks, also continued in 2022, with a current focus on acute physical climate risks.

The scenario calculations and stress tests performed do not indicate any need for action with regard to KfW Group's risk-bearing capacity or liquidity resources. A digital stress test quarterly reporting system was introduced in the first half of 2022 in order to present the assumptions and results of the various stress tests and scenario calculations to the KfW Group decision-makers in a target group-appropriate manner.

KfW's stress testing programme is subject to an annual adequacy assessment, the aim being to further enhance the stress tests and scenario calculations as a component of overall bank management in order to meet internal and regulatory requirements.

Types of risk

CREDIT RISK

KfW Group is subject to credit risk in the context of its promotional mandate. Credit risk includes, in particular, counterparty default risk (including migration risk), as well as counterparty risk (including credit valuation adjustment (CVA) risk) and settlement risk.

The majority of final borrower default risks are borne by the on-lending institutions in the domestic promotional lending business. Due to the business model, this results in a large proportion of bank risks in the portfolio. Other main risks result from promotional activities in the area of start-up finance for SMEs and equity investments. Particularly in these segments of domestic promotion, KfW Group bears the risk stemming from final borrowers. In addition, KfW Group faces risks in the business sectors Export and project finance as well as Promotion of developing countries and emerging economies.

Debtor level	Sovereigns	Banks	Enterprises	Other
Rating procedures (Probability of default)	– Country rating	– Bank rating	– Corporate rating – SME rating	– Special financing – Structured products – Retail – Start-up rating
Exposure at default				
Business level	Loss given default			
Loan portfolio model				

Validation and further development processes

Counterparty default risk¹⁾ is measured by estimating the probability of default (“PD”), the exposure at default (“EAD”) and the loss given default (“LGD”). The product of the three aforementioned variables is the loss that can be expected, statistically, on average over many years.

KfW Group uses internal rating procedures to determine the probability of default for banks, countries, corporates, small and medium-sized enterprises (SMEs) and start-ups. These procedures are based on scorecards²⁾ and generally follow a uniform model architecture consisting of a machine rating, a checklist, a group logic and a manual override. Simulation and cash flow-based rating procedures are used for significant parts of special financing and structured products, some of which were licensed from an external provider. For structured products, tranche ratings are determined on the basis of the default pattern of the asset pool and the waterfall structure of the transactions. The existing small-ticket retail positions (e.g. in the area of education financing) are valued using an automated procedure specially set up for this purpose. The rating procedures aim to predict the probability of default on a one-year basis. As a rule, the middle and back-office departments are responsible for preparing ratings for risk-bearing business. Ratings for these exposures are updated regularly, at least once per year. There are exceptions for loans below a threshold of EUR 10 million from the special programmes for coronavirus aid. There were several further developments in PD rating procedures in the reporting year. The largest advanced procedure for banks is scheduled to go live in January 2023.

¹⁾ Also includes counterparty risk

²⁾ A scorecard is a mathematical and statistical model and/or an expert knowledge-based model. The individual risk factors considered relevant for credit rating are converted into a score depending on their prevalence or value and weighted for aggregation.

Mapping the probability of default on a uniform master scale for the entire KfW Group enables a comparison of ratings from different rating procedures and business sectors. The master scale generally consists of 20 distinct classes which are divided into four groups: investment grade, non-investment grade, watch list and default. The range of default probabilities and the average default probability are defined for each class of the master scale. There are operating procedures specifying the responsibilities, competencies and control mechanisms associated with each rating procedure. External ratings are mapped to KfW Group's master scale to ensure the comparability of internal ratings with ratings of external rating agencies. The rating procedures are validated and further developed at regular intervals.

Exposure at default ("EAD") and valuation of collateral influence the severity of loss. Collateral has a risk-mitigating effect in calculating loss given default ("LGD"). In valuing acceptable collateral, the expected net revenue from collateral realisation in the case of loss is determined. Haircuts to cover the credit risk of final borrowers are a major factor in the valuation of assignments made by financing partners in the on-lending business. For tangible collateral, further haircuts are applied for expected changes in value, as well as devaluation resulting from depreciation. Depending on the availability of data, the various valuation procedures for individual types of collateral are based on internal and external historical data and on expert estimates. In the case of personal collateral, the collateralised portion is treated as a direct transaction with the collateral provider, i.e. the probability of default and the extent of the collateral provider's uncollateralised loss are applied. A risk principle for loan collateral regulates uniform management, valuation and recognition of collateral across KfW Group. In addition to net revenue from collateral realisation, the recovery rate for uncollateralised exposure amounts is also an important component in determining LGD. The collateral valuation procedure and the procedure for estimating the EAD and LGD are also subject to validation and further developed as needed, with new regulatory requirements also addressed.

Settlement risks and counterparty risks (including CVA)³⁾ arise for KfW in connection with derivative transactions when hedging interest and currency risks. Settlement risks arise if, after the bank's own transaction has been concluded, the derivative partner's counterpayment is not made. Derivative transactions also involve the risk of changes in value (counterparty risks including credit valuation adjustment (CVA)), which can be caused by a change in the credit quality of the counterparty (credit risk including default risk), a change in the absolute price of the derivative (market price risk) or a combination of the two.

KfW Group has limit management systems, risk guidelines and various portfolio guidelines to limit risks from new business. This set of risk management instruments forms the basis for the second vote on lending transactions, serves as an orientation guide for loan approvals and has the function of ensuring the appropriate quality and risk structure of KfW Group's portfolio while taking into account the special nature of KfW Group's promotional business. At KfW, Group Risk Management has the second vote on a single exposure level. KfW IPEX-Bank and DEG each have their own second vote independent of the front office. The relevant business decision-making processes are structured with a view to risk. Lending transactions require a second vote depending on the type, scope of the risk content and complexity of the transaction. The qualification levels for approval of new business depend on rating, collateralisation or net exposure and total commitments to the group of connected customers. Approval of the responsible supervisory body is also required for individual transactions of pre-defined volumes.

The portfolio guidelines distinguish between different types of counterparties and product variants and define the conditions under which business transactions may be conducted. In addition, risk guidelines for countries, sectors and products are defined in order to react to existing or potential negative developments with specific requirements for lending. The limit management systems ultimately track both risk concentrations (concentration limits) and credit rating-dependent individual counterparty risk (counterparty limits). Concentration limits serve to restrict risk concentrations in the loan portfolio and thus to prevent major individual losses. Counterparty limits serve to fine-tune the counterparty-specific management of credit default risk.

³⁾ See section on "Economic risk-bearing capacity" for measurement of the economic capital requirement for credit risks.

Existing higher-risk exposures are divided into a watch list and a list for non-performing loans. The watch list serves to identify potential problem loans early. This involves regularly reviewing and documenting the economic situation, the particular borrower's market environment and the collateral provided, and formulating and deciding proposals for remedial action as needed – particularly proposals for risk-limiting measures. Process responsibility for non-performing loans, and also to a large extent for watch-list exposures⁴⁾, lies with restructuring units, ensuring involvement of specialists, intensive support and professional management of problematic loans. The objective of this system is to achieve recovery of a loan through restructuring, reorganisation and workout arrangements. If the business partner is deemed incapable or unworthy of restructuring, the priority becomes optimum realisation of the asset and the related collateral. The Restructuring division is responsible for non-performing loans and for providing intensive support to banks and higher volume loans with a risk amount greater than EUR 1 million in the KfW portfolio. The portfolio credit management department is responsible for supporting retail business. Rules with differing details apply for the special programmes for coronavirus aid, which are fully backed by a federal guarantee. KfW IPEX-Bank's non-performing loans and exposures under intensive support, including KfW and DEG's trust activities, are managed directly by each subsidiary. Internal interface regulations are in place in the relevant business sectors to ensure control of responsibilities and allocation. Restructuring also cooperates with the front-office departments and the central Legal Affairs department.

In the event of a crisis in the banking sector, the bank has to be able to act without delay both in-house and externally. A crisis plan for banks is in place for this purpose. It primarily provides for the establishment of a dedicated working group under the direction of the Credit Risk Management department and immediate loss analysis so that the necessary next steps can be implemented quickly.

Information on default risk and default risk concentrations (gross carrying amounts) as of 31 December 2022 – amortised cost

		Loans and advances to banks			Loans and advances to customers ¹⁾		
		Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
		EUR in	EUR in	EUR in	EUR in	EUR in	EUR in
		millions	millions	millions	millions	millions	millions
Investment grade	Rating 1–4	156,552	0	0	48,233	36	0
	Rating 5–8	121,873	0	0	32,556	0	0
Non-investment grade	Rating 9–15	20,978	657	0	53,634	4,204	0
Watch list	Rating 16–18	10,911	2,179	0	5,888	4,587	0
Default	Rating 19–20	0	0	1,018	0	0	5,339
Total		310,314	2,836	1,018	140,311	8,827	5,339

		Securities and investments			Off-balance sheet transactions		
		Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
		EUR in	EUR in	EUR in	EUR in	EUR in	EUR in
		millions	millions	millions	millions	millions	millions
Investment grade	Rating 1–4	21,246	0	0	55,154	14	0
	Rating 5–8	12,394	8	0	39,562	0	0
Non-investment grade	Rating 9–15	62	0	0	33,412	1,196	0
Watch list	Rating 16–18	24	0	0	1,566	1,568	0
Default	Rating 19–20	0	0	0	0	0	532
Total		33,725	8	0	129,693	2,777	532

¹⁾ Loans and advances to customers also include the retail business, for which the stage is not derived based on the current rating but on the basis of negative criteria and 30 days past due status. Risk concentrations arise in the event of negative criteria or 30 days past due status. If one of these criteria is met, the customer is placed on the watch list. In contrast, the stage 1 share of the retail segment without significant deterioration in credit risk is largely allocated to "non-investment grade".

⁴⁾ The assumption of responsibility for watch-list cases at KfW IPEX-Bank is decided on a case-by-case basis by Risk Management in consultation with the unit responsible for restructuring.

**Information on default risk and default risk concentrations (gross carrying amounts)
as of 31 December 2021 – amortised cost**

		Loans and advances to banks			Loans and advances to customers ¹⁾		
		Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions
Investment grade	Rating 1–4	111,392	0	0	33,960	0	0
	Rating 5–8	144,040	0	0	24,370	0	0
Non-investment grade	Rating 9–15	34,326	243	0	34,503	4,675	0
Watch list	Rating 16–18	16,204	1,636	0	8,765	20,098	0
Default	Rating 19–20	0	0	648	0	0	4,531
Total		305,962	1,880	648	101,598	24,773	4,531

		Securities and investments			Off-balance sheet transactions		
		Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions
Investment grade	Rating 1–4	21,681	0	0	41,582	0	0
	Rating 5–8	13,736	0	0	41,555	0	0
Non-investment grade	Rating 9–15	346	0	0	22,579	1,440	0
Watch list	Rating 16–18	22	0	0	3,468	3,285	0
Default	Rating 19–20	0	0	0	0	0	312
Total		35,784	0	0	109,184	4,725	312

¹⁾ Loans and advances to customers also include the retail business, for which the stage is not derived based on the current rating but on the basis of negative criteria and 30 days past due status. Risk concentrations arise in the event of negative criteria or 30 days past due status. If one of these criteria is met, the customer is placed on the watch list. In contrast, the stage 1 share of the retail segment without significant deterioration in credit risk is largely allocated to "non-investment grade".

**Credit risks and related credit protection of financial instruments
measured at amortised cost as of 31 December 2022**

	Maximum risk of default ¹⁾	Maximum risk of default stage 3	Risk mitigation from collateral stage 3	
			tangible	personal
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Loans and advances to banks	313,919	890	11	602
Loans and advances to customers	152,624	4,128	93	2,971
Securities and investments	33,721	0	0	0
Off-balance sheet transactions	132,887	484	0	28
Total	633,151	5,502	104	3,601

¹⁾ Net carrying amount, excluding collateral and other credit enhancements

Credit risks and related credit protection of financial instruments measured at amortised cost as of 31 December 2021

	Maximum risk of default ¹⁾	Maximum risk of default stage 3	Risk mitigation from collateral stage 3	
			tangible	personal
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Loans and advances to banks	308,251	546	13	354
Loans and advances to customers	129,197	3,293	118	2,132
Securities and investments	35,774	0	0	1
Off-balance sheet transactions	114,126	297	0	3
Total	587,348	4,136	132	2,491

¹⁾ Net carrying amount, excluding collateral and other credit enhancements

A large part of the personal collateral of the financial instruments classified as stage 3 comprises federal guarantees and credit insurance. Tangible collateral for financial instruments classified as stage 3 primarily consists of aircraft and ship mortgages.

As a rule, the collateral for financial instruments measured at fair value relates almost entirely to the collateral for financial derivatives.

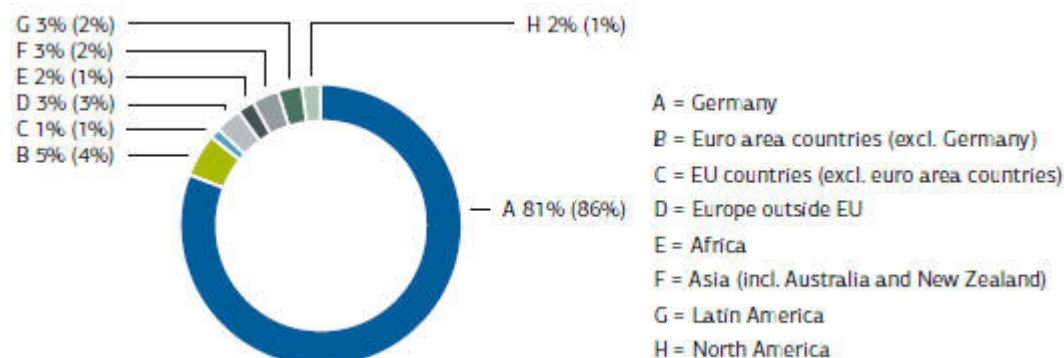
KfW Group did not take possession of any assets previously held as tangible collateral in 2022.

Portfolio structure

The interaction of the risks associated with the individual exposures in KfW Group's loan portfolio⁵⁾ is assessed based on an internal portfolio model. Concentrations of individual borrowers or groups of borrowers give rise to a risk of major losses that could jeopardise KfW Group's existence. On the basis of the economic capital concept, the Risk Controlling department measures risk concentrations by individual borrower, sector and country. Risk concentrations are primarily reflected in the economic capital requirement. The results of these measurements form the main basis for managing the loan portfolio.

Economic capital requirement by region

31 December 2022 (31 Dec. 2021)



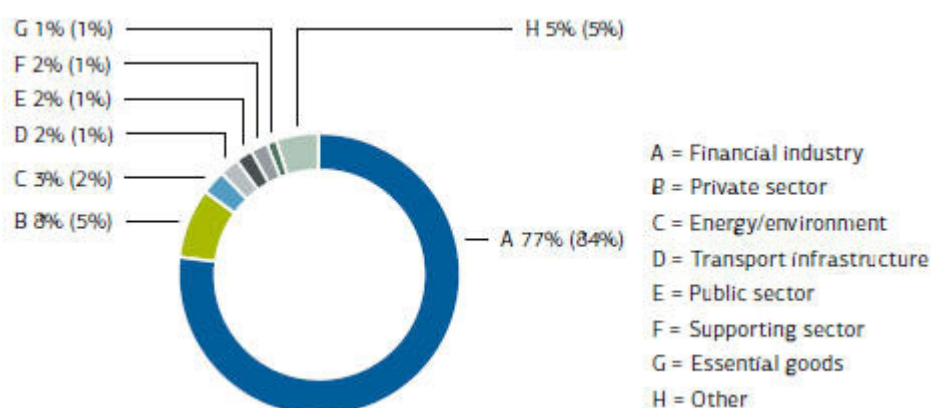
Regions

As of 31 December 2022, 86% of KfW Group's loan portfolio in terms of economic capital requirements was attributable to the euro area (31 Dec. 2021: 90%). The main driver behind the decline is the move to a new present-value method for calculating risk indicators. For the banking portfolio in particular, this results in a sharp reduction in the economic capital requirement. This is offset by an increase in the economic capital requirement for other counterparties in the portfolio.

⁵⁾ The loan portfolio includes loans as well as securities and investments in performing business. The non-performing portfolio is only included in the presentation of credit quality.

Economic capital requirement by sector

31 December 2022 (31 Dec. 2021)

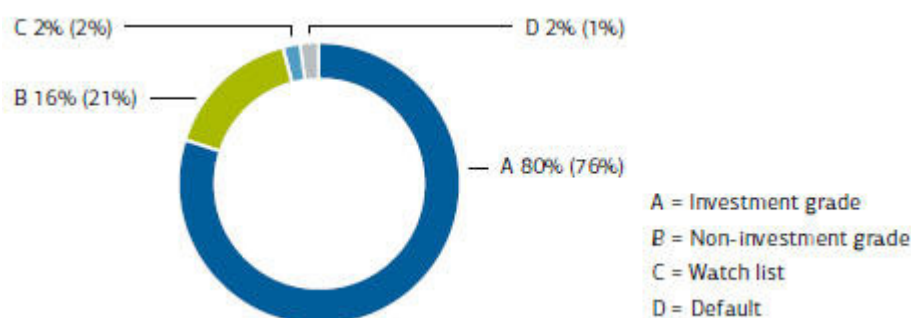


Sectors

The significant share of overall capital required for credit risks attributable to the financial sector is due to KfW Group's promotional mandate. By far the greatest portion of KfW Group's domestic promotional business consists of loans on-lent through commercial banks. The model adjustment stated in the previous paragraph also relates to sectors. Overall, the financial sector's share of the economic capital requirement declined to 77% (31 Dec. 2021: 84%). This development was primarily due to the above-mentioned decrease in the economic capital requirement in the banking portfolio, which is included in the financial sector.

Credit quality by net exposure

31 December 2022 (31 Dec. 2021)



Credit quality

As credit quality is a major factor influencing economic capital requirements, analysing the credit quality structure involves examining the distribution of net exposure⁶⁾ by credit quality category. The increase in the investment grade share of net exposure and the reduction in the non-investment grade share, largely result from rating upgrades in the banking portfolio in 2022. The share of watch list positions of 2.1% (previous year: 1.8%) and the share of default positions of 1.9% (previous year: 1.4%) both rose slightly.

Securities-based securitisations in KfW Group's portfolio

Securitisations had a par value of around EUR 6.0 billion as of 31 December 2022. Accounting for the mark-to-market valuation of the securities reported at fair value and impairments, the portfolio had a book value (including pro rata interest) of around EUR 6.1 billion. The following tables present the composition of the securitisation portfolio by asset class, rating grade and geographical distribution.

⁶⁾ Net exposure is the economic loss that potentially occurs in the event of an economic or political default event.

Geographical breakdown of the underlying asset pool (based on par value)

	31 Dec. 2022	31 Dec. 2021
	%	%
Europe	99.9	99.9
World	0.0	0.0
North America	0.1	0.1
Africa	0.0	0.0
Asia	0.0	0.0

Exposure based on par values

	ABCP	Auto-ABS ¹⁾	RMBS	Other securitisa- tions	Total as of 31 Dec. 2022	Total as of 31 Dec. 2021
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Investment grade	3,385	1,512	744	399	6,040	6,090
Non-investment grade	0	0	0	0	0	0
Watch list	0	0	0	0	0	0
Default	0	0	0	7	7	7
	3,385	1,512	744	406	6,047	6,097

¹⁾ Auto ABS are based on receivables from automotive financing agreements.

The portfolio volume decreased slightly compared to the volume of 31 December 2021 (nominal value around EUR –0.1 billion). The decline largely relates to the investment grade portfolio. In terms of the geographical breakdown of the underlying asset pool, the entire portfolio remains almost fully attributable to Europe, with Germany accounting for the lion's share.

EQUITY INVESTMENT RISKS

In managing equity investment risks, KfW Group differentiates between risks from equity investments at an operational level and strategic equity investments:

Equity investments (operational level)

Undertaking equity investments at an operational level is part of the group's promotional mandate. Accordingly, equity investments are made in connection with domestic and European investment financing and in the business sectors KfW Development Bank, DEG and Export and project finance, and fund investments of KfW Capital. KfW's group-wide basic rules for equity investments at an operational level are set out in guidelines. Specific rules tailored to certain segments of equity investments are also set out in portfolio guidelines, working instructions or risk guidelines. Risks are measured at the individual loan commitment level for operational equity investments using recently further developed models specified for this purpose. Equity investment portfolio risks are monitored quarterly in the KfW Group risk report and reported annually in a separate report.

Strategic equity investments

Strategic equity investments support KfW's mandate of providing an efficient and sustainable promotional offering. In addition to reinforcing and expanding core competencies, the focus of this investment type is on complementing KfW's business sectors. Strategic equity investments normally have a long-term holding period. KfW also makes strategic equity investments in accordance with Article 2 (4) of the KfW Law (mandated transactions). The Federal Government mandates such equity investments to KfW because the Federal Republic of Germany has a state interest in them.

Dedicated organisational units are responsible for strategic equity investments based on an equity investment manual that describes legal bases, strategies, principles, procedures and responsibilities of equity investment management. Acquisitions and disposals of and changes to strategic equity investments are subject to defined processes as well as authorisation by the Executive Board and, in the cases covered under the KfW Bylaws, authorisation by the Board of Supervisory Directors. Moreover, acquiring a strategic equity investment in excess of 25%, creating or increasing such an equity investment or fully disposing of it requires authorisation by the Federal Ministry of Finance in accordance with Section 65 (3) of the Federal Budget Code (*Bundeshaushaltsordnung – “BHO”*). Strategic equity investments and their individual risks are monitored and presented to the Executive Board as part of an annual equity investment report, as well as in ad hoc reports if necessary. The individually defined strategies for the equity investments are updated annually. Moreover, the group is normally represented in the supervisory bodies of its strategic equity investments.

As of 31 December 2022, the group's equity investment portfolio consists of fund investments of KfW Capital with an economic capital requirement of EUR 558 million, equity investments of DEG including promotional business with an economic capital requirement of EUR 297 million, and other promotional business (economic capital requirement: EUR 677 million).

MARKET PRICE RISK

KfW Group measures and manages market price risk on a present-value basis. The key drivers of market price risk in this context are:

- interest risk (consisting of the jointly analysed sub-risk types of interest risk, tenor basis risk and cross-currency basis spread risk),
- interest rate volatility risk,
- foreign currency risk and
- issuer-related spreads for securities (credit spread risk).

Market price risk within the group required a total of EUR 4.81 billion in economic capital as of 31 December 2022. This is EUR 1.43 billion more than as of 31 December 2021. The change is mainly due to the increased interest risk (highly volatile markets). The highly volatile markets also caused an increase in interest rate volatility risk and credit spread risk. Currency risk decreased due to a lower USD present value.

Economic capital requirement for market price risk

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Interest risk ¹⁾	4,268	2,813
Interest risk	4,026	2,734
Tenor basis spread risk	404	282
Cross-currency basis spread risk	489	631
Interest rate volatility risk	426	384
Foreign currency risk	439	693
Credit spread risk	816	411
Diversification	–1,138	–925
Market price risk	4,811	3,377

¹⁾ Due to diversification effects in the interest risk, the sub-risks do not add up to the total interest risk.

Value-at-risk approach

The economic capital requirement is calculated using a value-at-risk ("VaR") calculation across the various types of market price risk using a uniform method. Historical simulation is used as the VaR model. Historical simulation is based on market data time series comprising the previous three years (751 trading days). The uniform holding period is twelve months, with time scaling based on a one-day holding period. In addition, scaling to the target quantile (99.9%) is carried out on the basis of a 97.5% quantile determined using historical simulation.

VaR indicators are determined for each of the following sub-types of market price risk: interest risk, tenor and cross-currency basis spread risks, foreign currency risk, interest rate volatility risk and credit spread risk. The total VaR is also calculated, taking account of diversification effects between the aforementioned risk sub-types. The total VaR, interest risk, interest rate volatility risk, credit spread risk and foreign currency risk are limited.

Interest risk

Yield curves defined as risk factors serve as the basis for historical simulation to quantify interest risks. These implicitly include interest risk as well as tenor and cross-currency basis spread risks. In contrast, interest rate volatility and credit spread risks are explicitly not included in interest risk, but are modelled separately and reported using separate key VaR indicators. The capital requirement for interest risk increased by EUR 1,455 million to EUR 4,268 million as of 31 December 2022.

Interest rate volatility risk

The interest rate volatility risk is based on changes in the market values of modelled interest rate options (e.g. termination rights or floors in the variable-rate lending business). The economic capital requirement for these risks is calculated in the same way as for other sub-types of risk, using historical simulation (see Value at Risk section). Interest rate volatility risk arises primarily as a side effect of the original lending business and is limited by means of an ECAP sub-limit. The capital requirement for interest rate volatility risk was EUR 426 million as of 31 December 2022.

Foreign currency risk

The economic capital requirement for foreign currency positions is calculated in the same way as for interest risk, using historical simulation. The capital requirement for foreign currency risk remained unchanged at EUR 439 million as of 31 December 2022.

Credit spread risks for securities

Risk measurement is carried out for the securities portfolio. The economic capital requirement for this risk type is calculated in the same way as for other risk types, using historical simulation. The economic capital requirement for credit spread risk as of 31 December 2022 was EUR 816 million. Credit spread risk increased by EUR 405 million year on year.

Stress testing

In addition to the calculation of the ECAP requirement based on the VaR model of historical simulation, the effects of extreme market situations (scenarios) on the present value and VaR target variables are determined by means of stress tests.

LIQUIDITY RISK

Liquidity risk in the narrower sense (synonymous with insolvency risk) is the risk of a lack of liquidity on the part of an institution or market. The liquidity gap creates the risk that payment obligations cannot be met, cannot be met on time or cannot be met in full.

The primary objective of liquidity management is to ensure that KfW Group is capable of meeting its payment obligations at all times. KfW is available as a contractual partner for all commercial transactions of its subsidiaries, particularly for their funding. For this reason, the liquidity requirements of the subsidiaries are included both in KfW Group's funding plans and in the liquidity maintenance strategy.

Liquidity risk is measured on the basis of economic scenario analyses and the utilisation threshold under Article 4 of the KfW Law. In addition, liquidity gaps are limited based on business already concluded, available liquidity potential and the maturity gap between inflows and outflows.

INTERNAL LIQUIDITY ADEQUACY ASSESSMENT PROCESS ("ILAAP")

The internal liquidity adequacy assessment process ("ILAAP") principle describes the management and monitoring of KfW Group's liquidity risk position. The procedure established by the institution serves to identify, measure, manage and monitor liquidity. The aim of the ILAAP is to ensure liquidity and avoid liquidity bottlenecks. It also assesses internal governance and institution-wide controls.

Insolvency risks are mainly limited through economic liquidity risk ratios and limits for liquidity potential and liquidity gaps. The aim of the liquidity risk strategy is to preserve the ability to meet payment obligations at all times and when due, even in stress scenarios.

Internal measurement of liquidity risk is based on scenario calculations. This approach first analyses the expected inflow and total outflow of payments for the next twelve months based on business already concluded. This baseline cash flow is then supplemented by planned and estimated payments (e.g. borrowings from the capital market, expected liquidity-related loan defaults or planned new business). The result provides an overview of the liquidity required by KfW Group over the next twelve months. The liquidity required is calculated for different scenarios. In this respect, market-wide and institution-specific risk factors are stressed and an evaluation is made of the impact on KfW Group's liquidity.

Parallel to the above approach, KfW Group also determines the available liquidity potential, which largely consists of KfW's account with the Bundesbank, repurchase agreement assets, the liquidity portfolio and the volume of commercial paper that is regularly placeable on the market. The available liquidity potential is subjected to stress analysis in the same way as the other cash flow components. The ratio of cumulative required liquidity to the cumulative available liquidity potential is calculated for each scenario. This figure may not exceed the value of 1 in any scenario for any period. The prescribed horizon in the normal case scenario is twelve months, in the stress case six months, and in the two worst case scenarios, three months. The scenario assumptions are validated on an annual basis.

The indicators are calculated and reported to the Market Price Risk Committee on a monthly basis. The following table presents the risk indicators for the scenarios as of 31 December 2022:

KfW liquidity risk indicators

	31 Dec. 2022 Indicator	31 Dec. 2021 Indicator
Normal case	0.23	0.20
Stress case	0.28	0.28
Worst case (institution-specific)	0.32	0.18
Worst case	0.48	0.38

The internal liquidity risk indicators remained below the internal limit of 1 throughout the year.

As a result of the Russia-Ukraine war, KfW has provided a considerable volume of loans and lines of credit to support the energy sector on behalf of the Federal Government. At EUR 54.2 billion the volume considerably exceeded that of normal disbursement for new lending business. Refinancing facilities from the Economic Stabilisation Fund ("WSF") among other sources, were available to ensure solvency at all times. Disbursements under the Federal Government's coronavirus special programme only had a very minor impact on liquidity held.

Current funding environment

KfW Group raised a total volume (net proceeds) of EUR 89.4 billion on the international capital markets in financial year 2022 (2021: EUR 82.6 billion).

There were 206 individual transactions, and bonds were issued in 13 different currencies. Around 84% of its long-term funding was in the two main funding currencies: the euro and the US dollar. The share of bonds denominated in euros was 65% in 2022 (2021: 55%), those denominated in US dollars amounted to 19% (2021: 26%). In addition, a total of EUR 31.6 billion in funds was raised through the WSF in 2022, of which EUR 19.8 billion were used to fund support measures for energy suppliers as a result of the Russia-Ukraine war and EUR 11.8 billion to fund the coronavirus special programmes. The outstanding volume of funding raised via the WSF totalled EUR 50.8 billion as of 31 December 2022, of which EUR 19.8 billion was for support measures for energy suppliers and EUR 31.0 billion for funding the coronavirus special programmes.

The programme volume of the Multi-Currency Commercial Paper programme, also known as the Euro Commercial Paper ("ECP") programme, designed for global investors amounted to EUR 90 billion. While at EUR 116.5 billion, the nominal volume issued under this programme was higher in 2022 than in the previous year (EUR 82.6 billion), the average maturity of the issues was lower, at 131 days (previous year: 160 days). The volume outstanding as of the reporting date 31 December 2022 was EUR 31.6 billion. The programme volume of the U.S. Commercial Paper ("USCP") programme came to USD 30 billion in 2022. KfW Group uses this programme, which is designed specifically for the US market, to cover a large portion of its need for short-term funds in US dollars. The nominal volume issued under the USCP programme was higher again than in the previous year (USD 62.3 billion) at USD 64.2 billion. The average maturity of the issues declined again, to 56 days (prior year: 66 days). The outstanding volume amounted to USD 6.8 billion as of 31 December 2022. In addition, KfW initially still held funds of around EUR 1.4 billion at the beginning of 2022 from the ECB's targeted longer-term refinancing operation ("TLTRO") concluded in March 2021. These funds were repaid to the ECB in March 2022.

OPERATIONAL RISK AND BUSINESS CONTINUITY MANAGEMENT

In accordance with Article 4 (1) no. 52 of the CRR, KfW Group defines operational risk as the negative impact on net assets, earnings position or liquidity that can result from inadequate or failed internal processes, people and systems or from external events. Operational risks are monitored by a central Risk Controlling unit and the methodology behind the models and procedures used for measurement and monitoring is adjusted on a regular basis. Moreover, the following operational risk sub-types are defined as material and are usually also monitored by specialised second line of defence functions: compliance risk, information security risk, business interruption risk and legal risk⁷⁾.

Compliance risk refers to the risk of legal or regulatory sanctions or negative effects on net assets, earnings position and liquidity arising from non-compliance with external/internal requirements, voluntary commitments or legal regulations.

Information security risk refers to the risk of negative effects on net assets, earnings position and liquidity arising from the inadequacy or failure of people, systems, processes or from external events that could adversely impact the confidentiality, integrity, authenticity and availability of data/information. This also includes threats posed by cyber risks.

Business interruption risk refers to the risk of negative effects on net assets, earnings position and liquidity arising from the disruption or interruption of critical business processes.

Legal risk refers to the risk of negative effects on net assets, earnings position and liquidity arising from the infringement of or non-compliance with formal or substantive laws insofar as this leads to legal disputes or action to avoid legal disputes. Infringement or non-compliance may be due in particular to legal adjustments/changes with retroactive effect, misinterpretation or misapplication of formal or substantive laws or incorrect drafting of agreements.

⁷⁾ Other risk sub-types: service provider risk (including outsourcing risk), secondary model risk, personnel risk, personal and physical security risk, conduct risk and operational risk from adjustment processes.

Management of risks is decentralised and performed within the business sectors and subsidiaries by the respective directors or managing directors, who are supported by the respective sector coordinators for Operational Risk and Business Continuity Management. Monitoring and communication of risks is performed on a cross-functional basis by Risk Controlling (central OpRisk Controlling) and Transaction Management (central Business Continuity Management). These staff develop the relevant methods and instruments for identifying and assessing risks and monitor their group-wide uniform application. The model for calculating the economic risk resulting from operational risks is also validated in the Risk Controlling department.

The aim of management and control of operational risk and business continuity management is the proactive identification and averting of potential losses for KfW Group, i.e. to make emergencies and crises manageable and to secure KfW Group's structural ability to remain in operation even in the event of loss of key resources.

Losses in KfW Group are recorded in an OpRisk events database and updated in the event of changes/developments. After each quarter, recorded loss events and any measures introduced as a result are reported to the relevant departments. The Executive Board, the Board of Supervisory Directors and the Operational Risk Committee are briefed monthly or quarterly as part of internal risk reporting. Ad hoc reports are also made if a loss exceeds a certain level.

In addition, potential operational risks are identified based on risk scenarios that are carried out group-wide. Operational risks are measured on the basis of expert assessments in combination with internal and external loss events as well as internal data (transactions, ratings, etc.), which are backed by a distribution assumption for loss frequency and loss amount. The results of the annual risk assessment and the calculated risk scenarios are reported to the Operational Risk Committee and the Executive Board. As part of the risk assessment, the business areas check the implementation of additional risk-mitigating measures (e.g. checks as part of the internal control system, or "ICS").

Where adequate monitoring of operational risks using metrics is possible, risk indicators are used. Compliance with centrally prescribed risk-mitigating requirements (e.g. training course participation, deadlines, escalation procedures) is monitored by the overarching Controlling function using business area-specific OpRisk information dashboards to ensure escalation across all levels up to the Executive Board in the event of non-compliance.

Losses caused by Russia's war on Ukraine that relate to operational risks are recorded as a collective event bank-wide; in addition, potential effects are evaluated as part of the risk scenarios to also ensure their inclusion in the calculation of the economic capital requirement for OpRisk.

The 2022 risk assessment was carried out from June to November 2022. Updating and recalculation of the scenarios led to a year-on-year reduction in the ECAP for operational risks (of approx. EUR 67 million) as of the reporting date.

Business continuity management is implemented if a business interruption occurs due to internal or external events. This is an integrated management process which covers the four key outage and loss scenarios: site outages (building or infrastructure), IT system outages, staff outages and service provider outages. Business continuity management incorporates preventative components (emergency preparedness) and reactive components (emergency and crisis management).

For the purpose of business continuity management, business processes are analysed and categorised based on how critical they are, and the supporting resources for each case examined accordingly. Identifying critical business processes and their dependency on supporting resources forms the basis for effective business continuity management. Individual measures are developed for these business processes and their supporting resources in order to be able to guarantee the required availability and reduce business risks. These include emergency workstations, emergency plans, communication tools and alerts/alarms. KfW Group's crisis team takes responsibility for overall crisis management if necessary. It practises emergency and crisis organisation teamwork in regular crisis team tests.

In light of the possible tightening of the gas and electricity supply, analyses of the impact on KfW were performed during the year. KfW can respond to temporary and locally limited power outages with established emergency processes to maintain emergency business operations for as long as possible. KfW's crisis management would step in in the event of more serious scenarios, such as a nationwide blackout.

Pandemic-related measures at KfW were lifted or eased with the discontinuation of various government coronavirus pandemic regulations. The established Covid task force was kept in place in a modified form and continuously assesses the current situation. The objective remains to prevent a loss of staff that would have an adverse impact on KfW's business activities; measures have been defined and communicated for this purpose.

Intra-group risk

Due to the risk relevance for the group and the objective of consistent group management, the risks of KfW IPEX-Bank, DEG and KfW Capital are fully taken into account as part of group risk management. For example, the business activities of these subsidiaries are applied to the group-wide limits on a look-through basis and included in the capital allocation and risk-bearing capacity calculation of the group. In addition, representatives of the subsidiaries are members of the group's risk committees. KfW also monitors the risk situation of its subsidiaries on a stand-alone basis. The management of each subsidiary reports regularly to the responsible members of the Executive Board on risk, as well as finance and strategy. KfW's Executive Board is also informed of the intra-group risk situation in a quarterly report.

Reputational risk

Reputational risk is the risk that the perception of the group from the point of view of the relevant internal and external stakeholders will deteriorate for the long term with a negative impact on KfW Group. This negative impact could lead to a decrease in KfW Group's net assets, earnings or liquidity (e.g. decline in new business) or may be of a non-monetary nature (e.g. difficulty in recruiting new staff). Reputational risk may arise as a consequence of other types of risk, or independently.

In the risk management process, reputational risk is primarily managed in a decentralised manner. The framework for this purpose includes sustainability management with group-wide sustainability mission statement, which uses a multidimensional approach to address central areas of action in the banking business and operations and as an employer. Furthermore, examinations of new activities in the NPP as well as of outsourced activities in outsourcing management are regularly conducted to detect potential reputational risks.

Moreover, as part of risk identification, the central reputational risk control function coordinates qualitative reputational risk assessment and creates a risk profile outlining the group's greatest reputational risks relating to the bank's most important stakeholders. In addition, reputational risk events that have occurred are reported on an ongoing basis.

Departing from a high reputational level achieved over the course of the COVID-19 crisis due to KfW's support measures to mitigate macroeconomic consequences, two emerging trends that could exacerbate risk were identified in 2022.

- KfW is stepping up its involvement in the fossil fuel sector on behalf of the Federal Government. This may result in sustainability rating downgrades and may be perceived as contradicting KfW's sustainability objectives. KfW's communication measures focus on explaining the background of the Federal Government-mandated transactions and KfW's role, as well as the impact of these commitments on the Paris Agreement sector guidelines, carbon accounting and SDG mapping, among other things.
- Due to the ongoing Russia-Ukraine war, a dynamic sanctions environment continues to prevail, which continues to entail elevated reputational risks. Established compliance processes have been a contributing factor in the non-occurrence of any events so far.

Project risk

Original project risk comprises, in particular, planning assumptions that turn out to be inaccurate. Project risk has implications for the achievement of project/building block objectives with regard to cost, time and scope (e.g. new technical requirements, and time constraints arising from parallel projects/change activities in building blocks). Managing project risk is part of building block management both during building block planning and during the execution of change activities in building blocks.

The internal "Planning, Control and Project Management" department supports the building blocks in fulfilling their objectives and achieving their targets. As the central authority for overall portfolio management, it provides the methodological framework for implementation of change activities in building blocks within the group and is responsible for the evaluation and presentation of the risk situation of the overall portfolio. Compliance with this framework and these requirements by the aforementioned building blocks is also monitored and supported.

Regulatory risk

Regulatory risks for KfW Group arise primarily from an increase in requirements regarding minimum capital ratios and from possible negative effects on the group's business model due to future changes in the regulatory environment. These include the costs resulting from the implementation and ongoing fulfilment of the additional requirements as well as the associated capital tie-up.

As part of the capital adequacy process, regulatory risk is addressed through conservative traffic light limits as a management and early warning instrument with regard to regulatory capital requirements. In addition, the capital adequacy of KfW Group is reviewed with the owners as part of its coordinated capital planning. In this context, in particular, potential negative effects arising from the finalisation of the capital adequacy requirements under Basel III are analysed and assessed.

Moreover, KfW actively keeps track of changes in its legal environment, which makes it possible to identify new regulatory requirements and to determine any necessary action.

Concentration risk

Concentration risk refers to the risk of negative effects on net assets, earnings position and liquidity arising from particularly large individual risk exposures or increased correlations of risk exposures. A distinction must be made between intra-risk concentrations (affecting one type of risk) and inter-risk concentrations (affecting different types of risk). In line with the "on-lending principle" enshrined in the KfW Law, KfW's risk profile is essentially characterised by a tendency towards high exposures to individual bank counterparties and the financial sector as a whole. The resulting concentration risks are limited based on defined risk appetite and are subject to stress tests. Additionally, KfW's business model as a promotional bank inevitably involves concentrations of earnings which are addressed by monitoring the risk appetite for performance and earnings.

Primary model risk

Primary model risk was identified in the 2022 risk inventory as a new significant overarching risk, as direct implications on net assets, earnings position and liquidity can arise from weaknesses or errors at both the model and model interaction level. At KfW, models are an essential component in risk, capital and business management. Using models means there are model risks, which can affect other types of risk such as credit or market price risk. A distinction is made between model risks arising from weaknesses and deficiencies in existing models (primary model risks) and model risks resulting from inappropriate use of these models (secondary model risks, as a sub-type of operational risk). Identifying and managing model risks is aimed at promoting an appropriate risk culture for dealing with models, adequate control of model risks, and timely and risk-oriented elimination or compensation of (systematic) model

weaknesses that have been identified, such as through independent validation. Primary model risk is compensated by capital buffers in the economic risk-bearing capacity and individual adjustments at the model level, such as valuation reserves and manual adjustments, or by taking margin of conservatism (MoC) premiums into account in model parameterisation. The annual model risk report gives the KfW Executive Board an overview of the models in focus, as well as a general assessment of model risks at KfW. The ongoing management of model risks is carried out via active performance of the individual model roles and through discussions and decisions in the risk committee meetings that regularly take place.

Additional internal control procedures

Process-integrated internal control system (ICS)

The aim of KfW Group's ICS is to use suitable principles, measures and procedures to ensure the effectiveness and profitability of business activities, compliance with the legal requirements applicable to KfW Group, the accuracy and reliability of external and internal accounting, and the protection of assets.

There are group-wide ICS rules as well as binding group-wide minimum requirements of the ICS. KfW Group's ICS is based on the relevant legal (bank regulatory) requirements⁸⁾, in particular those set forth in the KWG and MaRisk, and the market standard COSO model⁹⁾.

The KfW Executive Board holds overall responsibility for the group's internal control system. At KfW IPEX-Bank, KfW Capital and DEG, the respective company management holds overall responsibility. Design and implementation at the different corporate levels are the responsibility of the relevant managers according to the organisational structure.

In accordance with the COSO model, the ICS consists of the five following interrelated components: control environment, risk assessment, control activities, information/communication and monitoring/auditing. These components extend to all KfW Group's organisational entities, functions and processes.

The control environment is the environment within which KfW Group introduces and applies rules. Risk assessment includes the identification, analysis and evaluation of risks that result from implementing corporate strategy. Control activities are aimed at achieving corporate objectives effectively and detecting or minimising risks. A KfW Group information and communication policy is aimed at comprehensively providing all stakeholders with the information they need in the required detail to make decisions. Appropriate monitoring and audit mechanisms are in place to determine the functionality and effectiveness of the ICS.

Procedural rules form the basis of the ICS. These constitute the framework for a proper business organisation within KfW Group, in the form of a binding policy.

Workflow organisational measures and controls are intended to ensure that monitoring is integrated into processes. Monitoring measures integrated into processes serve to avoid, reduce, detect and/or correct processing errors or financial loss. The effects of any planned changes to operational processes and structures on the procedure and intensity of monitoring are analysed in advance.

KfW Group has implemented accounting-related controls to minimise the risk of error in stand-alone and consolidated financial statements and ensure the correctness and reliability of internal and external financial reporting. The accounting-related controls are part of the ICS.

The system is supplemented by the Compliance department, which defines and monitors compliance with relevant measures, on the basis of relevant rules and norms. The Compliance function performs regular process-based and

⁸⁾ See Section 25a (1) no. 1 KWG, MaRisk AT 4.3, and Sections 289 (5), 315 (2) no. 5, 324, and 264d HGB.

⁹⁾ COSO = Committee of Sponsoring Organizations of the Treadway Commission

accompanying monitoring of the relevant areas of the internal control system. The results of additional second line of defence units (OpRisk in particular) are included in monitoring and the further development of the internal control system.

To ensure the adequacy and effectiveness of the ICS, KfW regularly scrutinises and continually refines its standards and conventions.

A report is rendered annually to KfW Group's supervisory bodies. The adequacy and effectiveness of the ICS is also assessed by Internal Auditing on the basis of risk-based audits carried out independently of group procedures.

Compliance

The Executive Board bears the overall responsibility for compliance within the Group. The Executive Board delegates the associated tasks to the Compliance department. The officers appointed by the Executive Board for the relevant areas of responsibility are located in the Compliance department. They include, in particular, the (group) money laundering officer, the fraud officer (central unit in accordance with Section 25h KWG) and the company data protection officer.

The Compliance organisation is structured in accordance with the Three Lines of Defence ("LoD") model and as the second line of defence, it is aligned with the requirements for a MaRisk compliance function. In this context, group compliance has particularly included measures to adhere to data protection regulations and tax compliance as well as measures to prevent insider trading (securities compliance), general conflicts of interest, money laundering, terrorist financing ("TF") and other criminal activities as well as to comply with sanctions and embargo regulations and for monitoring legal requirements and the associated implementation measures. There are therefore binding rules and procedures that influence the day-to-day implementation of values and the corporate culture, which are updated regularly and on an ad hoc basis to reflect current law as well as market requirements. The aim is to manage and assess compliance risks as part of non-financial risks ("NFRs") by means, among other things, of key indicators (e.g. for financial sanctions) in line with the central requirements for operational risk management. Since the entry into force of the material requirements of the Supply Chain Act (*Lieferkettensorgfaltspflichtengesetz* – "LkSG") on 1 January 2023, the compliance organisation also acts as a central point for recording, monitoring and controlling compliance with the related requirements.

Within the scope of its duties as second line of defence, Compliance is responsible for and authorised to implement statutory or regulatory requirements and Executive Board decisions, to analyse individual cases/irregularities, to coordinate necessary measures and, where applicable, to initiate ad hoc measures to limit damage. In relation to all other areas of the group, the Compliance department performs its tasks autonomously and independently and is not subject to any instructions, in particular with regard to analysis (including evaluation of results), monitoring activities, defining and implementing rules and measures, and reporting. In order to perform its duties, Compliance has a complete and unrestricted right to information, inspection and access to all premises, documents, records, audio recordings and systems.

More intense monitoring of sanctions requirements resulting from the Russia-Ukraine war is being implemented, among other things, by means of a specially established task force headed by Compliance. In addition, to the extent necessary, internal audit and monitoring processes of the compliance organisation have been adapted to the changed risk situation. Compliance monitors legal and regulatory requirements on an ongoing basis and adapts to the changed risk situation in coordination with the affected functions of the first line of defence, as necessary.

The implementation of KfW's business activities relating to the COVID-19 pandemic in the context of the coronavirus special programmes generated an increase in the number of suspected cases in relevant compliance areas (money laundering/TF and criminal activities). Nevertheless, a sustained increase in the overall risk level is not discernible – even when taking into account the application and commitment volumes in the coronavirus special programme.

Internal Auditing

Internal Auditing is an instrument of the Executive Board. As an entity that works independently of KfW Group procedures, it audits and assesses all of KfW Group's processes and activities to identify the risks involved and reports directly to the Executive Board.

With a view to risk management processes, Internal Auditing performed an audit in the reporting year of the decentralised risk management processes and central aspects of risk management and risk control which were relevant group-wide. With regard to risk management, the focus areas of the audit included the application, operation and further development of the models used in risk management across all risk types, as well as KfW's combined risk assessment within the ICAAP. Additionally, risk-type-specific audits were performed on the management of operational risk, market price risk and liquidity risk. Audits of key second line functions were also part of the 2022 audit plan. The risk management projects that Internal Auditing assessed as material were supported by Internal Auditing, maintaining the latter's impartiality and avoiding any conflicts of interest.

Moreover, Internal Auditing continued to monitor the ongoing development of risk measurement procedures in 2022 by attending meetings of decision-making bodies (as a guest).

Internal Auditing also functions as KfW Group's internal auditing department. It is involved in subsidiaries' audit planning and, in addition to the audit results obtained independently in group-wide audits, it also incorporates the audit results of the subsidiaries' internal auditing departments in its group-wide internal audit reporting.

Forecast and opportunity report

General economic environment and development trends

KfW expects global real gross domestic product ("GDP") to grow by 2.4% year on year in 2023, after increasing by 3.4% in 2022, according to International Monetary Fund ("IMF") estimates. The expected growth rate of global real GDP in 2023 is below both that of the previous year and the average for 2012–2021. The below-average growth by historical comparison is forecast for both industrialised nations and developing countries and emerging economies (see table on gross domestic product at constant prices). KfW agrees with the IMF's assessment that the outlook for 2023 is determined largely by the Russian war on Ukraine, which has contributed to globally rising food and energy prices and generated an energy crisis in Europe. IMF also expects the 2023 rate of inflation in most economies worldwide to be above the 2012 to 2021 average and that the effects of the high inflation and monetary tightening will become apparent. Another factor is the impact of the COVID-19 pandemic and its after-effects.

Gross domestic product at constant prices

	2022 estimate in %	2023 forecast in %	2012–2021 average in %
Year-on-year change			
Global economy*	3.4	2.4	3.0
Industrialised countries*	2.7	0.8	1.6
Developing countries and emerging economies*	3.9	3.6	4.1

* Aggregation of annual GDP growth rates at each country's constant prices based on the shares of each country's GDP valued at purchasing power parity ("PPP") in the corresponding aggregate. Grouped into industrialised countries and emerging economies based on IMF classification. Average calculated as the geometric mean of annual growth rates.

According to the IMF, there is unusually high uncertainty about global growth, with the risk of further deterioration of the situation clearly predominant. The ongoing Russia-Ukraine war could continue to drive energy and food prices higher than expected and divide the international community in the long term, with a detrimental impact, for example, on trade and climate action. There is a risk that the monetary and fiscal policy responses to inflation are not sufficiently calibrated and will continue to unduly slow an already flagging global economy. Developing countries and emerging economies would suffer in particular. For example, energy and food shortages would be felt to a greater extent in 2023, particularly in those countries that are net importers of both. In addition, countries that are already heavily indebted, including industrialised countries, would suffer more than currently expected from the inevitable further rise in interest rates. Another debt crisis in numerous countries cannot be ruled out. There could also be a sharper slowdown in China's growth. There is still a high degree of uncertainty about the next stage of the COVID-19 pandemic. Easing COVID-19 restrictions could result in considerable slumps in growth due to sharp rises in confirmed cases. The conflict between China and the USA could intensify, which would push other western countries to more closely scrutinise their trade relations with China. At the same time, disagreements between the EU and the USA could increase and further hinder trade. More rapid exacerbation of the adverse effects of climate change could put further strain on the situation. The slowdown in the global economy as forecast by the IMF could consequently be more severe and affect virtually all regions of the world more than previously anticipated.

KfW expects **euro area** price-adjusted GDP to stagnate in 2023, after having grown by 3.5 percentage points in the previous year, which is above the 2012–2021 average. If this projection proves accurate, total economic output for 2023 will measure 2.3 percentage points above the pre-pandemic level of price-adjusted GDP, i.e. that of 2019 (see table on gross domestic product at constant prices, year-on-year change). In line with the European Commission, KfW assumes that there will be no disruptions to gas supply in the winters of 2022/2023 or 2023/2024 due, firstly,

to a price and policy-induced decline in demand and, secondly, to continued diversification of the gas supply. None of the demand-side components of GDP are likely to make a relevant contribution to price-adjusted GDP growth in 2023. This forecast is underpinned by the European Commission's assessment that growth in consumption demand stemming from private households is likely to be sharply limited by the large inflation-induced decline in real disposable income and net assets. Investment has also been impacted by rising costs, increased interest rates and weak demand. This is likely to be only partially mitigated by the continued implementation of European recovery and resilience plans. Due to the expected decline in global growth, the European Commission expects net exports to make a low positive contribution (0.1 percentage points) to eurozone growth. KfW estimates that, among the four largest eurozone countries, Germany and Italy will record the weakest real GDP growth due to their relatively important industrial sectors, while France and Spain, unlike the eurozone as a whole, can be expected to achieve slightly positive growth.

KfW expects price-adjusted GDP in **Germany** to decrease by 1.0% year on year in 2023. Price-adjusted GDP in 2023 is therefore expected to be slightly lower than in 2019, the year before the outbreak of the coronavirus pandemic (see table on gross domestic product at constant prices, year-on-year change). In view of the above forecasts for the global economy and assuming persistent strain from the Russia-Ukraine war, such as uncertainties relating to energy supply, rising energy and material costs, and eroding household purchasing power due to headline inflation, KfW assumes that of the value-added GDP components, the price-adjusted gross value added of the two consumer-related economic sectors retail, and transport and hospitality and other services will decrease. The price-adjusted gross value added of the construction and manufacturing sectors are also expected to contract in 2023. Among the expenditure components of GDP, KfW expects corporate investments, housing construction and private consumption expenditure to suffer price-adjusted decreases in 2023. The shortage of skilled workers will contribute to the average annual number of people in employment located in Germany remaining close to the 2022 figure in 2023, despite the negative rate of change of price-adjusted GDP.

Gross domestic product at constant prices, year-on-year change

	2022	2023 forecast	2012–2021 average	2023 forecast
	in %	in %	in %	2019 index = 100
Euro area	3.5	0.0	0.9	102.4
Germany	1.8	-1.0	1.0	99.6
USA	2.1	0.7	2.1	105.9

A further military escalation, such as the war expanding beyond Ukrainian territory, a gas shortage or restrictions reimposed on economic activities due to new coronavirus mutations, could cause a greater contraction in Germany's price-adjusted GDP than that predicted by KfW for 2023. There is a chance that price-adjusted GDP will contract less than KfW's forecast for 2023, or even that price-adjusted GDP will grow in 2023, if the substitution of Russian energy and raw materials turns out to proceed better than expected or if there is a widely accepted peace settlement for Ukraine. This would eliminate war-induced uncertainties and provide for additional investment and exports.

The European Central Bank ("ECB") has raised the deposit rate by a total of 250 basis points to 2.0% (year-end 2022) since July 2022. For the **euro area**, KfW expects the deposit rate of the European Central Bank ("ECB") to average 2.8% for the whole of 2023. The purchase programmes that had been running since 2015 and were expanded during the COVID-19 pandemic – the asset purchase programme ("APP") and the pandemic emergency purchase

programme ("PEPP") – were discontinued in the first half of 2022. The principal payments of the released assets of the APP and the PEPP will continue to be reinvested until the end of February 2023 and until the end of 2024, respectively. The ECB plans to reduce its balance sheet volume by EUR 15 billion per month from March 2023 onwards. In order to reconcile the very favourable refinancing conditions for banks created during the COVID-19 pandemic with the changed monetary policy environment, early repayment dates were offered for the targeted longer-term refinancing operations ("TLTRO III"), which will continue to run until June 2023. The ECB has also raised the TLTRO rate to be the average deposit rate between 22 November 2022 and the end date or early repayment date. The still elevated inflation rates are likely to decline over the course of 2023. According to the ECB's own forecast, its two percent target will not be reached until 2025, however. The slope of the yield curve (the spread between ten and two-year swap rates) is currently inverted due to the rapid key interest rate hikes. KfW expects the inversion to continue on average in 2023.

KfW also foresees interest rates in the USA rising higher in 2023, albeit only moderately, as inflation is slowly dropping, with the economy likely to cool off noticeably. KfW expects the yield curve (the spread between ten and two-year USD swap rates) to steepen sharply on average in 2023 but to continue to remain inverted.

New business projections

Overview

In the central control variable for its net assets, KfW Group projects new business volume of EUR 79.6 billion for 2023. In domestic promotion, this reflects a normalisation of new business development in the primary business and commitment growth in the business sectors KfW Capital, Export and project finance, and DEG. Promotion of EUR 11.4 billion is expected in the business sector KfW Development Bank, which would be in line with the 2022 target. These new business projections may be subject to change due to economic and political measures of the German Federal Government (e.g. execution of mandated transactions).

KfW is careful to avoid potential adverse effects and risks to society and the environment in its promotional activities, and where possible attempts to reduce or offset such effects via suitable measures (inside-out perspective). Furthermore, KfW considers environmental changes, such as to the climate and biodiversity, social transformation and governance standards with an impact on the credit rating of KfW clients, as well as the effects of various climate scenarios on KfW's business model and risk profile (outside-in perspective). We do not expect these considerations to have any impact on the new commitment volume projected for 2023.

Domestic business

After the exceptional period from 2020 to 2022, which was characterised by non-recurring effects, the business sector **Mittelstandsbank & Private Kunden (SME Bank & Private Clients)** is currently assuming a normalisation of new business development in its primary business for 2023 (target of EUR 35.1 billion, including a EUR 1 billion UBR [Ukraine, Belarus, Russia] special programme). This is expected to be buoyed in particular by the continued demand for housing-related financing and utilisation of long-term commercial financing loans (addressing the investment backlog).

The last few years were characterised by projects aimed at firmly establishing KfW's medium and long-term anchoring in important promotional areas as well as client contact via market standard interfaces. This will enable the business sector to continue the UBR support measures set up as a result of the Ukraine war in 2022 into 2023, if necessary. Moreover, the promotional lending portfolio will be aligned as comprehensively as possible with KfW's climate neutrality goals in a process lasting several years by gradually adapting promotional policies to the sectoral guidelines and new promotional initiatives. Another focus is on the reorganisation of Federal Funding for Efficient Buildings. To this end, a new programme, Climate-Friendly New Construction, will be introduced in 2023 for residential and non-residential buildings. The energy-efficient refurbishment of residential and non-residential buildings will continue in a modified form. There are also plans to integrate a social component directly into the Climate-Friendly New Construction programme.

and, in the foreseeable future, also into the promotional programme for refurbishment. Demand in the Renewable Energy – Standard programme is expected to increase significantly due to the shortage and sharp price increases of fossil fuels. Furthermore, the TUMO education centre in Berlin will continue its roll-out to other locations in Germany.

Financial year 2022 was largely characterised by non-recurring effects for the business sector **Individualfinanzierung & Öffentliche Kunden (Customised Finance & Public Clients)**. Large-volume transactions were mandated on behalf of the Federal Government in order to secure the energy supply in the face of the Ukraine war. As mandated transactions are not part of commitment projections, because of their unpredictable nature, they are not discussed further below.

The effects of the COVID-19 pandemic, the Ukraine war and the current inflation trends are expected to have a detrimental impact on economic growth in 2023. Demand for long-term loans, which are primarily used to finance investment projects, is likely to be dampened by high uncertainty, rising interest rates and high energy costs. However, the high price increases for capital goods are also driving the need for financing. The business sector anticipates a moderate rise in demand for loans in both municipal investments and customised finance of companies, banks and promotional institutions of the German federal states. Promotion with a total new business volume of EUR 9.8 billion is planned for 2023 (excluding any special programmes).

With regard to customised financing for companies, the impact of the COVID-19 pandemic on corporate willingness and capacity to take on debt for new investments cannot yet be definitively predicted. At the same time, potentially lower risk tolerance on the part of partner banks cannot be ruled out and could lead to greater demand for KfW's risk participation.

The demand for investment remains high from the perspective of the Municipal and Social Infrastructure segment, given the central role of municipalities and municipal enterprises in meeting the challenges posed by climate change, the need for digitalisation, the COVID-19 pandemic and the war in Ukraine. However, the strained budget and debt situation of some municipalities continues to restrict their investment opportunities. Individual financing with financing partners in Germany and Europe, as well as the general funding of promotional institutions of the federal states, will continue to be characterised by a sound funding situation at partner banks. The ECB's approach to fighting inflation and its ongoing tightening of monetary policy play an important role for global loans leasing/Europe loans and the funding of promotional institutions of the federal states, as well as for the customised financing of corporates.

The subsidiary **KfW Capital** projects a commitment volume of around EUR 1.4 billion in financial year 2023 (of which EUR 0.6 billion at its own risk). Germany's venture capital ("VC") market has experienced a considerable upward trend in recent years. Despite the COVID-19 pandemic, 2021 ended up being a record year. Never before were so many VC investments made in Germany. In 2022, however, the VC market was dealt a heavy blow by the Ukraine war, high inflation and rising interest rates. Despite this deteriorating environment, VC investment activity still proved to be rather robust in the first half of 2022, albeit lagging behind that of 2021, and greater than in previous years. The VC sentiment indicator initially took a downward turn in 2022, with business expectations deteriorating even further than the actual business situation. In the third quarter of 2022, however, business sentiment in the German VC market stabilised. The German VC market still needs strengthening to tackle the deficit in the amount of VC investment in future technologies by international comparison. KfW Capital will thus continue to play a key role in 2023 as a reliable VC market partner. The focus of KfW Capital's promotion and financing activities remains on making equity investments in VC and venture debt funds. Moreover, KfW Capital's role as central coordinator for the Future Fund will be expanded. The GFF EIF Growth Facility (EUR 0.4 billion in 2023), which was launched in 2022, will be supplemented by various other components, including the Deep Tech Climate Fund and the first module of so-called Separate Managed Accounts. Separate Managed Accounts is a Future Fund component designed to provide venture capital for selected target groups or technology areas and is conceived as a series of different modules to be developed gradually. Additionally, a climate action facility (EUR 0.1 billion) will be launched at the bank's own risk for the first time in 2023. Furthermore, as part of the Future Fund, KfW Capital will develop a market-based concept for financing key technologies.

Financial markets

The business sector **Financial markets** plans new investments of EUR 0.5 billion in its green bond portfolio for financial year 2023 in order to stabilise its volume within the target corridor of EUR 2.0 to 2.5 billion set from 2021 to the end of 2023, taking into account maturing bonds.

International business

Despite the globally deteriorating economic outlook, there are still regions with growth potential in Europe, as well as among developing countries and emerging markets relevant for the **Export and project finance** business sector. Economic stimulus programmes can also generate stimulus for financing demand (e.g. PPPs), particularly in the area of infrastructure investments and projects relating to the transformation to a climate-neutral economy. Health risks (COVID-19) and geopolitical risks remain relevant to the business sector Export and project finance, and are currently manifesting themselves primarily in lower country ratings. At the same time, protectionist efforts could have a noticeable adverse effect on world trade and thus on investment and financing opportunities. On the other hand, adapting supply chains in response to the COVID-19 pandemic and the war in Ukraine could create opportunities for lending. Although development remains fraught with uncertainties, from the current perspective, there is sufficient overall potential for German and European exporters and companies investing in transformation and digitalisation to boost their international competitiveness. Financing approaches can be derived from this for the business sector Export and project finance.

With the sectoral realignment based on transformation areas, the business sector is resuming its charted growth course and pursuing a significant increase in the volume of new commitments to a total of EUR 19.6 billion for 2023. Of this amount, EUR 18.1 billion is expected to be attributable to the primary business export and project finance, and EUR 1.5 billion to the commercial interest reference rate ("CIRR") business. After two years of COVID-19 and restricted travel, as well as the impact of the Ukraine war, the business sector is finding its way back to its long-term strategic growth path.

The business sector **KfW Development Bank** expects commitments to remain at a consistently high level for the next few years. KfW Development Bank will continue to support projects of the German Federal Government and international institutions for development policy and international cooperation in 2023. Issues such as support for partner countries in combating the COVID-19 pandemic and its socio-economic consequences, the effects of the war in Ukraine and the international energy transition, alleviating poverty and mitigating crises and causes of displacement are high on the political agenda. The German Federal Government and the European Commission are assuming responsibility in the area of international climate action and environmental protection and are involved in a large number of climate initiatives.

The Federal Government's budget funds for development cooperation in 2023 will likely be above the pre-pandemic level. The future priorities of the German Federal Ministry for Economic Cooperation and Development ("BMZ"), as KfW Development Bank's most important contracting authority, are derived from long-term core areas based on the UN's Sustainable Development Goals ("SDGs") as well as initiative areas that inspire action. KfW Development Bank faces greater political expectations as well as opportunities to boost its profile. The BMZ expects further scaling of climate finance, particularly for climate adaptation, greater mobilisation of private capital, contributions to loss and damage and sustainable finance. There is potential for KfW Development Bank to play a part in international energy/ climate/infrastructure partnerships.

The need to accelerate the energy transition in Germany has intensified collaboration with the Federal Ministry for Economic Affairs and Climate Action ("BMWK") (hydrogen portfolio creation). Within the context of the Multiannual Financial Framework for 2021–2027, the European Commission and the EU Member States have further developed the funding instruments for European development cooperation. In light of geographical expansion and the increase in funding for guarantees from the expanded European Fund for Sustainable Development Plus (EFSD+), cooperation with the EU will gain more significance in the coming years. The mobilisation of public and private funds for global infrastructure initiatives has become significantly more important at both the EU and G7 levels (European Commission Global Gateway projects and G7 Partnership for Global Infrastructure and Investment ("PGII")).

Against the backdrop of planned projects of the German Federal Government and international institutions, KfW Development Bank currently expects a new business volume of EUR 11.4 billion for 2023.

The subsidiary **DEG** is assigned to the DEG business sector of the same name. Economic growth in 2023 in the developing countries and emerging markets relevant to DEG's activities is expected to be determined by further recovery from the COVID-19 pandemic, the Ukraine war, high inflation and the associated monetary tightening measures as well as sovereign debt problems. The aim continues to be to provide support to existing customers as a reliable partner in times of crisis to secure contributions to local development (labour force, local income, and contributions to local communities). DEG aims to achieve net impact contributions through its financing, including through transformative support for its customers and investments in high-impact sectors. Specific promotional programmes, including in environmental and social management, climate and resource protection, and training, support the companies financed by DEG in implementing international good practices.

In view of the robust quality of its assets and its high portfolio diversification, DEG decided in spring 2022 to start growing its new business as early as 2023 – this was originally not planned until 2025. This means a new commitment volume of EUR 1.8 billion is already expected to be achieved in 2023. The growth is intended to enable larger tickets to be realised through hedging and by attracting bigger customers. New business in all three customer clusters, banking, infrastructure and energy, and industries and services, is already being focused more heavily on climate and development impacts. The aim is to boost performance through a stronger sectoral focus and a more global management in the cluster. Three strategically important cross-sectoral focal areas, Africa, German business, and equity investments, are also being systematically developed. The wholly owned subsidiary DEG Impulse gGmbH, which was spun off on 1 September 2022, boosts DEG's advisory and promotional business, which is an important element of its work, in order to secure quality customers by providing additional added value and to promote customer transformation to achieve a greater developmental and social impact, good governance and a lower carbon footprint.

Funding projections

KfW issues bonds to **fund** its promotional activities worldwide. It issues these in a large number of currencies and with differing maturities, thereby addressing a variety of target groups. Thanks to the explicit direct guarantee of the Federal Government, rating agencies have assigned KfW bonds a triple A rating, signifying top credit quality. KfW has achieved a stable position in the capital markets with its diversified long term-oriented funding strategy. The funding volume of around EUR 90 billion in financial year 2022 set a new record. This was due in particular to the exceptionally high demand for promotional loans, particularly from the domestic market. The product offering in the bond issuance business will continue to be focused on investors' needs. KfW's benchmark bonds in euros and US dollars will continue to constitute the largest share of total volume. Further diversification of the product range depends on the market.

Long-term borrowing via the capital markets of EUR 80 to 85 billion is planned for 2023. "Green Bonds – Made by KfW" will remain an important component of KfW's funding mix because of their strategic importance. KfW currently anticipates issuing liquid large-volume green bonds in various currencies with a total volume of at least EUR 10 billion in the coming year.

Since the end of October 2022, KfW has been able to draw on funds from the Economic Stabilisation Fund ("WSF") to refinance its transactions related to the energy industry and supply, mandated to it by the Federal Government in accordance with Article 2 (4) of the Law Concerning KfW (*KfW-Gesetz* – "KfW Law"), meaning that the WSF is able to grant funds to KfW beyond the refinancing of COVID-19 support programmes. The extent to which KfW will utilise the additional funding option via the WSF depends largely on the further development of the energy crisis.

Earnings projections

In the group **earnings projections** for 2023, KfW expects Consolidated profit of approximately EUR 950 million. This puts projected earnings at just below the strategic target level of EUR 1 billion.

Net interest income (before promotional expense) of EUR 2.5 to 2.6 billion is expected for 2023. Interest margins in the lending business are expected to be slightly down on prior-year projections. This development was offset by significantly higher income from the return on equity, resulting from a significant increase in interest rates which are expected to continue to rise in 2023. Opportunities and risks for Consolidated profit may arise, primarily with respect to the structure contribution, from market conditions deviating from projections in conjunction with KfW's positioning.

KfW projects Net commission income totalling EUR 0.6 billion for 2023, the same level as in the previous year. This includes remuneration for the implementation of promotional programmes in Germany on behalf of the Federal Government as well as remuneration based on the General Agreement on Financial Cooperation (*the legal basis between the Federal Government and KfW on the implementation of bilateral Financial Cooperation*) (*"FZ-Generalvertrag"*).

Administrative expense is likely to increase to EUR 1.6 billion in 2023. This includes the launch of company policy projects such as processing and development of promotion in domestic business, further development of the business sectors Export and project finance, and DEG, along with modernisation, digitalisation and regulation projects, as well as inflation-induced adjustments.

Overall, the operating result before valuation is expected to be higher than projections for the prior-year.

At EUR 0.5 billion, KfW expects the standard risk costs for 2023 to be at the level of the risk provisions projected for 2022.

For 2023, Net income of EUR 0.2 billion and Net other operating income of EUR 0.1 billion are expected for operational level equity investments (included in Net gains/losses from other financial instruments at fair value and the Net gains/losses from investments accounted for using the equity method).

In this regard, the risk provisions for the lending business and the valuation result depend on the further development of the macroeconomic impact of the current geopolitical situation, as well as any further effects resulting from the COVID-19 pandemic. The continued uncertain situation may lead to significant positive or negative deviations in the projected result.

KfW expects promotional expense of EUR 0.4 billion in 2023.

Overall conclusion

In light of the economic environment and expected demand, KfW projects new business volume of EUR 79.6 billion and consolidated profit of around EUR 1 billion for 2023.

The various crises and their effects pose considerable risks to German and global economic output in 2023, which may affect the achievement of KfW's objectives set for financial year 2023. A forecast of the overall effects on KfW's net assets, financial and earnings position is only possible to a very limited extent at present given the uncertain political and economic development. KfW will continue to closely monitor the development of the war on Ukraine and its effects on KfW's business.

Notes to the KfW annual financial statements prepared in accordance with the German Commercial Code

Overall activities of KfW

	2022	2021
Financial statements	EUR in millions	EUR in millions
Volume of business	718,361	667,398
Total assets	596,985	562,355
Bonds and notes issued	455,107	443,617
Own funds ¹⁾	30,841	29,816
Net interest income (before promotional expense)	1,923	2,068
Net commission income (before promotional expense)	475	493
Administrative expense (before promotional expense)	1,209	1,130
Promotional expense	305	188
Profit for the year	1,026	1,784

¹⁾ Including Section 340g HGB

Development of KfW

KfW's earnings in financial year 2022 declined year on year. Net interest income before promotional expense was below that of the previous year. Net commission income before promotional expense was lower than in the previous year as a result of a change in methods for recognition of interest-like loan fees. The cost/income ratio before promotional expense increased to 50.4% (2021: 44.1%) due to the rise in administrative expense and a decline in income. KfW strengthened its capital base due to its earnings position, with a profit for the year of EUR 1,026 million.

KfW's total assets increased by EUR 34.6 billion to EUR 597.0 billion in financial year 2022, in particular due to the mandated transactions to secure the energy supply, with business volume increasing from EUR 667.4 billion to EUR 718.4 billion.

KfW's promotional business volume amounted to EUR 153.2 billion, lower than the Group's promotional business volume of EUR 166.9 billion. The difference relates to the international business and results from DEG and Export and project finance of IPEX-Bank GmbH.

Development of earnings position

KfW's operating result before valuation and promotional expense was EUR 1,243 million, which was lower (by EUR 149 million) than the previous year's figure of EUR 1,392 million.

**Reconciliation of internal earnings position before promotional expense
to external earnings position after promotional expense for financial year 2022**

Earnings position	EUR in millions	Reconciliation EUR in millions	EUR in millions	German Commercial Code income statement form
Net interest income (before promotional expense)	1,923	-267	1,656	Total of interest income and current income less interest expense
Net commission income (before promotional expense)	475	-12	463	Commission income less Commission expense
Administrative expense (before promotional expense)	1,209	16	1,225	Total general administrative expense and depreciation, amortisation and impairments on property, plant and equipment and intangible assets
Other operating income and expenses (before promotional expense)	55	-10	45	Other operating income less Other operating expense
Operating result (before risk provisions/valuation/ promotional expense)	1,243	-305	938	Subtotal of Interest income, Current income, Commission income, Net other operating income less Interest expense, Commission expense, General administrative expense, Depreciation, amortisation and impairments on property, plant and equipment and intangible assets, Other operating expense
Valuation result	-2	1	2	Impairments of and valuation allowances on equity investments, shares in affiliated companies and securities held as fixed assets
Risk provisions for lending business	96	-1	95	Income from the reversal of impairment losses on receivables and certain securities and the reversal of provisions for loan losses
Net result from transfer agreements	-1	0	1	Cost of loss absorption
Profit/loss from operating activities (before promotional expense)	1,336	-305	1,031	Profit/loss from operating activities
Promotional expense	305	-305	0	-
Taxes on income	3	0	3	Taxes on income
Other taxes	3	0	3	Other taxes
Profit for the year	1,026	0	1,026	Profit for the year

**Reconciliation of internal earnings position before promotional expense
to external earnings position after promotional expense for financial year 2021**

Earnings position	EUR in millions	Reconciliation EUR in millions	EUR in millions	German Commercial Code income statement form
Net interest income (before promotional expense)	2,068	-144	1,923	Total of interest income and current income less interest expense
Net commission income (before promotional expense)	493	-12	482	Commission income less Commission expense
Administrative expense (before promotional expense)	1,130	14	1,144	Total general administrative expense and depreciation, amortisation and impairments on property, plant and equipment and intangible assets
Other operating income and expenses (before promotional expense)	-39	-18	-57	Other operating income less Other operating expense
Operating result (before risk provisions/valuation/ promotional expense)	1,392	-188	1,204	Subtotal of Interest income, Current income, Commission income, Net other operating income less Interest expense, Commission expense, General administrative expense, General depreciation, amortisation and impairments on property, plant and equipment and intangible assets, Other operating expense
Valuation result	32	-1	31	Income from reversals of write- downs of equity investments, shares in affiliated companies and securities held as fixed assets
Risk provisions for lending business	113	1	113	Income from the reversal of impairment losses on receivables and certain securities and the reversal of provisions for loan losses
Net result from transfer agreements	41	0	41	Income from profit pooling, profit and loss transfer and partial profit transfer agreements
Reversal of the fund for general banking risks	400	0	400	Reversal of the fund for general banking risks
Profit/loss from operating activities (before promotional expense)	1,978	-188	1,790	Profit/loss from operating activities
Promotional expense	188	-188	0	-
Taxes on income	4	0	4	Taxes on income
Other taxes	2	0	2	Other taxes
Profit for the year	1,784	0	1,784	Profit for the year

At EUR 1,923 million, **Net interest income (before promotional expense)** was down on the previous year (EUR 2,068 million) by EUR 145 million. The decrease was due to higher interest income in the lending and money market business being more than offset by a rise in interest expense.

Net commission income (before promotional expense) of EUR 475 million was EUR 19 million below the previous year's level of EUR 493 million. The decline was due to a change in methods in the collection of interest-like loan fees now amortised in interest income. The impact on financial year 2022 amounted to EUR 90 million. In addition, commission income from the KfW Special Programme for coronavirus aid fell to EUR 42 million (2021: EUR 61 million), with commission income from the "Baukindergeld" scheme also falling to EUR 27 million (2021: EUR 48 million). In contrast, KfW recorded a rise in commission income of EUR 17 million from remuneration from the Federal Government for the Energy-efficient Construction and Refurbishment Programme and its successor, the Federal Funding for Efficient Buildings, from a total of EUR 119 million to EUR 136 million. The programmes for charging stations for electric cars also recorded an increase of EUR 23 million, from EUR 29 million to EUR 52 million. Commission income generated by the administration of German Financial Cooperation ("FC") in the business sector Promotion of developing countries and emerging economies increased to EUR 231 million (2021: EUR 229 million). The remuneration from the Federal Government was offset by related administrative expenses.

Administrative expense (before promotional expense) increased by EUR 79 million to EUR 1,209 million. The increase was mainly due to higher expenses for wages and salaries.

Other operating income and expense (before promotional expense) amounted to EUR 55 million (2021: EUR 39 million expense) due mainly to effects from the change in the interest rate used to measure pensions in accordance with the German Commercial Code (EUR +100 million), which were partially offset by negative valuation effects in the foreign currency item.

The **valuation result** of EUR –2 million (2021: EUR 32 million income) was essentially balanced in the financial year.

Risk provisions for lending business generated net income of EUR 96 million (2021: EUR 113 million net income). Net reversals of specific value allowances, particularly in the business sector Export and project finance, as well as income from the successful recovery of loans previously written off, were offset only by a minor net recognition of general valuation allowances. There was an increase in specific valuation allowances and specific provisions for the lending business from EUR 503 million to EUR 765 million. As of financial year 2022, this also includes specific valuation allowances for interest receivables at risk of default amounting to EUR 329 million. There was a decline in the general valuation allowances and general provisions for the lending business from EUR 532 million to EUR 511 million. Non-performing loans in the amount of EUR 61 million in connection with specific valuation allowances were written off in financial year 2022 (2021: EUR 121 million).

KfW's domestic **promotional expense**, which has a negative impact on its earnings position, amounted to EUR 305 million in 2022, compared to EUR 188 million in 2021. The key component of KfW's promotional expense are interest rate reductions of EUR 267 million granted during the first fixed interest rate period in addition to passing on its favourable funding conditions. Moreover, promotional expenses reported in net commission income and administrative expense were incurred in the amount of EUR 28 million (2021: EUR 26 million). Among other things, this spending was aimed at the sale of KfW's promotional products. Other operating expenses include EUR 10 million (2021: EUR 18 million) in promotional grants awarded as a supplement to the lending business as a promotional expense.

The **net result from transfer agreements** includes KfW Capital GmbH's loss transfer in the amount of just EUR 1 million.

Financial year 2022 closed with a **profit for the period** of EUR 1,026 million (2021: EUR 1,784 million), which was fully allocated to retained earnings in accordance with Article 10 (3) KfW Law.

Development of net assets

KfW saw both its total assets and its volume of business increase in financial year 2022.

Volume of receivables

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Loans and advances to banks	389,076	334,064
Loans and advances to customers	135,414	110,489
Loans held in trust	10,271	10,561
Contingent liabilities from financial guarantees	704	711
Irrevocable loan commitments	120,671	104,332
Total	656,137	560,157

The volume of receivables (loans and advances to banks and customers, including irrevocable loan commitments, loans held in trust and guarantees) increased from EUR 560.2 billion to EUR 656.1 billion. The increase in loans and advances to banks of EUR 55.0 billion was due to the change in deposits at Deutsche Bundesbank from the minimum reserve to overnight deposits.

The change in loans and advances to customers from the previous year was mainly due to loans in connection with the energy supply amounting to EUR 22.4 billion.

The volume of loans held in trust, which primarily comprise loans to promote developing countries financed by budget funds provided by the Federal Republic of Germany, declined to EUR 10.3 billion in 2022 (2021: EUR 10.6 billion).

Contingent liabilities from financial guarantees remained unchanged at EUR 0.7 billion, while irrevocable loan commitments rose by EUR 16.4 billion, from EUR 104.3 billion to EUR 120.7 billion. The increase in irrevocable loan commitments was due to new commitments in aid loans to the energy industry in the amount of EUR 20.0 billion.

Total bonds and other fixed-income securities rose by EUR 0.5 billion to EUR 40.4 billion (2021: EUR 39.9 billion). Holdings of repurchased own issues remained unchanged at EUR 3.9 billion (2021 EUR 3.9 billion). This was equivalent to 1.0% of bonds issued.

At a total amount of EUR 36.6 billion, holdings of securities of other issuers, which make up 90.4% of the total holdings of all bonds and other fixed-income securities, exceeded the previous year's level of EUR 36.0 billion by EUR 0.6 billion. Of the securities from other issuers, 75.9% is eligible as collateral for funding operations with the European Central Bank (ECB).

In addition to the Treasury securities portfolios, KfW holds asset backed securities (ABS) with a carrying amount of EUR 6.0 billion, (previous year: EUR 6.1 billion), related to its securitisation and SME finance activities. Potential risks are sufficiently addressed by appropriate risk provisioning.

The value of shares in affiliated companies amounted to EUR 4.0 billion (2021: EUR 3.8 billion). KfW's assets held in trust rose by EUR 0.3 billion to EUR 18.6 billion (2021: EUR 18.3 billion).

Development of financial position

KfW raised EUR 89.4 billion in the capital markets to fund its business activities in 2022 (2021: EUR 82.6 billion). A total of 206 bonds were issued in 13 currencies. The 20 Green Bond transactions (including 7 top-ups) with a volume of EUR 10.6 billion made a 11.8% contribution to funding.

Borrowings increased by EUR 37.3 billion to EUR 540.1 billion.

Borrowings

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Federal Republic of Germany		
– ERP Special Fund	283	138
– Federal budget	7,887	4,343
– Economic Stabilisation Fund (WSF)	52,807	35,400
	60,976	39,881
Other lenders	4,537	4,006
Liabilities to customers	65,514	43,886
Liabilities to banks	19,463	15,271
Long-term debt securities ¹⁾	414,507	394,012
Commercial papers ¹⁾	39,007	48,066
Accrued interest and interest payable	1,593	1,539
Bonds and notes issued	455,107	443,617
Total	540,083	502,774

¹⁾ Breakdown of bonds issued and previous year's amounts adjusted.

Bonds issued increased by EUR 11.5 billion year on year and totalled EUR 455.1 billion as of 31 December 2022. New issuances and maturities as well as fluctuations in foreign exchange rates, particularly of the US dollar, had an impact on portfolio development.

Bonds issued accounted for 84.3% of borrowed funds, which was less than the previous year's level (88.2%). Proportionally, they therefore remain KfW's largest source of funding. The share of bonds denominated in euros was 65% in 2022 (2021: 55%), those denominated in US dollars amounted to 19% (2021: 26%). The share of bonds denominated in pounds sterling was 9% (2021: 8%).

As of 31 December 2022, KfW's funds raised via the Economic Stabilisation Fund ("WSF") by means of promissory note loans increased by EUR 17.4 billion, to EUR 52.8 billion. WSF funding of EUR 22.4 billion was used to finance programmes to ensure the liquidity of energy sector companies and the necessary infrastructure and EUR 30.4 billion to fund the coronavirus special programme.

The share of funds from banks and customers (excluding federal budget funds) increased slightly year on year to 4.4% (2021: 3.8%). This includes cash collateral received primarily to reduce counterparty risk from the derivatives business in the amount of EUR 11.6 billion (2021: EUR 8.8 billion).

KfW's **own funds** amounted to EUR 30.8 billion as of 31 December 2022, up 3.4% compared to the previous year. This increase was exclusively due to the net profit of EUR 1,026 million allocated to retained earnings. The fund for general banking risks remained unchanged from the previous year at EUR 0.2 billion.

Own funds

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Subscribed capital	3,750	3,750
Uncalled contributions outstanding	–450	–450
Capital reserve	8,447	8,447
Reserve from the ERP Special Fund	1,191	1,191
Retained earnings		
a) Statutory reserve under Article 10 (2) KfW Law	1,875	1,875
b) Special reserve under Article 10 (3) KfW Law	15,781	14,755
c) Special reserve under Section 17 (4) D-Mark Balance Sheet Act ¹⁾	48	48
Fund for general banking risks under Section 340g HGB	200	200
Total	30,841	29,816

¹⁾ To be adjusted by the special loss account shown on the assets side in accordance with Section 17 (4) of the D-Mark Balance Sheet Act (EUR 26 million).

Declaration of compliance

The Executive Board and Board of Supervisory Directors of KfW have resolved to recognise the principles of the Federal Public Corporate Governance Code (*Public Corporate Governance Kodex des Bundes – “PCGK”*) and apply them at KfW. The Corporate Governance Report of KfW contains the declaration of compliance with the recommendations of the PCGK.

Non-financial statements

Information on the “Combined non-financial statements of KfW as the parent company and of KfW Group” can be found in the separate Global Reporting Initiative (GRI) standard report of the 2022 Sustainability report. This can be accessed online at:

www.kfw.de/Sustainability



Consolidated financial statements

<u>Consolidated statement of comprehensive income</u>	67
<u>Consolidated statement of financial position</u>	68
<u>Consolidated statement of changes in equity</u>	69
<u>Consolidated statement of cash flows</u>	70
<u>Notes</u>	72
<u>Accounting policies</u>	73
(1) <u>Basis of presentation</u>	73
(2) <u>Accounting standards that are new, amended or to be adopted for the first time</u>	73
(3) <u>Changes to material accounting policies</u>	75
(4) <u>Judgements and accounting estimates</u>	76
(5) <u>Group of consolidated companies</u>	78
(6) <u>Basis of consolidation</u>	78
(7) <u>Financial instruments</u>	78
(8) <u>Derivatives and hedging relationships</u>	88
(9) <u>Offsetting of financial instruments</u>	90
(10) <u>Foreign currency translation</u>	91
(11) <u>Revenue from contracts with customers</u>	91
(12) <u>Promotional lending business at KfW</u>	92
(13) <u>Non-current assets held for sale</u>	92
(14) <u>Repurchase agreements and securities lending</u>	92
(15) <u>Government grants</u>	93
(16) <u>Property, plant and equipment</u>	93
(17) <u>Leases</u>	93
(18) <u>Intangible assets</u>	94
(19) <u>Risk provisions</u>	94
(20) <u>Income tax assets and liabilities</u>	95
(21) <u>Equity</u>	96
(22) <u>Trust activities</u>	96
<u>Notes to the statement of comprehensive income</u>	97
(23) <u>Net interest income</u>	97
(24) <u>Net gains/losses from risk provisions</u>	99
(25) <u>Net commission income</u>	99
(26) <u>Net gains/losses from hedge accounting</u>	101
(27) <u>Net gains/losses from other financial instruments at fair value through profit or loss</u>	104
(28) <u>Net gains/losses from disposal of financial assets at amortised cost</u>	105
(29) <u>Net gains/losses from investments accounted for using the equity method</u>	105
(30) <u>Administrative expense</u>	106
(31) <u>Net other operating income or loss</u>	106
(32) <u>Taxes on income</u>	107
<u>Segment reporting</u>	108
(33) <u>Segment reporting by business sector</u>	108
(34) <u>Segment reporting by region</u>	112

<u>Notes to the statement of financial position</u>	113
(35) <u>Cash reserves</u>	113
(36) <u>Financial assets at amortised cost</u>	113
(37) <u>Gross carrying amounts</u>	115
(38) <u>Risk provisions</u>	119
(39) <u>Financial assets at fair value</u>	121
(40) <u>Value adjustments from macro fair value hedge accounting</u>	121
(41) <u>Derivatives designated for hedge accounting</u>	121
(42) <u>Investments accounted for using the equity method</u>	122
(43) <u>Non-current assets held for sale</u>	122
(44) <u>Property, plant and equipment</u>	123
(45) <u>Intangible assets</u>	124
(46) <u>Income tax assets</u>	125
(47) <u>Other assets</u>	125
(48) <u>Financial liabilities at amortised cost</u>	126
(49) <u>Financial liabilities at fair value</u>	127
(50) <u>Value adjustments from macro fair value hedge accounting</u>	128
(51) <u>Derivatives designated for hedge accounting</u>	128
(52) <u>Risk provisions</u>	128
(53) <u>Income tax liabilities</u>	132
(54) <u>Other liabilities</u>	132
(55) <u>Equity</u>	133
<u>Notes to financial instruments</u>	135
(56) <u>Gains and losses from financial instruments by measurement category</u>	135
(57) <u>Disclosures on fair value</u>	136
(58) <u>Disclosures on micro fair value hedge accounting</u>	148
(59) <u>Disclosures on macro fair value hedge accounting</u>	153
(60) <u>Additional disclosures on derivatives</u>	155
(61) <u>Management of the transition to new reference rates</u>	157
(62) <u>Additional disclosures on financial liabilities at fair value</u>	158
(63) <u>Contractual payment obligations arising from financial instruments</u>	159
(64) <u>Disclosures on repurchase agreements</u>	161
(65) <u>Disclosure on offsetting financial instruments</u>	162
<u>Other notes</u>	164
(66) <u>Off-balance sheet transactions</u>	164
(67) <u>Trust activities and administered loans</u>	164
(68) <u>Leasing transactions as lessee</u>	165
(69) <u>Average number of employees during the financial year</u>	166
(70) <u>Remuneration report</u>	166
(71) <u>Related party disclosures</u>	173
(72) <u>Auditor's fees</u>	175
(73) <u>Disclosures on unconsolidated structured entities</u>	175
(74) <u>Disclosures on shareholdings</u>	177
(75) <u>Events after the balance sheet date</u>	183
<u>Attestations</u>	186
<u>Responsibility statement</u>	187
<u>Independent auditor's report</u>	188

Consolidated statement of comprehensive income

Income statement

	Notes	2022 EUR in millions	2021 EUR in millions
Interest income from the effective interest method		3,065	615
Other interest income		721	446
Interest income, total	(23)	3,786	1,061
Interest expense	(23)	1,638	-1,325
Net interest income¹⁾		2,148	2,386
Net gains/losses from risk provisions	(7), (24)	-124	196
Net interest income after risk provisions		2,024	2,582
Commission income	(11), (25)	649	647
Commission expense	(25)	32	24
Net commission income		617	623
Net gains/losses from hedge accounting	(8), (26), (58), (59)	150	-110
Net gains/losses from other financial instruments at fair value through profit or loss	(27)	64	767
Net gains/losses from disposal of financial assets at amortised cost	(28)	-1	-4
Net gains/losses from investments accounted for using the equity method	(6), (29)	43	14
Administrative expense	(30)	1,525	1,466
Net other operating income or loss	(31)	-8	-53
Profit/loss from operating activities		1,365	2,353
Taxes on income	(20), (32)	-1	137
Consolidated profit		1,365	2,215

¹⁾ Refer to Note 23 for a gross presentation of Interest income and Interest expense related to reporting of negative interest income and positive interest expense.

Consolidated statement of comprehensive income

	2022 EUR in millions	2021 EUR in millions
Consolidated profit	1,365	2,215
Other comprehensive income	1,007	195
Change in own credit risk of liabilities designated at fair value through profit or loss	137	23
Defined benefit pension obligations (before taxes)	922	182
Deferred taxes on defined benefit pension obligations	-53	-10
Consolidated comprehensive income	2,372	2,410

Other comprehensive income comprises amounts recognised directly in equity under Revaluation reserves. These amounts include income and expense from the change in own credit risk of liabilities designated at fair value through profit or loss, changes in actuarial gains and losses for defined benefit pension obligations, and changes in deferred taxes reported depending on the underlying transaction.

Consolidated statement of financial position

Assets

	Notes	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Cash reserves	(35)	51,848	42,439
Financial assets at amortised cost	(7), (12), (36), (37), (38), (58), (59)	500,265	473,221
Financial assets at fair value	(7), (39), (60)	16,624	19,085
Value adjustments from macro fair value hedge accounting	(8), (40), (60)	-25,859	4,609
Derivatives designated for hedge accounting	(8), (41), (58), (59), (60)	9,005	8,478
Investments accounted for using the equity method	(6), (42)	642	597
Non-current assets held for sale	(13), (43)	64	119
Property, plant and equipment	(16), (44)	929	971
Intangible assets	(18), (45)	100	144
Income tax assets	(20), (46)	239	236 ¹⁾
Other assets	(11), (47)	771	794
Total		554,628	550,692¹⁾

¹⁾ Adjustments to corresponding prior-year figures as detailed under "Changes to significant accounting policies and estimates" in the Notes.

Liabilities and equity

	Notes	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Financial liabilities at amortised cost	(7), (48), (58), (59)	492,579	496,385
Financial liabilities at fair value	(7), (49), (60), (62)	11,401	11,484
Value adjustments from macro fair value hedge accounting	(8), (50), (60)	18	37
Derivatives designated for hedge accounting	(8), (51), (58), (59), (60)	10,819	4,554
Provisions	(7), (19), (52)	2,672	3,576
Income tax liabilities	(20), (53)	61	67 ¹⁾
Other liabilities	(11), (54)	501	382
Equity	(21), (55)	36,579	34,207
Paid-in subscribed capital		3,300	3,300
Capital reserve		8,447	8,447
Reserve from the ERP Special Fund		1,191	1,191
Retained earnings		23,391	22,026
Fund for general banking risks		200	200
Revaluation reserves	(7), (21), (55)	50	-957
Total		554,628	550,692¹⁾

¹⁾ Adjustments to corresponding prior-year figures as detailed under "Changes to significant accounting policies and estimates" in the Notes.

Consolidated statement of changes in equity

Consolidated statement of changes in equity

	Subscribed capital	Capital reserve	Reserve from the ERP Special Fund	Retained earnings	Fund for general banking risks	Revaluation reserves	Total
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
As of 1 Jan. 2021	3,300	8,447	1,191	19,411	600	-1,151	31,797
Consolidated comprehensive income	0	0	0	2,215	0	195	2,410
Consolidated profit	0	0	0	2,215	0	0	2,215
Other comprehensive income	0	0	0	0	0	195	195
Reclassifications within Equity	0	0	0	400	-400	0	0
As of 31 Dec. 2021	3,300	8,447	1,191	22,026	200	-957	34,207
Consolidated comprehensive income	0	0	0	1,365	0	1,007	2,372
Consolidated profit	0	0	0	1,365	0	0	1,365
Other comprehensive income	0	0	0	0	0	1,007	1,007
Reclassifications within Equity	0	0	0	0	0	0	0
As of 31 Dec. 2022	3,300	8,447	1,191	23,391	200	50	36,579

The reclassifications within Equity in the previous year are due to the partial reversal of EUR 400 million from the fund for general banking risks recorded in KfW's financial statements in accordance with the provisions of the German Commercial Code (HGB), which result in a corresponding increase in Retained earnings.

The difference to the consolidated comprehensive income is allocated to Other retained earnings or – if recognised directly in equity – to Revaluation reserves.

Note 55 provides details on the consolidated statement of changes in equity and also discloses the development of revaluation reserves as of financial year 2022.

Consolidated statement of cash flows

	2022	2021
	EUR in millions	EUR in millions
Consolidated profit	1,365	2,215
Non-cash items included in consolidated profit and reconciliation to cash flow from operating activities:		
Depreciation, amortisation, impairment and reversal of impairment losses (assets) and changes in risk provisions for lending business	399	42
Changes in provisions for pensions and similar commitments and Other provisions	161	359
Other non-cash expenses and income	-47	88
Profit/loss from the disposal of assets	0	0
Other adjustments	-2,102	-2,337
Subtotal	-224	368
Changes in assets and liabilities from operating activities after adjustment for non-cash items:		
Financial assets at amortised cost	-27,304	-12,555
Financial assets at fair value	-431	-955
Other assets relating to operating activities	33,277	7,497 ¹⁾
Financial liabilities at amortised cost	-3,806	12,519
Financial liabilities at fair value	-1,818	-2,794
Other liabilities relating to operating activities	7,697	-8,071 ¹⁾
Interest and dividends received	3,786	1,061
Interest paid	-1,638	1,325
Income tax paid	-46	-49
Cash flow from operating activities	-9,492	-1,655
Property, plant and equipment/Intangible assets:		
Cash proceeds from disposals	10	3
Cash payments for acquisitions	-41	-72
Securities and investments (equity investments):		
Cash proceeds from disposals/Cash payments for acquisitions	-53	-15
Cash flow from investing activities	-83	-84
Cash proceeds from/Cash payments for capital increases/decreases	0	0
Changes from other financing activities	0	0
Cash flow from financing activities	0	0
Cash and cash equivalents as of the end of the previous period	42,439	44,178
Cash flow from operating activities	9,492	-1,655
Cash flow from investing activities	-83	-84
Cash flow from financing activities	0	0
Cash and cash equivalents as of the end of the period	51,848	42,439

¹⁾ Adjustments to prior-year figures as detailed under "Changes to significant accounting policies and estimates" in the Notes.

The balance of Cash and cash equivalents reported in the statement of cash flows in accordance with IAS 7 is identical to the statement of financial position item Cash reserves and thus comprises cash on hand and balances with central banks.

The statement of cash flows shows the changes in Cash and cash equivalents in the financial year classified as the Cash flows from operating activities, investing activities and financing activities. The item Other adjustments largely comprises the adjustment for net interest income in the amount of EUR –2,148 million (2021: EUR –2,386 million). The cash payments for the repayment portion of lease liabilities included in Cash flow from operating activities amounted to EUR 13 million in financial year 2022 (2021: EUR 13 million). The cash payments for the interest portion of lease liabilities are reported under Interest paid.

For more information on KfW Group's liquidity risk management, see the section on liquidity risk in the combined management report.



Notes

Accounting policies

(1) Basis of presentation

As the parent company of KfW Group, KfW (hereinafter “KfW”) is the promotional bank of the Federal Republic of Germany and was founded in 1948 as a public law institution based in Frankfurt am Main (Palmengartenstrasse 5–9, 60325 Frankfurt am Main, Germany). KfW promotes sustainable improvement of economic, environmental and social conditions around the world, with an emphasis on the German economy.

The Executive Board of KfW is responsible for the preparation of the consolidated financial statements and the combined management report. After the recommendation of the Audit Committee, the consolidated financial statements and the combined management report are submitted to KfW’s Board of Supervisory Directors for approval.

As of the reporting date, KfW Group comprises KfW and six subsidiaries that are fully consolidated. One joint venture and three associated companies are accounted for using the equity method.

Pursuant to Section 315e (1) of the German Commercial Code (*Handelsgesetzbuch – “HGB”*), the consolidated financial statements as of 31 December 2022 have been prepared in accordance with the International Financial Reporting Standards (“IFRS”), as adopted by the European Union (“EU”), and with the interpretations set out by the IFRS Interpretations Committee (“IFRS IC”), as mandatory consolidated accounts in accordance with Article 4 of Regulation (EC) No. 1606/2002 (“IAS Regulation”) of the European Parliament and of the Council of 19 July 2002, as well as further regulations on the adoption of certain international accounting standards. The standards and interpretations that apply are those that have been published and endorsed by the European Union as of the reporting date.

The supplementary provisions of the German Commercial Code that also apply to IFRS consolidated financial statements have been taken into account. The combined management report prepared in accordance with Section 315 of the German Commercial Code includes the risk report with risk-oriented information on financial instruments as set out in IFRS 7, as well as information on capital and capital management as set out in IAS 1.134.

The consolidated financial statements were prepared in accordance with accounting policies that are consistent across KfW Group and are prepared on a going concern basis. The companies included in the consolidated financial statements have prepared their annual financial statements as of 31 December 2022, except for some associated companies accounted for using the equity method, where financial statements as of 30 September 2022 were used. Material events for the latter companies as of the reporting date were also taken into account.

The accounting policies in the consolidated financial statements were applied consistently with the exception of the items listed in Note 3.

The reporting currency is the euro. Unless otherwise specified, all amounts are stated in millions of euros (EUR in millions).

(2) Accounting standards that are new, amended or to be adopted for the first time

A. Impact of new or amended IFRS/IFRIC interpretations adopted for the first time in financial year 2022

The update to IFRS 3 mainly relates to the reference to the revised conceptual framework. In addition, IFRS 3 was amended to require an acquirer to apply IAS 37 or IFRIC 21 instead of the conceptual framework to identify the obligations it has assumed that are within the scope of IAS 37 or IFRIC 21. Furthermore, IFRS 3 was amended to explicitly prohibit the recognition of acquired contingent assets.

The amendment to IAS 37 clarified that in determining an onerous contract, in addition to incremental costs, directly related costs are also to be taken into account.

The amendment to IAS 16 clarified that in future proceeds generated from the sale of any items produced while bringing an item of property, plant and equipment ("PPE") into use must be directly recognised in profit or loss. Such proceeds can no longer be deducted from the cost of the PPE item.

Amendments were made to IFRS 1, IAS 41, IFRS 9 and IFRS 16 in May 2020 as part of the Annual Improvements to IFRS (2018–2020 Cycle). The aim of the Annual Improvements is to improve the quality of the standards by clarifying requirements or wording.

The amendments and improvements described were endorsed into European law in June 2021 and are effective for financial years beginning on or after 1 January 2022. They do not have any impact on KfW Group's net assets, financial and earnings position.

B. Impact of new or amended IFRS/IFRIC interpretations to be adopted in the future that were endorsed by the EU into European law before the reporting date

Standard concerned	Mandatory application for financial years from	Description
IAS 1	1 Jan. 2023	The February 2021 amendments to IAS 1 and IFRS Practice Statement 2 specify the extent to which accounting policy information must be disclosed in IFRS financial statements (notes). This shifts the focus to company-specific information instead of standardised information and primarily affects the disclosure requirements set out in IAS 1.117. In the future, entities will be required to disclose material accounting policy information rather than their significant accounting policies; immaterial transactions, other events or conditions need not be disclosed. In applying the "materiality" concept, in addition to the absolute amount involved, the type of transaction, of other events, and conditions must be considered. The amendments also explain when an accounting policy is to be considered material.
IAS 8	1 Jan. 2023	The changes to IAS 8 focus solely on accounting estimates and are intended to provide guidance on how to distinguish between accounting policies and accounting estimates. The amendment for the first time includes a definition of accounting estimate. Moreover, it clarifies that accounting estimates based on <u>changes and new developments or circumstances do not constitute errors requiring rectification.</u>
IAS 12	1 Jan. 2023	The amendment to IAS 12 limits the scope of the initial recognition exemption, according to which deferred tax assets or liabilities are not to be recognised at the time the asset or liability is acquired. In the future, deferred taxes are to be recognised for transactions that give rise to equal taxable and <u>deductible temporary differences. The amendment is particularly relevant for IFRS 16 applications.</u>
IFRS 17	1 Jan. 2023	IFRS 17 "Insurance Contracts" was issued in May 2017 with the intention of replacing IFRS 4 "Insurance Contracts" in the future. It sets out principles for the recognition, measurement, presentation and disclosure of insurance contracts within the scope of the standard. The IASB adopted amendments and clarifications to IFRS 17 at the end of June 2020, thereby delaying the date of mandatory first-time application of IFRS 17 by two years, to 1 January 2023. The amendments of December 2021 relate to financial assets of entities that are applying IFRS 17 and IFRS 9 in their accounting for the first time and presenting comparative information that has not been restated for IFRS 9. Entities have the option of presenting comparative information about a financial asset as if IFRS 9 classification and measurement requirements had been applied to that financial asset before. The option may be applied to each individual instrument.

KfW is not using the permitted option of early application of standard amendments. The future amendments to the standards described above are not expected to have any significant impact on KfW's net assets, financial and earnings position.

C. New or amended IFRS/IFRIC interpretations to be applied in the future that were published by the EU before the reporting date but have not yet been endorsed into European law

Standard concerned	Mandatory application for financial years from	Description
IAS 1	1 Jan. 2024	The January 2020 amendments serve to clarify the criteria for classifying liabilities as current or non-current. In the future, the classification of liabilities as current or non-current will be based on the rights held by the entity on the reporting date. A liability is classified as non-current if, at the end of the reporting period, the entity has a substantial right to defer settlement of the liability for at least 12 months after the reporting date. Further guidance on the interpretation of specific criteria and explanatory notes have also been included. The amendment to IAS 1 published in October 2022 clarifies when debt is to be classified as current or non-current, taking into account agreed covenants. It stipulates that only covenants that must be complied with on or before the reporting date affect the classification as current or non-current liabilities. For liabilities classified as non-current with covenants which are due within 12 months after the reporting date, additional disclosures must be made in the notes to enable users of the financial statements to assess the risk of a possible early repayment of the liability.
IFRS 16	1 Jan. 2024	The amendment to IFRS 16 introduces rules on subsequent measurement for seller-lessees in the case of leases in a sale and leaseback transaction. It stipulates that in the subsequent measurement, the lease liability is to be measured in a way that does not recognise any gain or loss that relates to the right of use it retains.

KfW does not intend to utilise any permitted options to apply standard amendments early. The amendments described above are likely to have only minor effects, if any, on KfW's net assets, financial and earnings position.

(3) Changes to material accounting policies

The method of calculating valuation adjustments induced by credit rating changes (xVAs) for derivative financial instruments was adjusted for KfW IPEX-Bank in the beginning of 2022. From the point at which this change was implemented, this resulted in a decrease of EUR 11 million, which was already anticipated in the consolidated financial statements as of 31 December 2021. Further developing the xVA calculation enables more precise determination of the ineffectiveness from economic hedges at group companies.

Against this backdrop, the method for calculating deferred taxes for derivatives in the taxable companies was also analysed and adjusted. This impacted the statement of financial position with regard to temporary differences in the derivatives business of the taxable companies. In one group company, the resulting decrease of deferred tax assets induced changes in impairments, which also affected other items, not related to derivatives.

Moreover, from financial year 2022, deferred income tax assets will be offset against corresponding deferred income tax liabilities at group company level. The adjustments to deferred taxes reduced KfW Group's total assets by EUR 270 million in financial year 2021. The adjustments did not have any significant impact on the consolidated income statement or group equity in financial year 2021.

The change was made by retroactive adjustment as follows:

Statement of financial position – assets (excerpt)

	Before adjustment 31 Dec. 2021 EUR in millions	Adjustment EUR in millions	After adjustment 31 Dec. 2021 EUR in millions
Deferred income tax assets	490	–268	222
<i>of which Financial assets (at amortised cost and at fair value)</i>	105	–2	103
<i>of which Intangible assets</i>	5	0	5
<i>of which Financial liabilities at fair value</i>	270	–252	18
<i>of which Provisions</i>	77	3	80
<i>of which other statement of financial position items</i>	17	–17	0
<i>of which Loss carryforwards</i>	16	0	16
Subtotal	490	–268	222
<i>Offset against deferred tax liabilities</i>	0	2	2
Total	490	–270	220
	0		0
Total assets	550,962	–270	550,692

Statement of financial position – liabilities and equity (excerpt)

	Before adjustment 31 Dec. 2021 EUR in millions	Adjustment EUR in millions	After adjustment 31 Dec. 2021 EUR in millions
Deferred income tax liabilities	308	–268	40
<i>of which Financial assets at fair value – Other derivatives</i>	275	–275	0
<i>of which Financial assets at fair value – Securities and investments</i>	0	39	39
<i>of which other statement of financial position items</i>	33	–32	1
Subtotal	308	–268	40
<i>Offset against deferred tax assets</i>	0	2	2
Total	308	–270	38
Total liabilities and equity	550,962	–270	550,692

(4) Judgements and accounting estimates

The consolidated financial statements include amounts based on management's judgements and/or estimates and assumptions which are determined to the best of our ability and in accordance with the applicable accounting standard. Actual results realised in a future period may differ from these estimates. Material judgements, estimates and assumptions are required, in particular, for calculating risk provisions (including risk provisions for lending business), recognising and measuring provisions (primarily for pension liabilities and legal risks), measuring the fair value of financial instruments based on valuation models (including determining the existence of an active market), determining remaining terms of leases, assessing and measuring impairment of assets, and assessing the utilisation of deferred tax assets. The estimates and the assumptions underlying these estimates are reviewed on an ongoing basis and are based, among other things, on historical experience or expected future events that appear likely given the particular circumstances. Where judgements as well as estimates and their underlying assumptions were required, the assumptions made are explained in the relevant notes.

KfW does not expect any deviations from its assumptions and does not foresee any uncertainties in its estimates that could result in a material adjustment to the related assets and liabilities within the next financial year. Given the strong dependency on the development of the economy and financial markets, however, such deviations and uncertainties cannot be fully ruled out. These risks are nevertheless low because valuation models – especially those involving the use of inputs not based on observable market data – are employed to measure only small parts of receivables, securities, investments and borrowings measured at fair value, on the one hand, and only a small portion of financial derivatives used to economically hedge risk, on the other hand.

The anticipated impact of the Russia-Ukraine war as well as the fading COVID-19 pandemic were taken into account in calculating risk provisions and fair values for equity investments within the framework of the established accounting policies. The procedure and the minor adjustments are presented as follows:

Risk provisions for performing loans (stages 1 and 2) and, in the retail business, also for non-performing loans (stage 3) are calculated using risk parameters which are geared to regulatory and internal credit risk models for the parameterisation of probability of default (“PD”), loss given default (“LGD”) and exposure at default (“EAD”). In the first half of 2022, there was a transition to a new system for the provision of these risk parameters, combined with the adoption of further developed models, particularly for the LGDs. The expected effects, calculated as a lump sum at the end of the year and already manually included in advance, were reduced accordingly.

In addition to the new models, it was possible to transition to best estimate parameters, which resulted in a reversal of risk provisions for performing loans in stages 1 and 2. This relief effect on risk provisions is partially compensated by the further development of the transfer criterion for non-retail business in good and medium rating classes. In addition, expected effects of methodological developments in bank rating, the EAD non-retail model as well as the LGD model of DEG were taken into account in the second half of 2022. Overall, this resulted in a total reduction in risk provisions for the business affected of EUR 14 million.

The economic effects of the Russia-Ukraine war and the energy crisis were taken into account as of 31 December 2022 mainly by means of adjusting the probabilities of default and of a more conservative treatment of loss ratios (inclusion of downturn components). The deteriorated macroeconomic expectations compared to the previous year are primarily reflected in the point in time adjustment of probabilities of default, which overall resulted in an increase in risk provisions for performing loans in financial year 2022.

Environmental, Social und Governance risks (“ESG risks”) do not present any new risks for KfW that need to be taken into account, as Risk Management already addresses ESG risks in the context of borrower ratings, credit assessments and portfolio analyses as part of the group’s risk strategy. These risks are therefore already reflected in risk provisions for lending business; they do not have a material impact on the determination of any individual risk provisions.

The subsequent assessment of equity investments at fair value is based on recognised standard valuation methods such as discounted cash flow (“DCF”) or net asset value (“NAV”). Due to the three-month time lag between the KfW Group reporting date (31 December 2022) and the reporting date for the equity funds (30 September 2022), the net asset values are adjusted, if necessary, in the event of short-term changes in the economic environment or new information regarding individual investments. The economic impact of the Russia-Ukraine war is taken into account in such assessment.

KfW Group adjusted the basis for deriving the discount rate for pension obligations in accordance with IFRS, effective 30 June 2022. The previously used Mercer Yield Curve has been replaced by a differentiated interest rate recommendation from KfW Group’s actuary Heubeck. The negative transition effect of EUR 23 million was recognised in equity with no effect on profit or loss.

(5) Group of consolidated companies

All significant subsidiaries, joint ventures and associated companies are included in the consolidated financial statements.

Subsidiaries are all business units (including structured entities) over which the group exercises control. Control exists when a group is exposed or entitled to variable cash flows through its relationship and has the opportunity to use its power of disposal to influence the amount of such cash flows. Subsidiaries are included in the consolidated financial statements (full consolidation) from the point at which control is transferred to the group. They are deconsolidated when control is lost.

Joint ventures and associated companies are included in the consolidated financial statements in accordance with IFRS 11/IAS 28 if a joint agreement is in place or the group has significant influence. Significant influence exists when KfW can participate in financial and business policy decisions regarding the associated company even if it does not have sole or joint control.

The composition of the consolidated group is presented in the Notes under "List of KfW Group shareholdings".

(6) Basis of consolidation

Consolidation involves revaluing the total assets and liabilities of the subsidiaries at the acquisition date, irrespective of the equity interest held, and incorporating them into the consolidated statement of financial position. The resulting adjustments from hidden reserves and hidden burdens are treated in accordance with the applicable standards during the initial assessment. If the revaluation adjustments result in an excess compared to acquisition cost, this excess amount is capitalised as goodwill. No goodwill is currently recognised.

Any intercompany assets and liabilities as well as expenses and revenues from transactions between consolidated group companies are eliminated through debt consolidation, or earnings and expenses consolidation, respectively. Intercompany profits between fully consolidated companies are also eliminated.

Investments in associates and joint ventures are accounted for using the equity method. The group's share of the profits or losses of associates and joint ventures is recognised in the "Net gains/losses from investments accounted for using the equity method" line item in the income statement.

There are no minority interests within KfW Group.

(7) Financial instruments

A. Classification and measurement

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. The rules under IFRS 9 "Financial Instruments" serve as the basis for recognition and measurement of financial instruments.

Classification of financial assets at initial recognition thus determines their subsequent measurement. Classification and subsequent measurement of debt instruments is based on the business model and characteristics of the contractual cash flows (solely payments of principal and interest, or "SPPI" criterion). Equity instruments, on the other hand, must always be measured at fair value.

IFRS 9 distinguishes between four categories of measurement for financial assets:

1. At amortised cost
2. At fair value through profit or loss ("FVTPL"), with the two sub-categories: mandatory and designated
3. At fair value through other comprehensive income ("FVTOCI") with no recycling into profit or loss (not used at KfW)
4. At fair value through other comprehensive income ("FVTOCI") with recycling into profit or loss (not used at KfW)

Instruments are assigned to business models on a portfolio basis. IFRS 9 provides for three business models to manage financial assets:

1. Hold to collect – financial assets are held with the objective of collecting contractual cash flows.
2. Hold to collect and sell – financial assets are held with the objective of both collecting the contractual cash flows and selling the financial assets (not used at KfW).
3. Hold to sell – financial assets held with the objective of selling, or which do not fulfil the “hold to collect” or “hold to collect and sell” criteria.

The cash flow criterion is assessed for each individual financial asset as the second step. The cash flows of financial instruments are then checked for consistency with a basic lending arrangement and as to whether they thus constitute SPPIs on the outstanding loan balance. IFRS 9 defines interest as compensation for the time value of money and credit risk assumed, although it can also include a premium for liquidity risk. As is customary for the sector, compensation (e.g. for equity or administrative costs) and a profit margin may also be included.

If payments contain payments beyond SPPIs, they must be measured at fair value. This also applies to non-recourse financing where the cash flows of the financed asset are increased or limited in such a way that they no longer constitute interest or principal payments in economic terms and the bank is consequently not exposed to a credit risk but rather to a project or investment risk.

A financing agreement condition does not affect classification if its effect on the contractual cash flows of the financial asset is only minor (de minimis). KfW employs group-wide rules and a standardised classification of contractual covenants in assessing the SPPI criterion. For sustainability-linked loans in which the interest rate varies depending on compliance with defined ESG criteria, a de minimis threshold value is taken as the basis for assessing the SPPI criterion.

An assessment is made in non-recourse loans as to whether mitigation of the property or project risks creates a sufficient risk buffer and whether this then outweighs the credit risk.

A financial asset must have been allocated to a portfolio with the “hold to collect” business model and meet the cash flow criterion for measurement at amortised cost. The KfW business model is focused on a long-term sustainability approach. As KfW does not enter into any transactions with the intention of generating a short-term profit, the Executive Board has decided on the “hold to collect” business model for all credit portfolios (except for the two cases mentioned below). Moreover, the group’s lending business is largely consistent with the definition of a basic lending arrangement, and thus meets the SPPI criterion. The two exceptions to the “hold to collect” business model in the lending business are as follows:

- Holding arrangements for the Federal Republic of Germany: Holdings KfW maintains by mandate for the Federal Republic of Germany are not subject to KfW management. Sales are to be executed upon the Federal Government’s instruction. As KfW cannot assume that these positions will remain in the portfolio for the long term, it cannot assume a “hold to collect” intention.
- KfW IPEX-Bank’s syndication business: This business focuses on short-term sales and not on the objective of holding and selling the assets in equal measure.

Both cases of exception are assigned to the “hold to sell” business model. The holdings are measured at FVTPL.

Securities portfolios are also assigned to the “hold to collect” business model. This applies to KfW’s liquidity portfolio as well. As KfW places minimum requirements on the ECB-eligibility of securities with regard to its liquidity portfolio, liquidity is secured by means of repo transactions. This therefore means that sales from the liquidity portfolio are unnecessary. The ancillary agreements are recorded and evaluated in the system to check the SPPI criterion. Securitisations are checked on a case-by-case basis to address the special rules for “contractually linked instruments”. Consequently, KfW securities portfolios are largely measured at amortised cost using the effective interest method, as is its lending business.

KfW’s investments from equity finance are accounted for at fair value through profit or loss, as these are either equity instruments or debt instruments with no fixed interest or principal payments. KfW does not exercise the option of FVTOCI for equity instruments.

Consequently, KfW only applies the first two categories for financial assets: amortised cost and FVTPL.

IFRS 9 only provides for two categories for financial liabilities: amortised cost and FVTPL. Financial liabilities are accounted for at FVTPL if they are classified as held for trading (mandatory fair value) or assigned to this measurement category at initial recognition through application of the fair value option (designated fair value); otherwise they are accounted for at amortised cost. The classification must be irrevocably determined at initial recognition. Reclassification is not permitted.

All non-derivative financial liabilities are held for non-trading purposes at KfW. All non-derivative financial liabilities for which the fair value option has not been exercised are classified as liabilities at amortised cost. These are thus measured at amortised cost using the effective interest method. For the group, this category covers funding reported in Financial liabilities at amortised cost (Liabilities to banks, Liabilities to customers and Certificated liabilities). The fair value option is exercised for some structured liabilities such as promissory note loans (Schuldscheindarlehen) and certificated liabilities. This concerns liabilities with bifurcated structures as well as liabilities with non-bifurcated structures for which there is an accounting mismatch unless they meet the requirements for application of hedge accounting. In exercising the fair value option, valuation effects resulting from changes in own credit risk are recognised directly in equity in the revaluation reserve.

Derivatives are concluded at KfW solely for hedging purposes and measured at FVTPL.

Derivatives are recognised as of the trade date, and all other financial assets as of the settlement date. They are derecognised when the contractual rights from the assets have expired, the power of disposal or control has been transferred, or a substantial portion of the risks and rewards has been transferred to a third party unrelated to KfW Group. Financial liabilities are derecognised if the obligations specified in the contract have been discharged or cancelled, or have expired.

Financial instruments are initially recognised at fair value. Directly attributable transaction costs are included as incidental acquisition costs.

Financial instruments subsequently measured at amortised cost are measured based on the fair value at initial recognition, taking into account any principal repayments, impairments, and where applicable, contractual amendments. The amortisation of premiums and discounts, transaction costs and fees is performed in accordance with the effective interest method on the basis of the contractual cash flows. Discounts are amortised in the promotional lending business until the end of the first fixed interest rate period (generally five to ten years).

Subsequent measurement at fair value for recognition in the financial statements or for the disclosure of financial instruments in the Notes is presented in Section D. Fair value.

In accordance with Article 2 (4) of the KfW Law, the German Federal Government may mandate transactions to KfW on a case-by-case basis if there is a public interest on the part of the Federal Republic of Germany. Such transactions are referred to as mandated transactions. This means that KfW is mandated by the Federal Government to enter into or acquire certain financial instruments. Both equity and debt instruments can be used for such purposes. Mandated transactions are accounted for by applying the generally accepted IFRS rules on additions and disposals, but also on the receipt of income.

Due to the supplemental agreements with the Federal Government often associated with mandated transactions, the disposal criteria and, in particular, the existence of on-lending agreements must also be checked, in addition to the review of the initial recognition of the relevant financial instruments. On-lending agreements ensure that cash flows between KfW and the respective party to the agreement are ultimately passed on to the Federal Government. While the disposal criteria are normally not met with respect to debt instruments, they are generally met when applied to equity instruments, and the financial instrument is thus de-recognised immediately after initial recognition in the statement of financial position. Equity instruments resulting from mandated transactions are therefore not recognised in the financial statements, but are included in disclosures on trust activities in the notes.

B. Impairments

At KfW Group, provisions for loan losses are accounted for in accordance with IFRS 9 requirements and applied to the following financial instruments:

- Loans and receivables as well as third-party securities measured at amortised cost
- Loan commitments not measured at fair value through profit or loss
- Financial guarantees not measured at fair value through profit or loss

Impairments are calculated based on a three-stage model. All assets are assigned to stage 1 at initial recognition and an impairment is calculated that is equivalent to the 12-month expected credit loss ("ECL").

Subsequently, expected credit losses are calculated based on changes in a financial instrument's credit risk since initial recognition. If there has been a significant deterioration of the credit risk (stage 2) or objective evidence of impairment is identified (stage 3), expected credit losses are to be calculated over the remaining lifetime (lifetime ECLs). If, in contrast, there has been no significant increase in credit risk, the financial instrument is still assigned to stage 1 and only the ECLs for the term of the instrument resulting within the next 12 months from potential loss events are taken into account.

A lifetime ECL is recognised for financial instruments in stage 2 as risk provisioning. This is based on risk parameters oriented to regulatory and internal credit risk models for parameterisation of probability of default ("PD"), loss given default ("LGD") and exposure at default ("EAD"). Interest income for financial instruments in stage 2 is recorded using the effective interest method based on the gross carrying amount.

A lifetime ECL is also recognised for financial instruments in stage 3 as risk provisioning. Assignment to stage 3 and thus classification as impaired is undertaken in line with the group-wide default definition, which reflects the definition of "default of an obligor" in accordance with Article 178 of the Capital Requirements Regulation ("CRR"). The definition distinguishes between the 90 days past due and unlikely to pay criteria. A distinction is made in calculating impairment in stage 3 between significant (non-retail) and non-significant (retail) financial instruments. Impairment for retail business in stage 3 is calculated based on risk parameters and applying a PD of 1. Individual impairment is recognised for incurred losses and is computed on the basis of individual loans for significant portfolios in the lending business. The amount of the impairment loss equals the difference between the carrying amount of the loan and the present value of discounted expected future cash flows from interest, redemption payments and collateral cash flows. Any reversals of individual impairment losses are accounted for through profit or loss. Interest income for these financial instruments is recognised based on the net carrying amount.

In contrast to the lending business, expected losses for defaulted securities are not calculated based on cash flow but instead on market values in stage 3. This is due to the assumption that the market value in the case of impairment is primarily influenced by credit rating factors.

Purchased or originated credit-impaired financial assets ("POCI") are not significant due to KfW's business model. The bank has therefore decided not to separately disclose these special requirements. If there are individual cases that meet the POCI definition, they will be assigned to stage 3 based on the default rating at the time of purchase.

KfW takes a nuanced approach to assignment to stages that takes both rating and qualitative information into account.

The bank uses the rating at initial recognition, taking account of the migration expected until the time of measurement (initial forward rating) to assess whether a transaction can migrate from stage 1 to stage 2. This rating, which is relevant for pricing, is compared with the rating at the time of measurement. This ensures that only transactions for which there is a significant deviation from the originally expected migration are transferred to stage 2. Concessions (contractual modifications) made to the obligor for economic or legal reasons (forbearance), are also considered as a factor in transfer to a subsequent stage.

As there is no individual rating specific to an obligor in the retail business, transfers from stage 1 to stage 2 are based on other credit deterioration indicators, such as negative factors or 30-days-past-due status.

KfW does not exercise the option of waiving assessment on whether there has been a significant increase in credit risk, if the instrument is determined to have 'low credit risk' at the reporting date (low credit risk exemption).

The IFRS 9 impairment model takes a symmetrical approach to migration, meaning that forward migration to stage 2 or stage 3 as well as reversion back from stages 2 and 3 are possible. Periods of good conduct are defined for the retail business, based on previous past-due status (> 30 days) or default. These range from 90 days to two years, depending on the specifics of the case. This accounts for the fact that no rating-based transfer criterion is applied to the retail business, and therefore, for example, in the absence of a payment default (> 30 days) without a good conduct period, there would be an immediate reversion to stage 1.

Expected credit losses for stage 1 and stage 2 and the retail business in stage 3 are calculated based on individual transactions using statistical risk parameters. The regulatory and internal credit risk models for parametrisation of PD, EAD and LGD that KfW uses in risk management serve as the basis for this calculation. These parameters are adequately adjusted to determine expected credit losses in accordance with IFRS 9. This enables largely uniform credit risk modelling in line with supervisory law, risk management and IFRS requirements even though they may individually differ somewhat in scope.

Calculation of one-year PD is based on the internal rating system, in which every exposure is assigned a PD score that corresponds to a rating scale of 18 levels for non-defaulted transactions ("PL") and two levels for defaulted transactions ("NPL"). The lifetime PDs are derived from the one-year PD via migration matrices. For IFRS 9-compliant PD modelling, the internal credit risk parameters are adjusted by placing a greater weight on macroeconomic factors from a point-in-time ("PIT") perspective. The adjustment is made through segment and rating-specific modelling of PD premiums and discounts on regulatory PD (through-the-cycle PD). This is based on expert estimates of the economic situation of sectors and countries, with assessment of expected effects, taking into account forward-looking information. This approach differs for the retail business, for which premiums and discounts are calculated applying an expert model based on econometric factors.

LGd is the loss ratio that results in the event of default after taking collateral into account. In accordance with IFRS 9 impairment requirements, a multi-year view without taking internal costs into account is generally required. The regulatory LGD parameters are adjusted accordingly in order that internal costs for IFRS 9 are not included in the calculation of expected credit losses.

The EAD per time bucket corresponds to the loan drawdown expected at the time of default, taking into account additional drawings on open lines of credit. For the off-balance sheet portion, the expected drawdown is calculated based on credit conversion factors ("CCFs").

Risk provisions for on-balance sheet lending and securities business are deducted directly from the statement of financial position item Financial assets at amortised cost. Risk provisions for the off-balance sheet lending business are accounted for on the liabilities side as Provisions (sub-item: Provisions for credit risks).

The credit risks resulting from the on and off-balance sheet lending business and from financial assets measured at amortised cost are accounted for through impairments recognised in profit or loss in the amount of the one-year expected credit loss (stage 1) or the lifetime expected credit loss (stage 2 and stage 3). Additions to and reversals of risk provisions are recognised in Net gains/losses from risk provisions in the income statement.

An asset is written off in the event that it, or a portion thereof, is estimated as irrecoverable (write-off). In the non-retail business, this is not performed until there is no longer a prospect of recovery, as, for instance, all collateral has been realised or, in the event of insolvency, creditor quotas have been distributed or insolvency proceedings have been discontinued for lack of assets. Write-offs in the retail business are performed pursuant to defined criteria such as insolvency or a fixed default period, which are both related to termination of the loan. Recovery is pursued as long as it is economically viable.

In the case of a write-off, the gross carrying amount is reduced by the amount of the write-off. Current provisions for loan losses are utilised first, and any remaining amount is written off directly. Similar to recoveries on loans already written off, this direct write-off is also reported through profit or loss in the Net gains/losses from risk provisions item.

C. Contractual modifications

IFRS 9 defines contractual modifications as modifications of contractual cash flows. These can be caused by the credit rating or the market. In contrast, an adjustment of contractual payments agreed at the time the contract was concluded and thus intrinsic to the contract is not deemed a contractual modification.

Substantial contractual modifications result in derecognition of financial assets even if the same or the modified contract legally remains valid. The modified financial instrument is treated in accordance with IFRS 9 as a new contract and reclassified on the basis of general IFRS 9 classification criteria. Derecognition resulting from substantial modification is not relevant for the “hold to collect” business model. In the case of substantial modification of credit-impaired financial assets (non-performing loans – “NPLs”), the impairment loss is adjusted at derecognition. The amount of adjustment is the difference between the previous net carrying amount of the derecognised asset and the fair value of the newly recorded asset. The reduction in loan loss provisions is then recorded as utilisation at the time of derecognition. There are no further gains or losses resulting from the derecognition.

There is no write-off for non-substantial contractual modifications. A revaluation of the gross carrying amount of the modified financial instrument is performed instead. The resulting valuation difference is recognised in profit or loss as a modification gain or loss. The modification gain or loss reflects the effects on net present value of the contractually agreed upon change in cash flows. The original effective interest rate is applied for discounting cash flows. Then, on subsequent reporting dates, the original effective interest rate is applied to what is at that time the current (modified) cash flow for discounting. An amortisation result, which is reported as part of Net interest income, is calculated as the delta to the amortised costs of the previous reporting date on the basis of the amortised costs calculated using this method. This therefore yields an amortisation amount that partially represents the original premium/discount but also includes amortisation of the modification gain/loss.

The modification list serves as the group-wide basis for identification of relevant contractual modifications. A distinction is to be made between substantial and non-substantial modifications. This distinction is normally made based on qualitative criteria such as contractual amendments that result in a violation of the cash flow criterion within the meaning of IFRS 9.4.1.1(b).

Changes in currency without a contractual currency change option and changes in borrowers are also deemed substantial modifications. Since a substantial modification results in a failure to fulfil the cash flow criterion, the newly recorded financial assets are subsequently measured at fair value and reported under the statement of financial position item Financial assets at fair value.

In the event of a non-substantial modification, an assessment must be made of whether the credit risk has increased significantly and whether a stage transfer may consequently be necessary. This ensures that a credit risk-related contractual modification triggers an ad hoc rating as an early warning signal or at least a documented review of the need for an ad hoc rating in accordance with requirements for early detection of risks. This current rating is taken into account accordingly in the assignment to stages.

D. Fair value

Subsequent measurement at fair value, which, depending on the measurement category, is regularly determined either for recognition in the statement of financial position or for the disclosure of financial instruments in the Notes, is based on the following hierarchy at KfW Group:

Active market – allocation to level 1 (Quoted market price)

The best objective evidence of fair value is provided by published price quotations in an active market. A financial instrument is regarded as quoted in an active market if quoted prices are readily and regularly available and those prices represent current – i.e. traded on the reporting date or shortly before – and regularly occurring market transactions on an arm's length basis. Together with the traded nominal volumes, the contract sizes and the number of contracts, this assessment takes into account in particular the bid-ask spreads observed which in the event of a significant increase indicate the absence of an active market.

No active market – allocation to level 2 (Valuation methods based on observable market data [model]) or level 3 (Valuation methods based in part on data not observable in a market).

If the financial instrument is not quoted in an active market, valuation techniques are used. The valuation techniques applied include, in particular, the discounted cash flow (“DCF”) method and option pricing models, as well as a comparison to the fair value of a financial instrument with almost identical characteristics (e.g. multiple-based models). The valuation techniques take account of all input parameters that the market participants would include in the pricing of that financial instrument, e.g. market interest rates, risk-free interest rates, credit spreads or swap curves. As these input parameters can generally be observed in the market and are usually the only significant parameters for measuring financial instruments using valuation techniques, the level for the financial instruments measured at fair value using valuation methods is usually level 2. This allocation also generally applies for prices quoted on inactive markets published by price service agencies.

If significant input parameters that are not observable on the market, such as expected risk-free customer margins or capital costs, are used in valuation techniques, the financial instrument is allocated to level 3.

If, at the date of initial recognition, differences arise between the market-based transaction price and the model price resulting from a valuation technique that makes significant use of unobservable parameters, an analysis is performed to determine whether there are economic reasons for these initial differences (e.g. conclusion of a transaction on a market that is not the main market for this transaction). These economic reasons only apply to a small part of the derivative portfolio of KfW Group, which comprises a hedging instrument for customers with respect to the export and project financing business. In relation to this, OTC (over the counter) derivatives in line with the market are not concluded on the main market (OTC interbank market) relevant to valuation. The initial differences determined upon conclusion of these derivatives are amortised through profit or loss over the life of the financial instruments, as the valuation parameters unobservable on the market are relevant to the valuation procedure. The reliability of this valuation technique is ensured via regular model validations.

This (valuation) hierarchy is applied in the group as follows:

Fair values are derived from active markets, in particular, for bonds and other fixed-income securities – unless there are inactive markets, and valuation techniques or prices quoted on inactive markets published by price service agencies are therefore used – as well as own issues reported on the liabilities side. Valuation techniques for non-derivative financial instruments are used primarily for products reported under Financial assets at fair value (loans and advances to banks, loans and advances to customers, and equity investments) and Financial liabilities at fair value (liabilities to banks, liabilities to customers, and certificated liabilities). Valuation techniques are also used for OTC derivatives.

The steps detailed below are taken for certain product groups:

For securities in the Securities and investments line item, the group examines whether a financial instrument is quoted on an active market on the basis of homogeneous portfolios. Market activity is assessed based on the following criteria:

- There is more than one market maker.
- Prices are set on a regular basis.
- Prices deviate only slightly between market makers.
- The bid-ask spread is narrow.

Prices on active markets are used to determine the fair value of the group’s asset securities as of the reporting date. In addition, for parts of the portfolio, prices from price service agencies are used that do not qualify as prices quoted on active markets. Should these not be available in individual cases, valuation techniques are used to determine fair value taking into account observable market parameters. The input parameters include, in particular, changes in creditworthiness and risk-free interest rates, but they also take into account general and financial instrument-specific tightening of the market due to lower liquidity.

In measuring OTC derivatives, KfW determines valuation adjustments for counterparty risks (credit valuation adjustments – “CVA”), own default risk (debt valuation adjustments – “DVA”), collateral costs under credit support annexes (“CSA”) (collateral valuation adjustments – “ColVa”) and funding cost adjustments (“FCA”). KfW’s institute-specific funding costs are used to calculate the FCA. Value adjustments are not calculated separately for each transaction but for the portfolio of transactions on which a framework agreement is based. The allocation to individual transactions is based on the relative credit adjustment approach. The resulting adjustment amounts are very low as KfW generally pledges collateral for positive market values in accordance with standard market collateral agreements. In accordance with market practices, risk-free overnight interest rates are used for the valuation of the derivatives portfolio.

The fair value of Loans to banks and customers is calculated using the discounted cash flow (“DCF”) method based on the discounting of the risk-adjusted cash flows. The expected loss calculated for the respective reporting date is used to correct the contractual cash flows.

The holding arrangements for the Federal Republic of Germany are accounted for as receivables from the Federal Government. The receivables comprise the KfW-funded purchase price of the items held for the Federal Republic of Germany as well as an additional benefit from the sales proceeds of the items. The receivables are measured at fair value, with the additional benefit being accounted for as a key value driver using current market prices of the items held.

Valuation methods based on net asset value are also used in addition to the discounted cash flow method for valuation of equity investments. If net asset value does not appropriately reflect extraordinary economic developments, necessary adjustments are made as of the balance sheet date.

The Federal Republic of Germany’s liability for specific KfW liabilities in accordance with Article 1a of the KfW Law has an advantageous effect on KfW’s ability to fund itself. In determining the fair value of KfW’s liabilities, the effect of this explicit direct state guarantee is also taken into account. The state guarantee does not represent an independent unit of account.

The fair value of financial instruments due on demand, such as Cash reserves or receivables and liabilities due on demand, is their carrying amount.

When no prices from liquid markets are available and prices on inactive markets cannot be provided by price service agencies, recognised valuation models and methods are used. The DCF method is used for securities, swaps, and currency and money market transactions with no embedded options or complex coupons. Stand-alone options, as well as derivatives with embedded options, triggers, guaranteed interest rates and/or complex coupon agreements, are measured using recognised models (e.g. Hull & White) unless they are listed on a stock exchange.

The aforementioned models are calibrated, if possible, on the basis of observable market data for instruments that are similar in terms of the type of transaction, maturity, and credit quality.

E. Financial guarantee contracts

A financial guarantee contract is a contract that requires the guarantor to make specified payments that compensate the holder for a loss it incurs because a specified debtor fails to meet its contractual payment obligations. For the guarantor, a financial guarantee contract is to be measured at fair value at initial recognition, which is zero at contract conclusion, as the value of the premium on fair value contracts is equal to the value of the guarantee obligation (net presentation). Moreover, fair value at initial recognition is no longer carried forward in such net presentation, but rather incoming premium payments are recognised through profit or loss in Net commission income. If a financial guarantee contract is not designated to the fair value measurement category at initial recognition, a provision is recognised for expected losses from a financial guarantee as part of a subsequent assessment, applying IFRS 9 rules for risk provisioning. KfW Group does not voluntarily designate financial guarantee contracts for measurement at fair value.

For the holder, on the other hand, this is a contingent asset that may not be capitalised. However, a (non-impaired) financial guarantee contract is, for the holder, collateral that may be included in calculating risk provisions for the recognised reference asset.

Provisions for expected losses from financial guarantees are reported under Provisions for credit risks.

F. Reporting and Notes

Current interest and similar income from a financial asset are generally recorded under Interest income. If, due to the low interest environment, negative interest rates arise from a financial asset, these are also recorded in Interest income, with a minus sign. Premiums, discounts, processing fees and charges are amortised in Interest income using the effective interest method. Processing fees that are not amortised under the effective interest method are recognised under Commission income.

Any fair value changes of financial assets at fair value through profit or loss are recognised in Net gains/losses from other financial instruments at fair value through profit or loss.

Current interest arising from a financial liability is recorded in Interest expense. This also applies in the case of negative interest resulting from a low interest rate environment. Premiums and discounts are also amortised in Interest expense using the effective interest method over the expected life.

Results from the repurchase of own issues categorised as liabilities measured at amortised cost are recognised at the repurchase date in Net other operating income.

Classes for financial instruments have been largely defined in agreement with the group's business model which is focused on the lending business. The definition is based in particular on the national requirements for balance sheet classification at banks and financial services institutions. The following classes (and sub-classes) were defined for financial assets and financial liabilities:

Transition of the statement of financial position items for financial instruments to classes in accordance with IFRS 7.6

Statement of financial position item	Class	Sub-class
Financial assets at amortised cost	<i>Loans and advances to banks</i>	Money-market transactions
		Loans and advances
		Promissory note loans
	<i>Loans and advances to customers</i>	Other receivables
		Money-market transactions
		Loans and advances
		Promissory note loans
		Other receivables
	<i>Securities and investments</i>	Bonds and other fixed-income securities
Financial assets at fair value	<i>Loans and advances to banks</i>	Money-market transactions
		Loans and advances
		Promissory note loans
	<i>Loans and advances to customers</i>	Other receivables
		Money-market transactions
		Loans and advances
		Promissory note loans
	<i>Securities and investments</i>	Other receivables
		Bonds and other fixed-income securities
		Shares and other non-fixed income securities
	<i>Other derivatives</i>	Equity investments
		Shares in non-consolidated subsidiaries
		Interest-related derivatives
Financial liabilities at amortised cost	<i>Liabilities to banks</i>	Cross-currency derivatives
		Other derivatives
		Money-market transactions
	<i>Liabilities to customers</i>	Promissory note loans
		Other financial liabilities
		Money-market transactions
	<i>Certificated liabilities</i>	Promissory note loans
		Other financial liabilities
		Money-market issues
Financial liabilities at fair value	<i>Liabilities to banks</i>	Bonds and notes
		Money-market transactions
		Promissory note loans
	<i>Liabilities to customers</i>	Other financial liabilities
		Money-market transactions
		Promissory note loans
	<i>Certificated liabilities</i>	Other financial liabilities
		Money-market issues
		Bonds and notes
	<i>Other derivatives</i>	Interest-related derivatives
		Cross-currency derivatives
		Other derivatives

In addition, the items from the asset and liability sides of the statement of financial position, Value adjustments from macro fair value hedge accounting, Derivatives designated for hedge accounting, and Off-balance sheet transactions each form a separate class.

The Loans and advances to banks class primarily consists of the promotional lending business, in which loans are typically granted to the final borrowers through accredited commercial banks. These assets are presented in this class when the commercial banks underwrite part of the liability. Promotional loans that commercial banks on-lend without underwriting of liability are recognised in the class Loans and advances to customers.

The Loans and advances to banks and Loans and advances to customers classes also include loans that benefit from a subsidy (interest rate reductions) granted by KfW under the ERP economic promotion programme. The promotional grants awarded annually to KfW through the ERP Special Fund based on the ERP Economic Planning Act (*ERP-Wirtschaftsplangesetz*) for the purpose of executing the ERP economic promotion programme are recognised as deferred income in Other liabilities and are amortised in profit or loss under Interest income as the underlying funding expenses occur.

The Securities and investments class mainly comprises bonds and other fixed-income securities held in securities portfolios that belong to KfW and its subsidiaries, along with equity investments.

The securities portfolios mainly serve to support KfW's liquidity position and to stabilise and ensure the group's promotional capacity in the long term.

To achieve the same accounting treatment for equity investments with and without significant influence, individual group business areas that provide equity finance as part of their promotional mandate are considered as venture capital organisations for accounting purposes provided they meet the respective requirements. These equity investments, like other equity investments, are allocated to the Securities and investments class.

The Liabilities to banks and Liabilities to customers classes largely comprise KfW Group borrowings and money-market transactions.

Issued bonds, notes and money market securities are allocated to the Certificated liabilities class. Own issues repurchased in the open market are deducted from the liabilities as of the repurchase date.

In some of the Notes, these classes are broken down into additional sub-classes that relate mainly to products (for example, Loans and advances to banks are reported separately for money-market transactions and loans and advances).

Information about the type and extent of risks associated with financial instruments is also provided in the risk report section of the combined management report.

(8) Derivatives and hedging relationships

A. Hedging transactions/Hedge accounting

KfW Group enters into financial derivatives to economically hedge interest rate fluctuation and currency risks, particularly those related to funding, lending and securities activities. Interest rate swaps, interest rate/currency swaps and base currency swaps are mainly used for this purpose. Interest rate swaps are used to convert fixed rate interest payments of the issuances or lending transactions into variable payments. In the case of refinancing in a foreign currency, payments are also converted into the functional currency (EUR). The hedge ratio for the issues is normally 1:1. Ineffectiveness therefore results exclusively from unhedged risks such as counterparty risk or tenor or basis spread risks.

Economic hedging relationships are designated as hedge accounting relationships or designated as fair value through profit or loss by using the fair value option when the IFRS requirements are met. Economic hedging relationships can also be recognised in the financial statements through bifurcation of separable embedded derivatives on the liabilities side that are accounted for through profit or loss. In these cases, if the hedges are economically effective, the impact on the financial statements, with respect to the hedged risks, from the instruments used for hedging purposes and the hedged transactions will substantially offset each other, so that the group's income statement substantially reflects the risk-mitigating impact of these hedging relationships.

However, not all economic hedging relationships qualify for hedge accounting or the fair value option. In these cases, the risk-mitigating impact of the derivatives used for hedging purposes is not reflected in the accounts because the hedged risk associated with the underlying transactions is not recognised in profit or loss under IFRS. The applicable recognition requirements may therefore lead to one-sided valuation results from the derivatives used for hedging purposes in the group's income statement – as well as volatility in profit or loss – despite an economically effective hedging relationship.

Hedge accounting in the group is used solely in the form of fair value hedges to recognise economic hedging relationships. The hedging relationship is designated, firstly, at individual transaction and group level in the form of micro fair value hedge accounting, and, secondly, at portfolio level in the form of macro fair value hedge accounting. KfW has exercised the option of applying IAS 39 rules for hedge accounting. If risk-free overnight interest rates are used in the valuation of the derivatives, this market practice is also subject to micro fair value hedge accounting for the measurement of the hedged risk related to the hedged item. The hedged risk in macro fair value hedge accounting generally relates to the variable interest rates of the derivative portfolio. The effectiveness of the hedging relationships is assessed using the dollar offset method and a regression analysis (80%–125% range for assessing effectiveness).

In micro fair value hedge accounting, interest and currency risks from bonds allocated to Securities and investments (in the Financial assets at amortised cost item) and, above all, from borrowings (in the Financial liabilities at amortised cost item) are hedged. In micro fair value hedging relationships at individual transaction level, the fair value changes attributable to the hedged risks are reported as an adjustment of the carrying amount of the hedged items with the corresponding gain or loss recognised under Net gains/losses from hedge accounting. The hedging instruments used for this purpose are recognised at fair value in Derivatives designated for hedge accounting. Changes in the value of the hedging instruments are also recognised in Net gains/losses from hedge accounting, largely compensating the profit or loss effects of the hedged items.

Macro fair value hedge accounting is used to hedge against interest risks primarily from loan receivables (in the Financial assets at amortised cost item) and firm obligations via future fixed-rate financing that are hedged against interest risks as part of dynamic asset liability management in the group. The fair value changes attributable to the hedged risks in the hedged portfolios in the Amortised cost category (loans and advances / liabilities) are accounted for in Value adjustments from macro fair value hedge accounting on the assets or liabilities side. Fair value changes attributable to the hedged risks from the hedged portfolios are reported in Net gains/losses from hedge accounting.

The hedging instruments are reported at fair value in Derivatives designated for hedge accounting. Changes in the value of these instruments are also recognised in Net gains/losses from hedge accounting, with the effect that they almost fully offset the earnings effects from the valuation of the hedged portfolios.

The portfolio of hedged items is updated monthly in the context of a dynamic hedge de-designation and designation process. The resulting fair value adjustments are amortised over the residual term of the maturity period in Net gains/losses from hedge accounting. Disposals from the hedged portfolios result in a proportional amortisation of the related fair value adjustments in Net gains/losses from hedge accounting. When cash flows from hedging instruments are derecognised while the economic hedge based on non-derivative financial instruments remains, the related fair value adjustments from the hedged portfolios are amortised in Net interest income.

If the strict hedge accounting requirements for the designation of hedging relationships between derivatives and financial assets/liabilities are not fulfilled within KfW Group, the fair value option is used in certain circumstances. The fair values of the hedging instruments are presented in Financial assets at fair value or Financial liabilities at fair value, and the changes are presented in Net gains/losses from other financial instruments at fair value through profit or loss. These are largely offset by valuation effects from the hedged transactions. Fair value changes in liabilities resulting from changes in KfW's own credit risk are directly recognised in Other comprehensive income ("OCI").

Further derivative financial instruments are used to hedge risks, but their economic hedging relationships are not reflected in the accounts. The fair values of these hedging instruments are also presented in Financial assets at fair value or Financial liabilities at fair value, and the changes are presented in Net gains/losses from other financial instruments at fair value through profit or loss.

KfW Group neither uses derivatives for trading purposes nor does it enter into derivatives acting as a broker or intermediary on behalf of third parties.

B. Embedded derivatives

Derivative financial instruments can be part of a hybrid (combined) financial liability as embedded derivatives. Under certain conditions, they are accounted for separately from the host contract, similar to stand-alone derivatives. They must be bifurcated if the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host contract. The host contract is accounted for according to its classification at inception.

KfW Group enters into contracts with separable embedded derivatives particularly with respect to its own funding. In the case of these products, the embedded derivatives must be bifurcated and recognised separately. Changes in fair value are then recognised in Net gains/losses from other financial instruments at fair value through profit or loss in the sub-line item Financial derivatives not qualifying for hedge accounting, where they have a compensatory effect on the valuation of the economic hedging derivatives.

The fair value option was selected for certificated liabilities with bifurcated (embedded) derivatives recorded prior to bifurcation.

(9) Offsetting of financial instruments

KfW uses the EUREX central clearing system to settle part of its derivative transactions. This form of settling derivative transactions results in the recognition of a net amount in the statement of financial position for the transactions affected, as the involvement of EUREX as the central counterparty (CCP) meets all of the requirements for offsetting as set out in the relevant IFRS standard. This means that positive and negative fair values of derivatives for which EUREX acts as the central counterparty are offset against the corresponding collateral and reported in a net item in the statement of financial position.

In the case of reverse repo and repo transactions, for which EUREX acts as the central counterparty, receivables and liabilities are also offset if the currencies and the value dates are the same.

In addition, framework agreements featuring netting agreements are in place between KfW and its business partners for OTC derivatives and securities repo transactions.

One form of netting is close-out netting, which provides for the elimination of all rights and obligations relating to individual transactions under the framework agreement upon termination of said framework agreement by the contractual partner, or upon the latter's insolvency, with the rights and obligations replaced by a single compensation claim (or obligation) in the amount of the net replacement costs of the terminated individual transactions. This does not represent a present legal claim for offsetting.

Close-out netting is not to be confused with the offsetting of payments in normal business. The same framework agreement may provide for the latter, i.e., that payments due on the same day and in the same currency may be offset and a net payment made instead of each individual payment (payment netting). This represents a present legal claim for offsetting.

All of KfW's framework agreements relating to bilateral OTC derivatives (not in central clearing) include close-out netting agreements with the business partners. Payment netting is limited in the agreement to the relevant individual transaction, so that multiple transaction payment netting does not occur. The requirements for offsetting financial assets and financial liabilities are therefore not met for these KfW OTC derivatives.

KfW's framework agreements for repo transactions include close-out netting agreements and, in some cases, payment netting agreements with the business partners as well. However, as KfW does not, as a rule, perform multiple transaction payment netting with repo transactions, the requirements for the offsetting of financial assets and financial liabilities are not met for such KfW repo transactions.

In accordance with the collateral agreements concluded for OTC derivatives and repo transactions, the values of the available collateral are used in determining the single compensation claim (or obligation) in close-out netting. Both cash and securities are permitted forms of collateral under the existing collateral agreements between KfW and its business partners. The collateral agreements provide for a transfer of title in the case of securities as collateral. Consequently, the transferred securities are not subject to any selling or pledging restrictions.

(10) Foreign currency translation

The functional currency of KfW and its consolidated subsidiaries is the euro. Monetary assets and liabilities denominated in a foreign currency are converted at the spot rate as of the reporting date.

Non-monetary assets and liabilities denominated in a foreign currency are normally converted at historical rates if they are measured at (amortised) cost. Translation is made using the European Central Bank reference rates.

The changes in value resulting from foreign currency translation are reported in the income statement under Net gains/losses from other financial instruments at fair value through profit or loss.

(11) Revenue from contracts with customers

IFRS 15 defines the nature, amount and timing of revenue arising from contracts with customers. Such revenue includes fees which are not an integral part of the effective interest rate and which are reported under Commission income. In this context, a five-step principle-based model is to be applied to relevant customer contracts. Moreover, the Notes are to include comprehensive detailed quantitative and qualitative information. IFRS 15 does not apply to fees and charges that are an integral part of the effective interest rate as they fall under the scope of IFRS 9.

There are primarily mandate contractual arrangements with the Federal Government as contracting authority within the meaning of IFRS 15. They include fees for the administration of German Financial Cooperation for the promotion of developing countries and emerging economies, fees for the administration of certain programmes subsidised by the Federal Government, and fees for debt collection on certain loans. KfW also charges fees for administrative services for other mandate agreements as well as for processing services and to a limited extent for services for lending and trust activities. Individual services may be grouped together into a bundle of services that qualifies as a separate performance obligation within the meaning of IFRS 15. The value of the transaction is therefore not broken down.

As performance obligations are mostly satisfied over time, revenue from customer contracts is recognised according to the measure of progress and is thus normally recognised over time.

KfW Group has no items that require recognising customer acquisition or contract fulfilment costs as assets. One-time advance payments to be allocated are deferred and recognised as contract liabilities in the statement of financial position under Other liabilities.

If the service has already been performed but fees have not yet been paid or if there is not yet any claim to payment, a contract asset is to be recognised in the statement of financial position under Other assets. If the claim becomes unconditional, the contract asset is to be reclassified as a Trade receivable adjusting the carrying amount where applicable. This rule is applied to fees for administration of certain programmes subsidised by the Federal Government. Based on the credit rating and short remaining life, no expected credit loss is calculated.

(12) Promotional lending business at KfW

The general promotional loans market, which distinguishes itself from the market for general lending business, is relevant for KfW's promotional lending business conducted as part of its legal promotional mandate. This market is characterised by the fact that promotional banks, as part of their legal mandate, pass on all funding advantages to the ultimate borrowers in financing projects eligible for promotion. In setting the terms and conditions of the corresponding promotional loans, KfW uses its current term-differentiated refinancing rates.

At initial recognition of such loans, the fair value is thus equivalent to the transaction value.

KfW also grants promotional loans which include additional subsidies granted during the first fixed interest rate period, in the form of interest rate reductions impacting KfW's earnings position. The fair value of these promotional loans – measured using the parameters of the general promotional loan market – is thus not equivalent to the transaction value at initial recognition as in this case the interest rate is below the market rate.

The difference that normally results from such loan commitments – present value of the nominal scheduled interest rate reductions during the first fixed interest rate period – is recognised in profit or loss as an interest expense and accounted for as an adjustment to the carrying amount in loans and advances under the item Financial assets at amortised cost. The adjustment to the carrying amount is amortised in Net interest income using the effective interest rate method. In the event of unscheduled repayment in full, this is recognised in profit or loss under Interest income.

Differences that relate to irrevocable loan commitments are reported in Provisions. Changes to the portfolio are offset via the adjustments to the carrying amounts of already disbursed promotional loans recognised on the assets side.

(13) Non-current assets held for sale

Under IFRS 5, separate presentation and measurement requirements apply to non-current assets held for sale if the assets are available for immediate sale and such sale is highly probable. Assets that meet the IFRS 5 criteria are reported in the separate statement of financial position item: Non-current assets held for sale. The IFRS 5 measurement requirements are not applied if they relate to financial assets. In this case, the IFRS 9 measurement requirements continue to apply instead.

(14) Repurchase agreements and securities lending

KfW Group enters into repurchase agreements as standardised repos or reverse repos. These are combinations of simultaneous spot and forward transactions on interest-bearing securities with the same counterparty. The terms and modalities of collateral and its use follow common market practice. Credit claims are also an eligible type of collateral for open-market transactions.

The interest-bearing securities sold under repo transactions (spot sales) continue to be recognised and measured under Financial assets at amortised cost. The repayment obligation towards the counterparty is carried under Financial liabilities at amortised cost for the amount of cash consideration received. The repo rate as a fee for borrowing is recorded by KfW, as the borrower, under Interest expense over the term of the agreement. The borrower is entitled to the coupon on the security. A repayment claim is recognised and measured under Financial assets at amortised cost for the amount of cash outflow generated by reverse repos. The securities received (spot purchases) are not recognised or measured. The repo rate as a fee for lending is recorded by KfW as the lender under Interest income over the term of the agreement.

The term 'securities lending' refers to transactions in which securities are transferred from the lender to the borrower with the obligation that the borrower transfer back securities of the same type, quality and quantity at the end of the agreed term and pay a usage fee for the duration of the loan. IFRS 9 does not distinguish between collateralised and uncollateralised securities lending. The cash collateral generally to be pledged to the lender is to be capitalised as receivable by the borrower under the item Financial assets at amortised cost. The securities are accounted for by the lender, which bears the credit and market risk.

With respect to the refinancing of the loans mandated to it for the energy sector support measures, KfW acts as both borrower and lender in essentially uncollateralised securities lending transactions in dealing with the German Finance Agency, although as a lender it does not recognise the securities. They remain capitalised at the German Finance Agency. KfW recognises the cash collateral received under the item Financial liabilities at amortised cost.

The fee received or paid is recognised in Net interest income.

(15) Government grants

With regard to the pandemic-induced special programmes, KfW funded its activities among other sources via the ECB's TLTRO. It raised EUR 13.4 billion in June 2020 via TLTRO III operation 4, and EUR 1.4 billion in March 2021 via TLTRO III operation 7. The maximum term of TLTRO III transactions is three years. Participants whose eligible net lending in a prescribed reporting period is equal to or higher than their individual benchmark will receive an interest rate reduced by 50 bp (financing of overall -1%) for a specified period.

These additional reduced interest grants are to be accounted for in accordance with the accounting policies of IAS 20 "Accounting for Government Grants and Disclosure of Government Assistance". The negative interest rate benefit made possible by the grant is not to be recognised until there is reasonable assurance that KfW will meet the attached conditions and that the grants will be issued. The bank repaid the TLTRO III operation 4 early, in December 2021, and the TLTRO III operation 7 early, in March 2022. No reduced interest grants in accordance with IAS 20 were received in financial year 2022.

(16) Property, plant and equipment

The land and buildings and the plant and equipment reported by KfW Group are carried at cost less depreciation on a straight-line basis and any impairment, both recognised in Administrative expense. In accordance with the requirements in IAS 36, an impairment is recognised if there are indications of impairment and the carrying amount of the asset exceeds the recoverable amount, i.e. the lower of fair value less costs of disposal and value in use. The useful life is determined based on expected wear and tear. KfW Group assumes an estimated useful life of 40 to 50 years for buildings, four years for workstation computer equipment and five to 15 years for other property, plant and equipment. Gains and losses from the sale of property, plant and equipment are recognised in Net other operating income.

Payments in advance and assets under construction are recognised in Other property, plant and equipment and are not subject to depreciation.

(17) Leases

In accordance with IFRS 16 "Leases", KfW as lessee reports each right of use in Property, plant and equipment and the associated lease obligation in Other liabilities. The lessee shall measure the lease liabilities at the present value of the lease payments not paid at that date, discounted at the lessee's incremental borrowing rate. The incremental borrowing rate is the rate of interest that a lessee would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment. Accordingly, KfW determines the incremental borrowing rate of the basis of the refinancing rate it uses for its own issues.

KfW applies IAS 36 "Impairment of Assets" to rights of use to determine whether the right of use is impaired and to recognise any impairment loss identified. Depreciation, amortisation and impairments of rights of use are reported in Administrative expense. Interest expense from discounting the rights of use and the interest compounded on lease liabilities are included in Other interest expense.

The only minimal effects on net assets, financial and earnings position arise exclusively from the "leasing buildings" class.

For short-term leases with a maximum term of 12 months and leases in which the underlying asset is of low value, KfW utilises the relief provided for in IFRS 16.5 and does not recognise a right of use.

The small number of contracts in which KfW Group acts as a lessor are classified as operating leases. The leased asset is recognised under Property, plant and equipment and the corresponding rental income in Other operating income.

(18) Intangible assets

Under Intangible assets, KfW Group reports purchased and internally generated software at cost, less straight-line amortisation and impairments, both recognised in Administrative expense. The useful life is determined based on expected wear and tear. KfW Group assumes a useful life of five years.

Assets are impaired when the carrying amount of an asset exceeds the recoverable amount. An impairment is recorded when no future economic benefits can be identified.

Internally generated software under development is reported under Other intangible assets and is not subject to amortisation.

(19) Risk provisions

Provisions include provisions for pensions and similar commitments, credit risks, interest rate reductions in irrevocable loan commitments granted by KfW in the promotional lending business and negatively impacting its earnings position, as well as other obligations of uncertain amount and timing involving a probable outflow of funds.

The employees of KfW Group participate in a company pension plan that pays retirement, long-term disability and survivor benefits. KfW Group has various pension plans, consisting exclusively of defined-benefit schemes. The benefits largely depend on the length of company service and salary. The pension plan that was applied for new hires until 1985 offered a full pension (*Gesamtversorgung*), in which a certain portion of the income paid before the benefits were due was allocated as a benefit after deducting the state pension. Apart from employer-financed pension plans there are also plans in place involving contributions by employees.

KfW Group pension plans are subject to the following risks in particular: longevity, interest rate fluctuation, pension adjustment risk as well as the risk of future changes to the assessment bases.

Longevity risk is the risk that higher expenses will be incurred for the company pension plan if the pensioners live longer than projected. In general, this risk is balanced out across all pensioners and would only have an impact if life expectancy were to rise faster in the future than anticipated.

Due to the long term of the company pension plan, provisions for pension obligations are subject to general interest rate fluctuation risks.

Pension adjustment risk largely relates to the pension plan offering a full pension (*Gesamtversorgung*). In this scheme, benefits are recalculated as soon as there is a change in the base income eligible for pension or the state pension to be offset. Another pension plan must be examined regularly in terms of forecast and actual pension adjustments, undertaking such adjustments if necessary.

The amount of the benefits promised under the existing pension plans at KfW Group depends, among other things, on development of the income eligible for benefits and the social security contribution ceiling (*Beitragsbemessungsgrenze*). There is a risk that the basis of assessment will develop differently than was assumed.

Pension obligations are calculated by an independent qualified actuary in accordance with the projected unit credit method on the basis of group-wide uniform parameters such as age, length of company service and salary. The pension provision is recognised at the present value of the defined-benefit obligations as of the reporting date. The discount factor is based on current market conditions for a portfolio of high quality corporate bonds/bonds from supranational issuers with a maturity matching that of the obligations. The definition of the portfolio takes into account current market conditions. Additional demographic factors (including the 2018 G Heubeck actuarial tables) and actuarial assumptions (rate of salary and pension increases, rate of staff turnover, etc.) are taken into account.

No plan assets were defined for the pension obligations of KfW Group, so the related special accounting rules do not apply. Provisions for pensions and similar obligations are financed in-house with sufficient assets with corresponding maturities.

Actuarial gains and losses are immediately recognised at the time they occur. They occur as a result of remeasurement of pension obligations as of the reporting date compared to the figures forecast at the beginning of the year.

Additions to pension provisions distinguish between service cost and interest expense. Service cost is reported under Administrative expense; interest expense is reported under Other interest expense. The pension provision changes recognised directly in equity comprise the actuarial gains and losses reported in Revaluation reserves; these are reported in Other comprehensive income.

Pension-like obligations include commitments for deferred compensation, early retirement and partial retirement. Actuarial reports are prepared and a provision is recognised accordingly for these types of commitments as well. No actuarial gains or losses are incurred.

Other provisions, including those for obligations to employees and for audit and consultancy services, are recognised at the estimated expenditure. Long-term provisions are discounted where the effect is material. Added to this are obligations arising from the assumption of the tasks of the State Insurance Company of the German Democratic Republic in liquidation (*Staatliche Versicherung der Deutschen Demokratischen Republik in Abwicklung – “SinA”* institution under public law), which are offset by receivables in the same amount from the Federal Agency for Special Tasks Associated with Unification (*Bundesanstalt für vereinigungsbedingte Sonderaufgaben – “BvS”*) reported under Other assets. If the provision is not required in full or if the reason for creating the provision no longer applies, the provision is reversed via the same income statement item that was used in creating the provision.

(20) Income tax assets and liabilities

Income taxes are accounted for and measured in accordance with IAS 12. Current and deferred income tax assets are reported in the item Income tax assets; current and deferred income tax liabilities under Income tax liabilities. Current income tax assets and liabilities are recognised in the amount expected to be returned or paid in the future.

The tax rates applicable are those in effect on the reporting date or those that can be assumed with sufficient certainty to be in effect on the reporting date. KfW itself is exempt from income taxes pursuant to Section 5 (1) no. 2 of the German Corporation Tax Act (*Körperschaftsteuergesetz – KStG*) and Section 3 no. 2 of the German Trade Tax Act (*Gewerbesteuergesetz – GewStG*).

Deferred income tax assets and liabilities are generally recognised on temporary differences between the carrying amounts of assets and liabilities in accordance with IFRS and the corresponding tax value. Deferred tax assets are only recognised for temporary differences from items and for unused tax loss carryforwards if their realisation is sufficiently probable; the impairment test is carried out on the basis of group business sector planning for each group company. Deferred taxes are measured at the tax rates that have been set at the respective reporting date and that are relevant to the timing of realisation of the deferred taxes. Deferred income tax assets and liabilities are offset on the assumption that they relate to the same taxable entity, the same tax type and the same tax authority.

If temporary differences have arisen from transactions recognised directly in equity, the resulting deferred income tax assets and liabilities are also recognised directly in equity. Income from and expenses for current and deferred income taxes is recognised in the income statement under Income taxes.

(21) Equity

The equity structure is determined, in particular, by the KfW Law and the requirements of IFRS.

Pursuant to Article 10 (2) and (3) of the KfW Law, KfW's net income for the period determined in accordance with the German Commercial Code is transferred to reserves and is included in equity under IFRS.

KfW Group reports a fund for general banking risks in equity. Additions to or reductions of the fund are presented in accordance with IFRS as an addition to or reduction of retained earnings.

Under IFRS, any remaining consolidated net income is allocated to Other retained earnings in the same period.

Revaluation reserves comprise transactions to be recognised directly in equity in accordance with IFRS. These include valuation results from the change in own credit risk of liabilities measured at fair value through profit or loss and from defined benefit pension obligations. They also may include deferred taxes, depending on the underlying transaction.

(22) Trust activities

Assets and liabilities held by KfW Group in its own name but for the account of third parties are not recognised if the trustor retains all risks and opportunities. At KfW, this applies in particular to loans and equity investments made by KfW on behalf of the Federal Government. Both opportunities and risks remain with the Federal Government in such transactions.

Fees from trust activities are recognised under Commission income.

Further information can be found in the note "Financial instruments" in section "A. Classification and measurement" in the comments on mandated transactions.

Notes to the statement of comprehensive income

(23) Net interest income Analysis of Net interest income

	2022 EUR in millions	2021 EUR in millions
Interest and similar income from loans and advances to banks and customers	4,620	4,092
Similar income from off-balance sheet transactions	33	25
Interest income from securities and investments	113	58
Interest income from hedges recognised in the statement of financial position	-1,763	-3,350
Other interest income	63	-210
Interest income from the effective interest method	3,065	615
Interest and similar income from loans and advances to banks and customers	2	-40
Interest income from securities and investments	87	73
Interest income from Other derivatives	632	412
Other interest income	721	446
Interest income, total	3,786	1,061
Interest and similar expense for liabilities to banks and customers	120	-200
Interest expense for certificated liabilities	4,194	3,652
Interest expense from hedges recognised in the statement of financial position	-2,935	-4,761
Interest expense from Other derivatives	-65	-180
Other interest expense	323	164
Interest expense, total	1,638	-1,325
Net interest income	2,148	2,386

Expenses for granting promotional loans below market rates – due to additional promotional funds in the form of interest rate reductions with an impact on KfW's earnings position – amount to EUR 267 million (2021: EUR 144 million) and are reported in Other interest expense. In addition to the charges resulting from the present value of the nominal scheduled interest rate reductions in new lending business, the Other interest expense item also comprises the expenses arising from amortisation at a constant effective interest rate. Interest and similar income from loans and advances to banks and customers also comprises income from accrual-based amortisation in the amount of the pro-rata nominal planned interest rate reductions for these promotional loans of EUR 186 million (2021: EUR 200 million).

Interest income from stage 3 loan receivables in an amount of EUR 36 million (2021: EUR 33 million) is reported under Interest and similar income from loans and advances to banks and customers.

Interest income from hedges recognised in the statement of financial position comprises interest income from derivatives designated for hedge accounting as well as interest income from amortisation of value adjustments from hedge accounting. Interest income or interest expense from derivatives designated for hedge accounting is recognised depending on the related hedged item in the interest income or interest expense from hedges recognised in the statement of financial position for related financial assets or liabilities.

The group generated an atypical interest expense from liability hedges (floating rate liabilities) in financial year 2021, largely comprising certificated liabilities with corresponding swap transactions. This atypical interest expense was not allocated to the negative interest to be separately reported, as the hedged item contributes a typical interest expense. Due to the low interest rate environment at that time, the interest expense of the hedged items was overcompensated by the interest income from the corresponding hedging instruments, resulting in the total interest expense for financial year 2021 having been atypical. Negative interest income and interest expense declined sharply in financial year 2022 due to the ECB's key rate hikes.

Including the interest income or expense from the hedged items and derivatives in hedge accounting means that the presentation is based on the economic substance of the hedged financial assets (floating rate financial assets) or hedged financial liabilities (floating rate financial liabilities).

Gross analysis of negative interest contributions

	2022	2021
	EUR in millions	EUR in millions
Interest income, total	3,786	1,061
Negative interest from the lending business	203	360
Interest income from the deposit-taking business	418	647
Interest income (gross)	4,408	2,067
Interest expense, total	1,638	-1,325
Negative interest from the deposit-taking business	418	647
Interest expense from the lending business	203	360
Interest expense (gross)	2,259	-319

The negative interest contributions included in Interest income resulted from balances with central banks, loans and advances to banks and loans and advances to customers, and securities and investments.

The positive interest contributions in Interest expense are largely due to liabilities to banks and liabilities to customers and certificated liabilities.

(24) Net gains/losses from risk provisions
Analysis of Risk provisions by transaction

	2022	2021
	EUR in millions	EUR in millions
Expenses for risk provisions for lending business (Loans and advances to banks/customers and off-balance sheet lending transactions)	1,193	898
Expenses for additions to risk provisions	1,163	865
Direct write-offs	30	33
Expenses for risk provisions for securities and investments	10	12
Expenses for additions to risk provisions	10	12
Expenses for risk provisions	1,203	910
Income from risk provisions for lending business (Loans and advances to banks/customers and off-balance sheet lending transactions)	1,078	1,143
Income from the reversal of risk provisions	1,016	1,060
Income from recoveries of amounts previously written off	62	83
Income from risk provisions for securities and investments	9	13
Income from the reversal of risk provisions	9	13
Income from risk provisions	1,086	1,155
Net gains/losses from non-substantial contractual modifications	2	-22
Other risk provisions for lending business	-10	-27
Total	-124	196

(25) Net commission income
Analysis of Commission income

	2022	2021
	EUR in millions	EUR in millions
Revenue from contracts with customers	639	637
From mandate contractual arrangements with the Federal Government ¹⁾	584	582
Fee income from mandate agreements, processing activities and services	17	16
Fee income from the lending business	38	39
Other commission income	9	10
Financial guarantee contracts	0	0
Other	9	10
Commission income, total	649	647

¹⁾ Includes commission income in an amount of EUR 69 million (2021: EUR 74 million) from mandate contractual arrangements with the Federal Government in trust activities.

Commission income by segment in financial year 2022

	Mittelstandsbank & Private Kunden (SME Bank & Private Clients)	Individualfinanzierung & Öffentliche Kunden (Customised Finance & Public Clients)	KfW Capital	Export and project finance
2022	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Commission income	308	43	4	30
of which Federal Government	305	38	4	0
%	99%	89%	100%	0%

	KfW Development Bank	DEG	Financial markets	Head office	KfW Group
2022	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Commission income	249	10	0	4	649
of which Federal Government	231	2	0	3	584
%	93%	26%	0%	72%	90%

Commission income by segment in financial year 2021

	Mittelstandsbank & Private Kunden (SME Bank & Private Clients)	Individualfinanzierung & Öffentliche Kunden (Customised Finance & Public Clients)	KfW Capital	Export and project finance
2021	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Commission income	310	36	6	33
of which Federal Government	307	33	6	0
%	99%	92%	100%	0%

	KfW Development Bank ¹⁾	DEG ¹⁾	Financial markets	Head office	KfW Group
2021	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Commission income	245	14	0	3	647
of which Federal Government	229	7	0	0	582
%	94%	47%	0%	0%	90%

¹⁾ As of financial year 2022, the former business sector Promotion of developing countries and emerging economies has been divided into the two separate segments of KfW Development Bank and Deutsche Investitions- und Entwicklungsgesellschaft mbH (DEG); see Note 33.

Out-of-period income

	2022 EUR in millions	2021 EUR in millions
Revenue in current period resulting from services performed in the previous period(s)	31	31

Analysis of Commission expense

	2022 EUR in millions	2021 EUR in millions
Commission expense for lending business	10	10
Other commission expense	22	14
Commission expense	32	24

(26) Net gains/losses from hedge accounting

Analysis of Net gains/losses from hedge accounting by type of hedging relationship

	Hedge ineffectiveness		Items in the income statement that contain cases of hedge ineffectiveness
	2022 EUR in millions	2021 EUR in millions	
Micro fair value hedges	18	-5	Net gains/losses from hedge accounting
Interest risk	29	14	-
Interest-currency risk	-11	-19	-
Macro fair value hedges	131	-105	Net gains/losses from hedge accounting
Interest risk	131	-105	-
Total	150	-110	Net gains/losses from hedge accounting

Analysis of Net gains/losses from micro fair value hedge accounting by hedged item

	2022 EUR in millions	2021 EUR in millions
Hedging of securities and investments	-1	4
Hedging of liabilities to banks and customers	2	-1
Hedging of certificated liabilities	17	-8
Subtotal: Effectiveness of hedges	18	-5
Amortisation of value adjustments	0	0
Total	18	-5

Gross analysis of valuation gains/losses from micro fair value hedge accounting: Comparison of hedged items and hedging instruments in financial year 2022

	Hedged items EUR in millions	Hedging instruments EUR in millions	Effectiveness of hedges EUR in millions
Hedging of securities and investments	-2,550	2,550	-1
Hedging of liabilities to banks and customers	2,195	-2,193	2
Hedging of certificated liabilities	30,856	-30,839	17
Total	30,501	-30,482	18

Gross analysis of valuation gains/losses from micro fair value hedge accounting: Comparison of hedged items and hedging instruments in financial year 2021

	Hedged items EUR in millions	Hedging instruments EUR in millions	Effectiveness of hedges EUR in millions
Hedging of securities and investments	-510	514	4
Hedging of liabilities to banks and customers	481	-482	-1
Hedging of certificated liabilities	8,628	-8,637	-8
Total	8,600	-8,605	-5

**Gross analysis of net gains/losses from macro fair value hedge accounting:
Comparison of hedged items and hedging instruments in financial year 2022**

	Hedged items	Hedging instruments	Effectiveness of hedges
	EUR in millions	EUR in millions	EUR in millions
Valuation result	-32,696	31,555	-1,142
Amortisation	2,290	-1,050	1,241
Realisation	32	0	32
Net gains/losses from macro fair value hedge accounting	-30,374	30,505	131

**Gross analysis of net gains/losses from macro fair value hedge accounting:
Comparison of hedged items and hedging instruments in financial year 2021**

	Hedged items	Hedging instruments	Effectiveness of hedges
	EUR in millions	EUR in millions	EUR in millions
Valuation result	-5,580	5,614	34
Amortisation	-1,701	1,693	-8
Realisation	-131	0	-131
Net gains/losses from macro fair value hedge accounting	-7,412	7,307	-105

Net gains/losses from macro fair value hedge accounting comprise the valuation of hedging instruments and the valuation of hedged risks from the hedged portfolios. It also includes the amortisation of the value adjustments from the dynamic hedge designation and de-designation and the pro rata reversal of value adjustments in the event of derecognition of financial instruments from the underlying portfolios as well as the pull-to-par effect of the hedging derivatives.

(27) Net gains/losses from other financial instruments at fair value through profit or loss
Analysis of Net gains/losses from other financial instruments at fair value through profit or loss

	2022	2021
	EUR in millions	EUR in millions
Loans and advances to banks/customers	-10	28
Loans and advances	3	28
Miscellaneous receivables (money market transactions, promissory note loans and Other receivables)	-13	0
Securities and investments	-46	611
Bonds and other fixed-income securities	0	0
Shares and other non-fixed income securities	0	0
Equity investments	-46	612 ¹⁾
Liabilities to banks and customers	257	78
Certificated liabilities	1,593	536
Other derivatives	-1,820	-620
Financial derivatives not qualifying for hedge accounting	-1,820	-620
Foreign currency translation	91	133 ¹⁾
Total	64	767

¹⁾ The foreign currency result from the equity investments of DEG of EUR 140 million was recorded in Net gains/losses from securities and investments (equity investments) in the previous year. As of financial year 2022, it will be recognised in the result from foreign currency translation.

Net gains/losses from assets include the net gains/losses from holding arrangements for the Federal Republic of Germany – if attributable to KfW, KfW IPEX-Bank's syndication business with a focus on short-term placement, loans that do not meet the SPPI criterion (loans and advances to banks and loans and advances to customers), and equity investments (securities and investments).

The gains realised from the disposal of non-current assets held for sale included in net gains/losses from securities and investments amounted to EUR 11 million in financial year 2022 (2021: EUR 1 million).

Net gains/losses from liabilities measured at fair value include the results from promissory note loans (liabilities to banks/liabilities to customers) and bonds and notes (certificated liabilities).

Net gains/losses from financial derivatives not qualifying for hedge accounting are mainly attributable to derivatives in economic hedges. Economic hedges are recognised by exercising the fair value option for the hedged items. The hedged items include, in particular, borrowings in the form of Certificated liabilities, Liabilities to banks and Liabilities to customers.

Furthermore, this line item includes gains/losses from bifurcated embedded derivatives resulting from hybrid contracts under financial liabilities. The net gains/losses from the valuation of the associated hedging derivatives are thus compensated for.

**Gross analysis of results from economically hedged borrowings:
Comparison of hedged items and hedging instruments**

	2022	2021
	EUR in millions	EUR in millions
Borrowings	1,850	614
Hedging instruments	-1,826	-716
Total (effectiveness of economic hedges)	24	-102

(28) Net gains/losses from disposal of financial assets at amortised cost

	2022	2021
	EUR in millions	EUR in millions
Expense from the disposal of financial assets at amortised cost	1	4
Total	-1	-4

Income and expense from the disposal of financial assets at amortised cost resulted from the sale of loans on the secondary market.

(29) Net gains/losses from investments accounted for using the equity method

	2022	2021
	EUR in millions	EUR in millions
Net gains/losses from investments accounted for using the equity method	43	14

(30) Administrative expense
Analysis of Administrative expense

	2022	2021
	EUR in millions	EUR in millions
Wages and salaries	700	657
Social security contributions	99	98
Expenses for pension provision and other employee benefits	88	88
Personnel expense	887	842
Other administrative expenses	521	499
Depreciation, amortisation and impairment of property, plant and equipment and intangible assets	117	125
<i>of which impairments of rights of use arising from leases</i>	<i>10</i>	<i>10</i>
Non-personnel expense	638	624
Total	1,525	1,466

(31) Net other operating income or loss
Analysis of Net other operating income or loss

	2022	2021
	EUR in millions	EUR in millions
Other operating income	41	34
Other operating expense	50	86
Total	-8	-53

Other operating income primarily includes income from the reversal of other provisions in an amount of EUR 17 million (2021: EUR 12 million).

The Other operating expense item includes contributions payable by KfW IPEX-Bank to the restructuring fund for banks in an amount of EUR 21 million (2021: EUR 14 million). KfW is not obligated to contribute to the fund in accordance with Section 2 of the Restructuring Fund Act (*Restrukturierungsfondsgesetz – "RStrukFG"*).

(32) Taxes on income

Analysis of Taxes on income by component

	2022	2021
	EUR in millions	EUR in millions
Current taxes on income	46	49
Deferred taxes	–47	88
Total	–1	137

Current taxes include taxes on income for group companies and non-deductible investment income tax recorded at KfW level.

The reconciliation presents the relationship between the calculated income tax expense for the financial year and reported taxes on income.

Income tax reconciliation

	2022	2021
	EUR in millions	EUR in millions
Profit/loss from operating activities (before taxes)	1,365	2,353
Group income tax rate	0%	0%
Calculated income tax expense in the financial year	0	0
Effects of tax rate differentials within the group	244	129
Effect of tax rate changes	0	0
Effects of previous year taxes recorded in the reporting year	1	6
Effects of non-deductible taxes on income	2	2
Effects of non-deductible business expenses	5	4
Effects of tax-free income	–20	–67
Trade tax add-ons/reductions	4	1
Permanent accounting differences	–113	111
Effects of changes in recognised deferred tax assets	–124	–49
Reported taxes on income	–1	137

KfW's applicable income tax rate of 0%, on which the reconciliation is based, takes into account the tax status of KfW as a non-taxable public-law institution and the fact that this status predominantly determines profit/loss from operating activities.

The effects of tax rate differentials result from individual group companies being taxable and the related different tax rates. The tax rates continue to range from 0% to 32%.

Segment reporting

(33) Segment reporting by business sector

In accordance with the provisions of IFRS 8, segment reporting follows the internal management reporting system, which is used by the group's main decision-makers to assess each segment's performance and to allocate resources to segments.

As of financial year 2022, the former business sector Promotion of developing countries and emerging economies has been divided into the segments it was previously comprised of, but that now report separately: KfW Development Bank and Deutsche Investitions- und Entwicklungsgesellschaft mbH (DEG). Presentation in the segment report therefore follows the new structure as of 2022 in the internal management reporting system. The corresponding prior-year figures for 2021 were adjusted to reflect the new structure.

In accordance with the business sector structure for KfW Group, the segments and their products and services can now be presented as follows:

Mittelstandsbank & Private Kunden (SME Bank & Private Clients)	– Start-up financing – Financing of general corporate investments and investments in innovation, energy and environmental protection – Education financing – Financing for housing construction, conversion and refurbishment
Individualfinanzierung & Öffentliche Kunden (Customised Finance & Public Clients)	– Financing of municipal and social infrastructure – Customised corporate financing with equity and debt capital – Customised financing of banks and promotional institutions of the federal states – Mandated transactions for energy supply
KfW Capital	– Investments in German and European venture capital and venture debt funds
Export and project finance	– Financing of German and European export activities – Financing of projects and investments which are of special interest for Germany and Europe
KfW Development Bank	– Promotion of developing countries and emerging economies on behalf of the Federal Government with budget funds and complementary market funds raised by KfW
DEG	– Financing provided by DEG – Deutsche Investitions- und Entwicklungs- gesellschaft mbH in developing countries and emerging economies (private enterprise financing)
Financial markets	– Securities and money market investments – Holding arrangements for the Federal Republic of Germany – Transactions mandated by the Federal Government, loan granted to Greece – Funding
Head office	– Central interest rate and currency management – Strategic equity investments

The business sectors are measured on the basis of their contribution to consolidated profit. The individual line items are based on the following methods:

- Net interest income (before promotional expense) comprises the net interest generated from lending business calculated on the basis of the market interest rate method¹⁾. The item also includes the imputed return on equity allocated according to the business sectors' planned regulatory capital. Head office also includes the treasury result, which largely comprises the income/loss from interest rate and spread management. The profit contribution from KfW funding²⁾ is allocated to the Financial markets business sector.

¹⁾Funding at matching maturities using KfW's internal refinancing curve is assumed for the calculation of net interest income in this method.

²⁾ The difference between the realised refinancing rates and the maturity-matched refinancing rates, calculated in-house.

- Promotional expense included in Interest, Commission and Administrative expense and Other operating expense in the income statement is reported separately pursuant to the internal management report due to the special relevance of promotional expense as a management variable.

Promotional expense is understood to mean certain expenses from the two business sectors *Mittelstandsbank & Private Kunden (SME Bank & Private Clients)* and *Individualfinanzierung & Öffentliche Kunden (Customised Finance & Public Clients)* that have a positive impact on the achievement of KfW's promotional objectives. Promotional expense primarily consists of additions of the interest rate reductions accounted for at present value³⁾ from new commitments as well as from the compounding effect. Additional promotional components are the expenses for upfront fees paid to sales partners for the processing of small and micro loans (included in Commission expense), for innovative digital promotional approaches (included in Commission and Administrative expense), for available and product-related marketing and sales measures (included in Administrative expense), and for promotional grants awarded as a supplement to the lending business (included in Other operating expense).

- The allocation of Administrative expense (before promotional expense) is based on the results from activity-based accounting by cost centres⁴⁾. Administrative expense (before promotional expense) includes depreciation on property, plant and equipment and amortisation of intangible assets.
- In the Risk provisions for lending business item, net impairment charges, direct write-offs, recoveries on loans written off and the net gains/losses from non-substantial contractual modifications are distributed among the segments according to the underlying loan.
- The valuation result (before promotional expense) comprises the net gains/losses from hedge accounting, the net gains/losses from other financial instruments at fair value, net gains/losses from risk provisions in the securities business, the net gains/losses from the disposal of financial instruments measured at amortised cost, the net gains/losses from investments accounted for using the equity method and net other operating income (before promotional expense).
- When taxes on income are allocated to the business sectors (excluding the Head office), only the current taxes on income are taken into account. Deferred taxes are allocated to the Head office.
- In accordance with the internal management reporting system, segment assets are not reported as they are used neither to assess each segment's performance nor to allocate resources to segments.
- The presentation of segment income and expense is based on consolidated figures. Administrative and commission expense as well as commission income and other operating income resulting from service relationships within KfW Group are adjusted in segment reporting. Any remaining negligible consolidation effects are reported in the reconciliation/consolidation column.

³⁾ See Note 11 for details of KfW's interest rate reductions in the promotional lending business.

⁴⁾ The costs incurred in the organisational units are largely allocated to the products by means of core services.

Segment reporting by business sector for financial year 2022

	Mittelstandsbank & Private Kunden (SME Bank & Private Clients)	Individualfinanzierung & Öffentliche Kunden ¹⁾ (Customised Finance & Public Clients)	KfW Capital ¹⁾	Export and project finance ¹⁾	KfW Development Bank ¹⁾
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Volume of new commitments	64,839	69,970	1,259	18,120	10,931
Net interest income (before promotional expense)	465	165	0	781	175
Net commission income (before promotional expense)	307	42	1	30	249
Administrative expense (before promotional expense)	432	84	15	282	403
Operating result before valuation (before promotional expense)	340	124	-14	529	21
Risk provisions for lending business	-37	2	0	24	-4
Valuation result (before promotional expense)	0	40	34	52	-59
Profit/loss from operating activities (before promotional expense)	303	166	20	605	-43
Promotional expense	278	27	0	0	0
Taxes on income	0	0	0	28	0
Consolidated profit	25	139	20	578	-43

	DEG	Financial markets	Head office	Reconciliation/ consolidation	KfW Group
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Volume of new commitments	1,644	415	0	-241	166,938
Net interest income (before promotional expense)	242	497	90	0	2,416
Net commission income (before promotional expense)	-1	-4	4	0	629
Administrative expense (before promotional expense)	139	97	57	0	1,509
Operating result before valuation (before promotional expense)	103	396	37	0	1,536
Risk provisions for lending business	-113	5	2	0	-122
Valuation result (before promotional expense)	26	8	156	-1	256
Profit/loss from operating activities (before promotional expense)	16	409	195	-1	1,669
Promotional expense	0	0	0	0	305
Taxes on income	16	0	-44	0	-1
Consolidated profit	0	409	239	-1	1,365

¹⁾ The valuation result of the business sectors includes the following net gains/losses from investments accounted for using the equity method:
KfW Capital EUR 6.6 million, Export and project finance EUR 36.4 million and KfW Development Bank EUR 0.3 million.

Segment reporting by business sector for financial year 2021

	Mittelstandsbank & Private Kunden (SME Bank & Private Clients)	Individualfinanzierung & Öffentliche Kunden ¹⁾ (Customised Finance & Public Clients)	KfW Capital ¹⁾	Export and project finance ¹⁾	KfW Development Bank ¹⁾
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Volume of new commitments	72,980	9,465	502	13,644	8,611
Net interest income (before promotional expense)	463	107	0	797	173
Net commission income (before promotional expense)	309	35	6	33	245
Administrative expense (before promotional expense)	430	77	11	289	365
Operating result before valuation (before promotional expense)	342	65	-6	540	53
Risk provisions for lending business	-2	5	0	94	35
Valuation result (before promotional expense)	1	63	211	29	30
Profit/loss from operating activities (before promotional expense)	341	133	205	663	118
Promotional expense	182	6	0	0	0
Taxes on income	0	0	0	40	0
Consolidated profit	159	127	205	622	118

	DEG	Financial markets	Head office	Reconciliation/ consolidation	KfW Group
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Volume of new commitments	1,534	527	0	-212	107,050
Net interest income (before promotional expense)	240	347	405	0	2,531
Net commission income (before promotional expense)	8	-4	2	0	634
Administrative expense (before promotional expense)	132	97	50	0	1,452
Operating result before valuation (before promotional expense)	117	246	357	0	1,712
Risk provisions for lending business	67	-4	0	0	196
Valuation result (before promotional expense)	440	21	-163	0	633
Profit/loss from operating activities (before promotional expense)	624	263	194	-1	2,541
Promotional expense	0	0	0	0	188
Taxes on income	5	0	92	0	137
Consolidated profit	619	263	102	-1	2,215

¹⁾ The valuation result of the business sectors includes the following net gains/losses from investments accounted for using the equity method:
KfW Capital EUR 16.4 million, Export and project finance EUR 8.3 million and KfW Development Bank EUR 6.1 million.

The reconciliation/consolidation column includes all adjustments that were necessary to reconcile segment information with the aggregated information for KfW Group. The consolidation effects reported for "Volume of new commitments" relate to commitments for programme loans made by Mittelstandsbank & Private Kunden (*SME Bank & Private Clients*) and Individualfinanzierung & Öffentliche Kunden (*Customised Finance & Public Clients*) for which KfW IPEX-Bank acts as on-lending bank. The other amounts in this column result from minimal consolidation effects.

(34) Segment reporting by region

Net interest and commission income are allocated on the basis of the customers' geographical location. The imputed return on equity included in net interest income, the profit contribution from KfW funding and the treasury result are allocated to Germany. KfW receives commission income from the Federal Government for supporting developing countries and emerging economies using budget funds of the Federal Government. These funds are allocated according to the region of the country receiving the investment.

Property, plant and equipment and intangible assets are not reported according to region because, apart from immaterial amounts, these assets relate to Germany.

Segment reporting by region for financial year 2022

	Germany	Europe (excl. Germany)	Rest of the world	Reconciliation/ consolidation	KfW Group
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Net interest income	1,078	427	644	0	2,148
Net commission income	349	39	229	0	617
Segment income	1,427	465	873	0	2,766

Segment reporting by region for financial year 2021

	Germany	Europe (excl. Germany)	Rest of the world	Reconciliation/ consolidation	KfW Group
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Net interest income	1,343	423	620	0	2,386
Net commission income	343	32	247	0	623
Segment income	1,687	455	867	0	3,009

The reconciliation/consolidation column includes all adjustments that were necessary to reconcile segment information with the aggregated information for KfW Group. The amounts in this column result solely from minimal consolidation effects.

Notes to the statement of financial position

(35) Cash reserves

Analysis of Cash reserves

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Cash	0	0
Balances with central banks	51,848	42,439
Total	51,848	42,439

(36) Financial assets at amortised cost

Analysis of Financial assets at amortised cost by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Loans and advances to banks		
Money market transactions	5,211	5,510
Loans and advances	304,194	301,759
Promissory note loans	0	22
Other receivables	4,762	1,197
Loans and advances to customers		
Money market transactions	406	0
Loans and advances	151,780	129,278
Promissory note loans	1,018	1,205
Other receivables	1,273	420
Securities and investments		
Bonds and other fixed-income securities	33,733	35,784
Total gross	502,378	475,175
Less risk provisions for		
Loans and advances to banks	-248	-238
Loans and advances to customers	-1,853	-1,705
Securities and investments	-12	-10
Total net	500,265	473,221

The receivables from reverse repurchase agreements (reverse “repos”) and cash collateral pledged are included in Loans and advances to the banks – Other receivables.

Cash collateral provided in an amount of EUR 5,154 million (2021: EUR 829 million) is allocated to cash collateral against derivatives.

Receivables from securities lending transactions with the German Finance Agency are included in Loans and advances to customers – Other receivables.

Analysis of Loans and advances by underwriting liability type

	Loans and advances to banks		Loans and advances to customers	
	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Direct loans	70,173	73,170	141,272	118,608
On-lent customer loans with full underwriting borne by the on-lending commercial bank	208,729	201,027	0	0
On-lent customer loans with partial underwriting borne by the on-lending commercial bank	25,617	27,894	0	0
On-lent customer loans without underwriting borne by the on-lending commercial bank	0	0	8,137	8,205
Customer loans on-lent through insurance companies with full underwriting borne by the on-lending insurance company	0	0	1,218	1,210
Direct and on-lent subordinated loans	318	279	1,191	1,287
Adjustment to the carrying amount due to the interest rate being below the market rate for promotional loans paid out with additional promotional funds in the form of interest rate reductions with an impact on KfW's earnings position.	-644	-610	-39	-32
Total	304,194	301,759	151,780	129,278

Direct loans to banks include in particular global loans granted as part of financing for domestic housing construction and SMEs.

Direct loans to customers include in particular loans granted under export and project financing, municipal financing and education financing. The item also includes loans connected with certain transactions mandated by the Federal Government in accordance with the KfW Law.

(37) Gross carrying amounts

Development of gross carrying amounts of financial assets at amortised cost – Loans and advances to banks

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	305,962	1,880	648	308,489	294,009	1,522	235	295,766
Transfer from stage 2 and stage 3 to stage 1	451	–451	0	0	544	–544	0	0
Transfer from stage 1 and stage 3 to stage 2	–1,863	1,872	–9	0	–843	849	–5	0
Transfer from stage 1 and stage 2 to stage 3	–646	–48	694	0	–464	–72	536	0
Additions – New business and increased utilisation	83,945	234	22	84,202	101,850	397	23	102,270
Disposals	–77,402	–654	–411	–78,466	–90,135	–281	–168	–90,584
<i>of which financial assets written off</i>	–77,402	–654	–403	–78,459	–90,135	–281	–160	–90,576
<i>of which default on receivables</i>	0	0	–7	–7	0	0	–8	–8
Changes from non-substantial contractual modification	0	0	0	0	–13	0	2	–11
Exchange rate and other changes	–133	2	75	–57	1,013	8	26	1,047
As of 31 Dec.	310,314	2,836	1,018	314,168	305,962	1,880	648	308,489

Development of gross carrying amounts of financial assets at amortised cost – Loans and advances to customers

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	101,598	24,773	4,531	130,902	100,069	12,474	18,656	131,199
Transfer from stage 2 and stage 3 to stage 1	19,351	–19,351	0	0	2,041	–2,015	–26	0
Transfer from stage 1 and stage 3 to stage 2	–4,372	4,651	–279	0	–5,123	19,969	–14,846 ¹⁾	0
Transfer from stage 1 and stage 2 to stage 3	–2,175	–310	2,485	0	–953	–813	1,766	0
Additions – New business and increased utilisation	54,423	415	380	55,218	26,151	714	117	26,982
Disposals	–30,847	–1,921	–2,320	–35,087	–22,383	–6,070	–1,253	–29,707
<i>of which financial assets written off</i>	<i>–30,842</i>	<i>–1,920</i>	<i>–2,243</i>	<i>–35,006</i>	<i>–22,379</i>	<i>–6,070</i>	<i>–1,123</i>	<i>–29,571</i>
<i>of which default on receivables</i>	<i>–5</i>	<i>0</i>	<i>–77</i>	<i>–82</i>	<i>–4</i>	<i>–1</i>	<i>–131</i>	<i>–136</i>
Changes from non-substantial contractual modification	0	1	1	3	0	–13	0	–13
Exchange rate and other changes	2,333	568	541	3,442	1,796	528	116	2,440
As of 31 Dec.	140,311	8,827	5,339	154,478	101,598	24,773	4,531	130,902

¹⁾ The transfer from stage 3 to stage 2 is primarily due to a loan guaranteed by the Federal Government.

Development of gross carrying amounts of financial assets at amortised cost – Securities and investments

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	35,784	0	0	35,784	35,725	0	65	35,790
Transfer from stage 1 and stage 3 to stage 2	–8	8	0	0	0	0	0	0
Additions – New business and increased utilisation	26,530	0	0	26,530	23,330	0	0	23,330
Disposals	–25,914	–1	0	–25,915	–22,866	0	–65	–22,931
<i>of which financial assets written off</i>	<i>–25,914</i>	<i>–1</i>	<i>0</i>	<i>–25,915</i>	<i>–22,866</i>	<i>0</i>	<i>–65</i>	<i>–22,931</i>
Exchange rate and other changes	–2,666	0	0	–2,666	–405	0	0	–406
As of 31 Dec.	33,725	8	0	33,733	35,784	0	0	35,784

Development of gross carrying amounts of off-balance sheet lending transactions

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	109,184	4,725	312	114,220	102,790	5,103	257	108,151
Transfer from stage 2 and stage 3 to stage 1	86	–86	0	0	253	–225	–28	0
Transfer from stage 1 and stage 3 to stage 2	–218	218	0	0	–86	86	0	0
Transfer from stage 1 and stage 2 to stage 3	–15	–168	183	0	–19	–35	53	0
Additions – New business and increased utilisation	67,791	336	156	68,283	1,233	51	3	1,287
Disposals	–47,237	–2,239	–116	–49,592	–718	–120	–18	–857
Exchange rate and other changes	104	–9	–3	91	5,730	–136	45	5,640
As of 31 Dec.	129,693	2,777	532	133,002	109,184	4,725	312	114,220

The gross carrying amount of financial assets for which risk provisioning at the time of modification was assigned to stages 2 or 3 and was transferred back to stage 1 during the reporting period amounted to EUR 3,639 million as of the reporting date (31 Dec. 2021: EUR 253 million).

(38) Risk provisions

Development of risk provisions for financial assets at amortised cost – Loans and advances to banks

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	104	33	101	238	143	95	68	306
Transfer from stage 2 and stage 3 to stage 1	6	–6	0	0	27	–27	0	0
Transfer from stage 1 and stage 3 to stage 2	–12	12	–1	0	–4	4	0	0
Transfer from stage 1 and stage 2 to stage 3	0	–2	2	0	–1	–6	7	0
Additions	37	30	30	98	46	16	38	99
Utilisation	0	0	–5	–5	0	0	–7	–7
Reversals	–57	–27	–9	–94	–111	–50	–11	–172
Net present value effect	0	0	5	5	0	0	3	3
Exchange rate and other changes	3	0	3	6	3	2	3	9
As of 31 Dec.	81	40	128	248	104	33	101	238

Development of risk provisions for financial assets at amortised cost – Loans and advances to customers

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	192	275	1,238	1,705	243	326	1,255	1,824
Transfer from stage 2 and stage 3 to stage 1	78	–78	0	0	88	–89	1	0
Transfer from stage 1 and stage 3 to stage 2	–37	87	–49	0	–3	25	–21	0
Transfer from stage 1 and stage 2 to stage 3	–13	–61	74	0	–10	–78	88	0
Additions	214	336	384	934	149	249	242	641
Utilisation	0	0	–135	–135	–1	0	–171	–172
Reversals	–201	–156	–455	–812	–283	–169	–276	–727
Net present value effect	0	0	119	119	0	0	82	82
Exchange rate and other changes	3	4	35	42	8	11	39	57
As of 31 Dec.	237	406	1,211	1,853	192	275	1,238	1,705

Development of risk provisions for financial assets at amortised cost – Securities and investments

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	10	0	0	10	11	0	0	11
Additions	8	2	0	10	12	0	0	12
Reversals	–7	–1	0	–8	–13	0	0	–13
As of 31 Dec.	11	1	0	12	10	0	0	10

Development of Risk provisions for lending business (off-balance sheet lending transactions)

	Financial year 2022				Financial year 2021			
	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions	Stage 1 EUR in millions	Stage 2 EUR in millions	Stage 3 EUR in millions	Total EUR in millions
As of 1 Jan.	32	48	15	94	49	58	19	126
Transfer from stage 2 and stage 3 to stage 1	4	–4	0	0	21	–21	0	0
Transfer from stage 1 and stage 3 to stage 2	1	0	0	0	–2	2	0	0
Transfer from stage 1 and stage 2 to stage 3	0	–29	29	0	0	–13	13	0
Additions	80	39	12	131	60	59	5	125
Reversals	–76	–26	–9	–110	–98	–39	–23	–160
Exchange rate and other changes	0	–1	0	0	1	2	0	3
As of 31 Dec.	42	26	47	115	32	48	15	94

Provisions for losses on loans and advances also include money market investments and reverse repos.

In the reporting year, EUR 124 million (2021: EUR 86 million) in interest income was not collected for impaired loans and advances.

The contractual balance outstanding of financial assets that were written off during the reporting period and that are still subject to enforcement measures amounted to EUR 63 million as of the reporting date. (31 Dec. 2021: EUR 62 million).

(39) Financial assets at fair value

Analysis of Financial assets at fair value by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Loans and advances to banks – FVM		
Loans and advances	0	14
Other receivables	38	35
Loans and advances to customers – FVM		
Loans and advances	9,681	9,572
Securities and investments – FVM		
Equity investments	4,342	4,015
Shares in non-consolidated subsidiaries	80	68
Other derivatives – FVM		
Interest-related derivatives	1,787	3,122
Cross-currency derivatives	695	2,259
Total	16,624	19,085

Cross-currency swaps are presented under Cross-currency derivatives.

Other derivatives include derivatives with positive fair values of EUR 163 million (31 Dec. 2021: EUR 21 million) attributable to embedded derivatives that are bifurcated.

(40) Value adjustments from macro fair value hedge accounting

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Value adjustments to assets under macro fair value hedge accounting	-25,859	4,609

The fair values attributable to hedged risks in the hedged portfolios in the at amortised cost measurement category are included in this item.

(41) Derivatives designated for hedge accounting

Analysis of derivatives with positive fair values designated for hedge accounting by type of hedging relationship

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Micro fair value hedge accounting	6,699	8,449
Macro fair value hedge accounting	2,306	29
Total	9,005	8,478

Analysis of derivatives with positive fair values designated for hedge accounting by type of hedging instrument

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Interest-related derivatives	2,817	2,990
Cross-currency derivatives	6,188	5,488
Total	9,005	8,478

Only Interest-related derivatives are designated for macro fair value hedge accounting. Cross-currency swaps are presented under Cross-currency derivatives.

(42) Investments accounted for using the equity method

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Investments accounted for using the equity method	642	597
Total	642	597

The note regarding "Disclosures on shareholdings" includes a list of Investments accounted for using the equity method.

(43) Non-current assets held for sale

This item from the statement of financial position includes equity investments of DEG with a fair value of EUR 64 million (31 Dec. 2021: EUR 119 million), as in the previous year, in banks and companies and in the regions of Asia, Africa and North America, which meet the criteria under IFRS 5 as "non-current assets held for sale", and are therefore to be reported separately. These equity investments are recognised in the business sector DEG.

Disposal of the equity investments within the next twelve months is highly likely.

It was not possible in 2022 to sell, as planned, four equity investments recognised as assets held for sale in the consolidated financial statements as of 31 December 2021 (31 Dec. 2020: two equity investments). This was due to the deteriorated market environment in the wake of the coronavirus pandemic and to the Russia-Ukraine war. This decreased probability of sale resulted in an accounting reclassification, but had no impact on the earnings position.

(44) Property, plant and equipment

Analysis of Property, plant and equipment by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Land and buildings	823	839
Plant and equipment	60	80
Rights of use arising from leases	39	50
Other property, plant and equipment	7	2
Total	929	971

Additions to rights of use arising from leases amounted to EUR 0 million (2021: EUR 0 million). Payments in advance and assets under construction are presented in Other property, plant and equipment.

Development of Property, plant and equipment in financial year 2022

	Acquisition/ production cost	Accumulated amortisation, impairment and reversal of impairment losses	Net carrying amount
	EUR in millions	EUR in millions	EUR in millions
Carrying amount as of 1 Jan. 2022	1,513	-541	971
Additions/reversals of impairment losses	26	0	26
Disposals	-42	32	-10
Amortisation	0	-58	-58
Carrying amount as of 31 Dec. 2022	1,496	-568	929

Development of Property, plant and equipment in financial year 2021

	Acquisition/ production cost	Accumulated amortisation, impairment and reversal of impairment losses	Net carrying amount
	EUR in millions	EUR in millions	EUR in millions
Carrying amount as of 1 Jan. 2021	1,527	-528	999
Additions/reversals of impairment losses	37	0	37
Disposals	-51	50	-1
Amortisation	0	-63	-63
Carrying amount as of 31 Dec. 2021	1,513	-541	971

(45) Intangible assets

Analysis of Intangible assets by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Software	95	135
<i>Purchased software</i>	37	66
<i>Internally generated software</i>	58	69
Other intangible assets	5	9
Total	100	144

Other intangible assets include, in particular, software under development.

Development of Intangible assets in financial year 2022

	Acquisition/ production cost	Accumulated amortisation, impairment and reversal of impairment losses	Net carrying amount
	EUR in millions	EUR in millions	EUR in millions
Carrying amount as of 1 Jan. 2022	446	–302	144
Additions/reversals of impairment losses	14	0	14
Disposals	–3	3	0
Amortisation	0	–58	–58
Impairment losses	0	0	0
Carrying amount as of 31 Dec. 2022	457	–357	100

Development of Intangible assets in financial year 2021

	Acquisition/ production cost	Accumulated amortisation, impairment and reversal of impairment losses	Net carrying amount
	EUR in millions	EUR in millions	EUR in millions
Carrying amount as of 1 Jan. 2021	498	–326	172
Additions/reversals of impairment losses	35	0	35
Disposals	–87	85	–2
Amortisation	0	–60	–60
Impairment losses	0	–2	–2
Carrying amount as of 31 Dec. 2021	446	–302	144

(46) Income tax assets

Analysis of Income tax assets

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Current income tax assets	22	16
Deferred income tax assets	218	220 ¹⁾
Total	239	236¹⁾

¹⁾ Adjustments to corresponding prior-year figures as detailed under "Changes to significant accounting policies and estimates" in the Notes.

Current income tax assets result from creditable taxes (investment income tax/solidarity surcharge) and tax receivables from advance tax payments during financial year 2022.

Deferred income tax assets mostly result from valuation differences relating to the statement of financial position items listed below. Deferred tax assets relating to loss carryforwards are based on the business plan for 2023–2026. As of 31 December 2022, the volume of deferred tax assets not recognised was EUR 3 million (31 Dec. 2021: EUR 111 million) relating to loss carryforwards, and EUR 0 million (31 Dec. 2021: EUR 14 million) relating to accounting issues.

Further information on the amount recognised directly in equity as deferred taxes under Revaluation reserves can be found in the note "Equity".

Composition of deferred tax assets by statement of financial position item¹⁾

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Financial assets (at amortised cost and at fair value)	113	103
Intangible assets	0	5
Financial liabilities at fair value – Other derivatives	2	18
Provisions	37	80
Tax loss carryforwards	76	16
Subtotal	228	222
Offset against deferred tax liabilities	10	2
Total	218	220

¹⁾ Adjustments to corresponding prior-year figures as detailed under "Changes to significant accounting policies and estimates" in the Notes.

(47) Other assets

Analysis of Other assets

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Other assets and receivables	706	725
Prepaid expenses and deferred charges	65	69
Total	771	794

Other assets and receivables include primarily the receivables from the Federal Agency for Special Tasks Associated with Unification (*Bundesanstalt für vereinigungsbedingte Sonderaufgaben – “BvS”*), which are offset in equal amount by provisions arising from the assumption of the operations of the State Insurance Company of the German Democratic Republic in liquidation (*Staatliche Versicherung der Deutschen Demokratischen Republik in Abwicklung – “SInA”*), an institution under public law.

Prepaid expenses and deferred charges include financial assets resulting from contractual rights (“contract assets” in accordance with IFRS 15). These developed as follows:

Development of assets from contractual rights

	2022 EUR in millions	2021 EUR in millions
As of 1 Jan.	2	1
Additions	0	2
Disposals	–2	–1
As of 31 Dec.	0	2

(48) Financial liabilities at amortised cost

Analysis of Financial liabilities at amortised cost by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Liabilities to banks		
Money market transactions	4,453	1,327
Promissory note loans	1,456	1,203
Other financial liabilities	5,545	10,968
Liabilities to customers		
Money market transactions	299	269
Promissory note loans	51,038	38,372
Other financial liabilities	11,619	5,053
Certificated liabilities		
Money market issues	39,058	49,992
Bonds and notes	379,111	389,202
Total	492,579	496,385

Liabilities from cash collateral received are included in Other financial liabilities.

New securities (money market issues, bonds and notes) under sub-item certificated liabilities, with a nominal volume of EUR 268.2 billion and which are measured at amortised cost, were issued during the current financial year (2021: EUR 217.5 billion). The volume of repayments due to maturity during the same period amounted to EUR 262.9 billion (nominal) (2021: EUR 194.5 billion) and the volume of early repurchases to EUR 0.1 billion (nominal) (2021: EUR 0.7 billion).

Liabilities include liabilities from repurchase agreements and securities lending transactions under "Other financial liabilities".

(49) Financial liabilities at fair value

Analysis of Financial liabilities at fair value by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Liabilities to banks – FVD		
Promissory note loans	208	255
Liabilities to customers – FVD		
Promissory note loans	812	1,003
Certificated liabilities – FVD		
Bonds and notes	6,699	8,416
Other derivatives – FVM		
Interest-related derivatives	2,018	877
Cross-currency derivatives	1,664	933
Total	11,401	11,484

As in the previous year, there were no new issues in the current financial year under sub-item certificated liabilities to be measured at fair value. The volume of repayments due to maturity during the same period amounted to EUR 0.1 billion (nominal) (2021: EUR 2.6 billion) and the volume of early repurchases to EUR 0.0 billion (nominal) (2021: EUR 0.0 billion).

Cross-currency swaps are presented under Cross-currency derivatives.

Other derivatives include derivatives with negative fair values of EUR 5 million (31 Dec. 2021: EUR 12 million) attributable to embedded derivatives that are bifurcated.

(50) Value adjustments from macro fair value hedge accounting

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Value adjustments to liabilities under macro fair value hedge accounting	18	37

The fair values attributable to hedged risks in the hedged portfolios in the at amortised cost measurement category are included in this item.

(51) Derivatives designated for hedge accounting

Analysis of derivatives with negative fair values designated for hedge accounting by type of hedging relationship

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Micro fair value hedge accounting	10,600	2,181
Macro fair value hedge accounting	219	2,373
Total	10,819	4,554

Analysis of derivatives with negative fair values designated for hedge accounting by type of hedging instrument

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Interest-related derivatives	7,252	3,163
Cross-currency derivatives	3,567	1,390
Total	10,819	4,554

(52) Risk provisions

Analysis of Provisions by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Provisions for pensions and similar commitments	1,683	2,556
Provisions for credit risks	115	94
Other provisions	873	926
Total	2,672	3,576

Development of Provisions for pensions and similar commitments in financial year 2022

	Defined benefit obligations	Early retirement	Partial retirement	Total
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
As of 1 Jan. 2022	2,496	53	7	2,556
Additions	118	-4	1	115
<i>Current service cost</i>	85	0	1	86
<i>Interest cost</i>	34	-4	0	29
Actuarial gains and losses	-922	0	0	-922
<i>Changes in demographic assumptions</i>	-2	0	0	-2
<i>Changes in financial assumptions</i>	-925	0	0	-925
<i>Changes in experience adjustments</i>	4	0	0	4
Utilisation	-60	-7	-4	-71
Contributions by members (recognised in equity)	5	0	0	5
As of 31 Dec. 2022	1,638	42	3	1,683

The average expected residual term of the defined-benefit pension obligations is 15.9 years as of 31 December 2022 (31 Dec. 2021: 20.3 years).

Development of Provisions for pensions and similar commitments in financial year 2021

	Defined benefit obligations	Early retirement	Partial retirement	Total
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
As of 1 Jan. 2021	2,616	60	11	2,687
Additions	113	0	1	114
<i>Current service cost</i>	86	0	1	87
<i>Interest cost</i>	27	0	0	27
Actuarial gains and losses	-182	0	0	-182
<i>Changes in financial assumptions</i>	-155	0	0	-155
<i>Changes in experience adjustments</i>	-27	0	0	-27
Utilisation	-55	-8	-5	-68
Reversals	0	0	0	0
Transfers	0	0	0	0
Contributions by members (recognised in equity)	5	0	0	5
As of 31 Dec. 2021	2,496	53	7	2,556

Provisions for pensions and similar commitments are calculated on the basis of the 2018 G Heubeck actuarial tables and the following other actuarial assumptions:

Actuarial assumptions in % p. a.

	31 Dec. 2022	31 Dec. 2021
Technical discount rate	3.89	1.32
Rate of salary increases	2.20	2.20
Rate of pension increases	2.50	2.50
Rate of staff turnover	3.17	2.29

The technical discount rate as of 31 December 2022 reflects an adjustment to the average residual term of the defined benefit pension obligations translating into an adjustment to the average capital commitment period used.

Sensitivity of defined benefit pension obligations as of 31 December 2022

	Difference	Change in defined benefit obligations EUR in millions	Difference	Change in defined benefit obligations EUR in millions
Life expectancy	+1 year	60	-1 year	-62
Technical discount rate	+0.25%	-61	-0.25%	65
Rate of salary increases	+0.50%	7	-0.50%	-7
Rate of pension increases	+0.50%	88	-0.50%	-52
Rate of staff turnover	+1.00%	-1	-1.00%	1

Sensitivity of defined benefit pension obligations as of 31 December 2021

	Difference	Change in defined benefit obligations EUR in millions	Difference	Change in defined benefit obligations EUR in millions
Life expectancy	+1 year	120	-1 year	-120
Technical discount rate	+0.25%	-121	-0.25%	130
Rate of salary increases	+0.50%	15	-0.50%	-14
Rate of pension increases	+0.50%	176	-0.50%	-94
Rate of staff turnover	+1.00%	-2	-1.00%	3

Development of Risk provisions for lending business

For the development of Risk provisions for lending business (off-balance sheet transactions) see the note regarding "Risk provisions".

Development of Other provisions in financial year 2022

	Obligations to employees	Other provisions	Total
	EUR in millions	EUR in millions	EUR in millions
As of 1 Jan. 2022	36	890	926
Additions	3	65	68
Utilisation	–4	–95	–99
Reversals	–4	–18	–22
As of 31 Dec. 2022	32	842	873

The Obligations to employees column shows other long-term employee benefits including provisions for service anniversaries. Corresponding actuarial reports have been prepared for these obligations.

An Other provision item in an amount of EUR 95 million (31 Dec. 2021: EUR 69 million) is reported due to the interest rate being below the market rate for irrevocable promotional loan commitments with additional promotional funds in the form of interest rate reductions impacting KfW's earnings position. Changes to existing provisions are presented as net additions or, in the case of a decline, as a transfer via the adjustments to the carrying amounts of already disbursed promotional loans recognised on the assets side under Financial assets at amortised cost – Loans and advances to banks or customers.

Other provisions also comprise obligations arising from the assumption of the operations of the State Insurance Company of the German Democratic Republic in liquidation (*Staatliche Versicherung der Deutschen Demokratischen Republik in Abwicklung* – “SInA”, an institution under public law), which are offset by receivables in the same amount from the Federal Agency for Special Tasks Associated with Unification (*Bundesanstalt für vereinigungsbedingte Sonderaufgaben* – “BvS”) recognised in Other assets. Other provisions also include provisions for legal risks offset by receivables from the Federal Government in the same amount.

Development of Other provisions in financial year 2021

	Obligations to employees	Other provisions	Total
	EUR in millions	EUR in millions	EUR in millions
As of 1 Jan. 2021	37	694	731
Additions	4	254	258
Utilisation	–4	–46	–50
Reversals	0	–12	–12
As of 31 Dec. 2021	36	890	926

(53) Income tax liabilities

Analysis of Income tax liabilities

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Current income tax liabilities	19	29
Deferred income tax liabilities	42	38 ¹⁾
Total	61	67¹⁾

¹⁾ Adjustments to corresponding prior-year figures as detailed under "Changes to significant accounting policies and estimates" in the Notes.

Current income tax liabilities as of 31 December 2022 primarily consist of tax provisions at the level of taxable companies included in KfW Group.

Deferred income tax liabilities mostly resulted from valuation differences relating to the statement of financial position items listed below. A transition in calculating deferred taxes for derivatives, pursuant to IAS 8, was undertaken in financial year 2022. This resulted in a deferred tax liability of EUR 8 million as of 31 December 2022. Application of the method as of 31 December 2021 resulted in deferred tax assets of EUR 18 million (also note on "Income tax assets").

Composition of deferred tax liabilities by statement of financial position item¹⁾

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Financial assets at fair value – Other derivatives	8	0
Securities and investments	43	39
Other statement of financial position items	1	1
Subtotal	52	40
Offset against deferred tax assets	10	2
Total	42	38

¹⁾ Adjustments to corresponding prior-year figures as detailed under "Changes to significant accounting policies and estimates" in the Notes.

(54) Other liabilities

Analysis of Other liabilities

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Other financial liabilities	413	273
Deferred income	43	50
Lease liabilities	45	59
Total	501	382

Deferred income includes liabilities resulting from contractual obligations ("contract liabilities" in accordance with IFRS 15). These developed as follows:

Development of liabilities from contractual obligations

	2022	2021
	EUR in millions	EUR in millions
As of 1 Jan.	41	38
Additions	13	17
Disposals	-16	-15
As of 31 Dec.	38	41

(55) Equity

Analysis of Equity

	31 Dec. 2022	31 Dec. 2021
	EUR in millions	EUR in millions
Subscribed capital	3,750	3,750
less uncalled outstanding contributions	-450	-450
Paid-in subscribed capital	3,300	3,300
Capital reserve	8,447	8,447
Reserve from the ERP Special Fund	1,191	1,191
Retained earnings	23,391	22,026
<i>Statutory reserve under Article 10 (2) KfW Law</i>	1,875	1,875
<i>Special reserve under Article 10 (3) KfW Law</i>	15,781	14,755
<i>Special reserve less the special loss account from provisioning pursuant to Section 17 (4) of the D-Mark Balance Sheet Law</i>	21	21
<i>Other retained earnings</i>	5,714	5,374
Fund for general banking risks	200	200
Revaluation reserves	50	-957
<i>Valuation result from the change in own credit risk of liabilities designated at fair value through profit or loss</i>	6	-131
<i>Actuarial gains and losses from defined-benefit pension obligations (after tax)</i>	44	-826
Total	36,579	34,207

The Federal Government owns 80% of KfW's share capital, the German federal states 20%. In accordance with Article 1a of the KfW Law, the Federal Republic of Germany is liable for certain of KfW's liabilities. There is no profit distribution in accordance with Article 10 (1) of the KfW Law. KfW's net income amounting to EUR 1,026 million (2021: EUR 1,784 million) was used to increase the special reserve under Article 10 (3) KfW Law.

Equity forms the basis for the capital available for covering risks, which is matched against the capital requirements derived from internal management.

For information concerning Equity in relation to risk-bearing capacity, see the risk report in the combined management report.

The revaluation reserves developed as follows:

Development of revaluation reserves

	Valuation result from the change in own credit risk of liabilities designated at fair value through profit or loss EUR in millions	Actuarial gains and losses from defined benefit pension obligations EUR in millions	Effects of deferred taxes EUR in millions	Total EUR in millions
As of 1 Jan. 2021	-153	-1,052	54	-1,151
Consolidated comprehensive income	23	182	-10	195
Other comprehensive income	23	182	-10	195
As of 31 Dec. 2021	-131	-870	44	-957
Consolidated comprehensive income	137	922	-53	1,007
Other comprehensive income	137	922	-53	1,007
As of 31 Dec. 2022	6	52	-9	50

Notes to financial instruments

The different IFRS 9 measurement categories are abbreviated as follows in the Notes to financial instruments:

ACO	=	Financial instruments measured at amortised cost
FVM	=	Financial instruments measured at fair value
FVD	=	Financial instruments designated at fair value

(56) Gains and losses from financial instruments by measurement category

The following tables show the results from financial instruments included in the different statement of comprehensive income items presented by measurement category. The result from foreign currency translation is not included.

Gains and losses from financial instruments by measurement category in financial year 2022

	Financial assets at amortised cost	Financial liabilities at amortised cost	Financial assets at fair value – FVM	Financial liabilities at fair value		Derivatives designated for hedge accounting	Total
	EUR in millions	EUR in millions	EUR in millions	FVM EUR in millions	FVD EUR in millions	EUR in millions	EUR in millions
Interest income	4,737 ¹⁾	0	110	610	0	–1,672	3,786
Interest expense	–268	–3,789	57	7	–349	2,738	–1,603
Net gains/losses from risk provisions	–124	0	0	0	0	0	–124
Commission income	9	0	1	0	0	0	9
Commission expense	–10	–5	–1	0	0	0	–16
Net gains/losses from hedge accounting	–32,943	33,070	0	0	0	23	150
Net gains/losses from other financial instruments at fair value through profit or loss	0	0	470	–2,254	1,850	0	65
Net gains/losses from disposal of financial assets at amortised cost	–1	0	0	0	0	0	–1
Net other operating income	0	0	0	0	0	0	0
Change in revaluation reserves	0	0	0	0	137	0	137
Total	–28,600	29,277	636	–1,637	1,638	1,089	2,403

¹⁾ Includes interest income from financial guarantees of EUR 33 million.

Gains and losses from financial instruments by measurement category in financial year 2021

	Financial assets at amortised cost	Financial liabilities at amortised cost	Financial assets at fair value – FVM	Financial liabilities at fair value		Derivatives designated for hedge accounting	Total
				FVM	FVD		
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Interest income	3,764 ¹⁾	0	326	120	0	–3,149	1,061
Interest expense	–145	–2,877	382	–203	–386	4,582	1,354
Net gains/losses from risk provisions	196	0	0	0	0	0	196
Commission income	8	0	0	0	0	0	8
Commission expense	–10	–4	–1	0	0	0	–15
Net gains/losses from hedge accounting	–7,940	9,128	0	0	0	–1,297	–110
Net gains/losses from other financial instruments at fair value through profit or loss	0	0	–389	549	614	0	774
Net gains/losses from disposal of financial assets at amortised cost	–4	0	0	0	0	0	–4
Net other operating income	0	0	0	0	0	0	0
Change in revaluation reserves	0	0	0	0	23	0	23
Total	–4,131	6,247	318	465	251	137	3,286

¹⁾ Includes interest income from financial guarantees of EUR 25 million.

(57) Disclosures on fair value

The following tables show the financial instruments measured at fair value or for which the fair value is indicated in the Notes according to the valuation methods used. There is also a comparison of fair value and carrying amount.

Fair value of financial instruments by valuation method as of 31 December 2022

	Carrying amount (statement of financial position) EUR in millions	Fair value			Total EUR in millions	Difference from carrying amount EUR in millions
		Level 1 EUR in millions	Level 2 EUR in millions	Level 3 EUR in millions		
Assets						
Cash reserves	51,848	51,848	0	0	51,848	0
Financial assets at amortised cost						
Loans and advances to banks	313,919	0	9,354	275,683	285,037	-28,882
Loans and advances to customers	152,624	0	1,334	146,636	147,970	-4,655
Securities and investments	33,721	26,453	3,257	3,954	33,664	-57
Financial assets at fair value						
Loans and advances to banks – FVM	38	0	0	38	38	0
Loans and advances to customers – FVM	9,682	0	9,480	202	9,682	0
Securities and investments – FVM	4,422	87	3,336	1,000	4,422	0
Other derivatives – FVM	2,482	0	2,481	1	2,482	0
Value adjustments from macro fair value hedge accounting	-25,859	n.a.	n.a.	n.a.	n.a.	25,859
Derivatives designated for hedge accounting	9,005	0	9,005	0	9,005	0
Non-current assets held for sale	64	0	16	49	64	0
Total	551,948	78,388	38,262	427,562	544,213	-7,735
Liabilities and equity						
Financial liabilities at amortised cost						
Liabilities to banks	11,454	0	11,408	4	11,412	-42
Liabilities to customers	62,956	0	61,784	42	61,826	-1,130
Certificated liabilities	418,169	355,134	55,595	0	410,729	-7,440
Financial liabilities at fair value						
Liabilities to banks – FVD	208	0	208	0	208	0
Liabilities to customers – FVD	812	0	812	0	812	0
Certificated liabilities – FVD	6,699	4,257	2,442	0	6,699	0
Other derivatives – FVM	3,682	0	3,639	43	3,682	0
Value adjustments from macro fair value hedge accounting	18	n.a.	n.a.	n.a.	n.a.	-18
Derivatives designated for hedge accounting	10,819	0	10,819	0	10,819	0
Total	514,816	359,391	146,705	90	506,186	-8,630

Fair value of financial instruments by valuation method as of 31 December 2021

	Carrying amount (statement of financial position) EUR in millions	Fair value			Total EUR in millions	Difference from carrying amount EUR in millions
		Level 1 EUR in millions	Level 2 EUR in millions	Level 3 EUR in millions		
Assets						
Cash reserves	42,439	42,439	0	0	42,439	0
Financial assets at amortised cost						
Loans and advances to banks	308,251	0	6,270	305,404	311,675	3,424
Loans and advances to customers	129,197	0	0	133,323	133,323	4,126
Securities and investments	35,774	28,578	3,485	3,809	35,872	98
Financial assets at fair value						
Loans and advances to banks – FVM	49	0	0	49	49	0
Loans and advances to customers – FVM	9,572	0	9,437	135	9,572	0
Securities and investments – FVM	4,083	111	3,352	619	4,083	0
Other derivatives – FVM	5,381	0	4,765	616	5,381	0
Value adjustments from macro fair value hedge accounting	4,609	n.a.	n.a.	n.a.	n.a.	–4,609
Derivatives designated for hedge accounting	8,478	0	8,478	0	8,478	0
Non-current assets held for sale	119	0	68	51	119	0
Total	547,951	71,128	35,855	444,007	550,990	3,040
Liabilities and equity						
Financial liabilities at amortised cost						
Liabilities to banks	13,498	0	13,537	2	13,539	41
Liabilities to customers	43,694	0	43,694	42	43,736	43
Certificated liabilities	439,194	378,227	62,389	0	440,616	1,422
Financial liabilities at fair value						
Liabilities to banks – FVD	255	0	255	0	255	0
Liabilities to customers – FVD	1,003	0	1,003	0	1,003	0
Certificated liabilities – FVD	8,416	5,223	3,193	0	8,416	0
Other derivatives – FVM	1,810	0	1,723	86	1,810	0
Value adjustments from macro fair value hedge accounting	37	n.a.	n.a.	n.a.	n.a.	–37
Derivatives designated for hedge accounting	4,554	0	4,554	0	4,554	0
Total	512,459	383,449	130,349	130	513,928	1,469

Interest-related changes in value are also included in measuring the fair value of the financial instruments. Accordingly, when the comparison is made with the carrying amount, it is necessary to take into account the changes in value (interest-related) resulting from the recognition of Loans and advances and borrowings in macro fair value hedge accounting.

Change of valuation method used for financial instruments measured at fair value with a transfer between levels 1 and 2 in financial year 2022

	Transfer from level 1 to level 2 EUR in millions	Transfer from level 2 to level 1 EUR in millions
Assets		
Financial assets at fair value		
Loans and advances to banks – FVM	0	0
Loans and advances to customers – FVM	0	0
Securities and investments – FVM	0	5
Other derivatives – FVM	0	0
Derivatives designated for hedge accounting	0	0
Non-current assets held for sale	0	0
Total	0	5
Liabilities and equity		
Financial liabilities at fair value		
Liabilities to banks – FVD	0	0
Liabilities to customers – FVD	0	0
Certificated liabilities – FVD	0	186
Other derivatives – FVM	0	0
Derivatives designated for hedge accounting	0	0
Total	0	186

KfW carried out transfers from level 2 to level 1 in financial year 2022, in cases where quoted market prices from active markets were available again for these transactions. In contrast, there were transfers from level 1 to level 2 in financial year 2021 where there were no quoted market prices from active markets available for the respective financial instruments.

**Change of valuation method used for financial instruments measured at fair value
with a transfer between levels 1 and 2 in financial year 2021**

	Transfer from level 1 to level 2	Transfer from level 2 to level 1
	EUR in millions	EUR in millions
Assets		
Financial assets at fair value		
Loans and advances to banks – FVM	0	0
Loans and advances to customers – FVM	0	0
Securities and investments – FVM	0	0
Other derivatives – FVM	0	0
Derivatives designated for hedge accounting	0	0
Non-current assets held for sale	0	0
Total	0	0
Liabilities and equity		
Financial liabilities at fair value		
Liabilities to banks – FVD	0	0
Liabilities to customers – FVD	0	0
Certificated liabilities – FVD	38	0
Other derivatives – FVM	0	0
Derivatives designated for hedge accounting	0	0
Total	38	0

Development of financial assets measured at fair value assigned to level 3 in financial year 2022

	Financial assets at fair value				Non-current assets held for sale	Total
	Loans and advances to banks – FVM	Loans and advances to customers – FVM	Securities and investments – FVM	Other derivatives – FVM		
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
As of 1 Jan. 2022	49	135	619	616	51	1,471
A. Changes recognised in the income statement						
Net interest and commission income	0	–2	0	–5	0	–7
<i>Contracts still valid at year-end</i>	0	0	0	0	0	–1
Net gains/losses from hedge accounting	0	0	0	0	0	0
<i>Contracts still valid at year-end</i>	0	0	0	0	0	0
Net gains/losses from other financial instruments at fair value through profit or loss	–13	–7	–117	–746	11	–872
<i>Contracts still valid at year-end</i>	–12	7	–111	–8	–1	–125
Total changes recognised in the income statement	–13	–9	–117	–751	11	–878
B. Changes recognised directly in equity						
Changes in level assignment	0	0	457	–28	–11	418
Transfer from level 1 and level 2	0	0	522	1	0	524
Transfer to level 1 and level 2	0	0	–65	–30	–11	–106
Additions	0	155	67	0	0	222
Disposals	–2	–87	–55	0	–16	–160
Total changes recognised directly in equity	–2	69	469	–28	–27	481
Changes in consolidated group	0	0	–1	0	0	–1
Exchange rate changes	3	7	40	8	2	60
Other changes	0	0	–11	156	11	156
As of 31 Dec. 2022	38	202	1,000	1	49	1,289

Development of financial liabilities measured at fair value assigned to level 3 in financial year 2022

	Financial liabilities at fair value				Total EUR in millions
	Liabilities to banks – FVD	Liabilities to customers – FVD	Certificated liabilities – FVD	Other derivatives – FVM	
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	
As of 1 Jan. 2022	0	0	0	86	86
A. Changes recognised in the income statement					
Net interest and commission income	0	0	0	28	28
<i>Contracts still valid at year-end</i>	0	0	0	0	0
Net gains/losses from hedge accounting	0	0	0	0	0
<i>Contracts still valid at year-end</i>	0	0	0	0	0
Net gains/losses from other financial instruments at fair value through profit or loss	0	0	0	918	918
<i>Contracts still valid at year-end</i>	0	0	0	40	40
Total changes recognised in the income statement	0	0	0	946	946
B. Changes recognised directly in equity					
Change in revaluation reserves	0	0	0	0	0
<i>Contracts still valid at year-end</i>	0	0	0	0	0
Changes in level assignment	0	0	0	–1,113	–1,113
Transfer from level 1 and level 2	0	0	0	2	2
Transfer to level 1 and level 2	0	0	0	–1,115	–1,115
Additions	0	0	0	0	0
Disposals	0	0	0	–3	–3
Total changes recognised directly in equity	0	0	0	–1,116	–1,116
Exchange rate changes	0	0	0	–19	–19
Other changes	0	0	0	146	146
As of 31 Dec. 2022	0	0	0	43	43

KfW carried out transfers from levels 1 and 2 to level 3 because in financial years 2022 and 2021 quoted prices on the active market or observable market parameters were no longer available or their effect on fair value was deemed to be material. In contrast, KfW carried out transfers from level 3 to levels 1 and 2 if quoted prices on the active market or observable market parameters were available again or if the effect of non-observable parameters on fair value was deemed to be immaterial.

Derivative transactions concluded as hedging instruments with customers were transferred from level 3 to level 2 in financial year 2022 primarily due to changes in the materiality assessment concerning unobservable data.

Development of financial assets measured at fair value assigned to level 3 in financial year 2021

	Financial assets at fair value					Total
	Loans and advances to banks – FVM	Loans and advances to customers – FVM	Securities and investments – FVM	Other derivatives – FVM	Non-current assets held for sale	
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	
As of 1 Jan. 2021	38	191	710	1,177	59	2,174
A. Changes recognised in the income statement						
Net interest and commission income	0	–1	0	10	0	9
<i>Contracts still valid at year-end</i>	0	–1	0	10	0	9
Net gains/losses from hedge accounting	0	0	0	0	0	0
<i>Contracts still valid at year-end</i>	0	0	0	0	0	0
Net gains/losses from other financial instruments at fair value through profit or loss	8	–5	53	–648	11	–581
<i>Contracts still valid at year-end</i>	8	–8	39	–573	11	–523
Total changes recognised in the income statement	8	–6	53	–639	11	–573
B. Changes recognised directly in equity						
Changes in level assignment	0	0	–149	0	–27	–177
Transfer from level 1 and level 2	0	0	64	0	8	72
Transfer to level 1 and level 2	0	0	–213	0	–36	–249
Additions	9	49	55	0	0	113
Disposals	–8	–104	–60	0	–7	–179
Total changes recognised directly in equity	0	–55	–155	0	–35	–243
Changes in consolidated group	0	0	0	0	0	0
Exchange rate changes	3	5	24	45	3	80
Other changes	0	0	–14	33	14	33
As of 31 Dec. 2021	49	135	619	616	51	1,471

Development of financial liabilities measured at fair value assigned to level 3 in financial year 2021

	Financial liabilities at fair value				Total EUR in millions
	Liabilities to banks – FVD	Liabilities to customers – FVD	Certificated liabilities – FVD	Other derivatives – FVM	
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	
As of 1 Jan. 2021	0	0	3	18	21
A. Changes recognised in the income statement					
Net interest and commission income	0	0	0	–1	–1
<i>Contracts still valid at year-end</i>	0	0	0	–4	–4
Net gains/losses from hedge accounting	0	0	0	0	0
<i>Contracts still valid at year-end</i>	0	0	0	0	0
Net gains/losses from other financial instruments at fair value through profit or loss	0	0	0	36	36
<i>Contracts still valid at year-end</i>	0	0	0	6	6
Total changes recognised in the income statement	0	0	0	35	35
B. Changes recognised directly in equity					
Change in revaluation reserves	0	0	0	0	0
<i>Contracts still valid at year-end</i>	0	0	0	0	0
Changes in level assignment	0	0	–4	0	–4
Transfer from level 1 and level 2	0	0	0	0	0
Transfer to level 1 and level 2	0	0	–4	0	–4
Additions	0	0	0	2	2
Disposals	0	0	0	–3	–3
Total changes recognised directly in equity	0	0	–3	–1	–4
Exchange rate changes	0	0	0	1	1
Other changes	0	0	0	33	33
As of 31 Dec. 2021	0	0	0	86	86

The following tables show how an alternative determination of relevant unobservable data, i.e. values in best and worst case scenarios, would impact fair values for significant products allocated to this level.

Information on unobservable data as of 31 December 2022

Major classes	Valuation method used	Relevant unobservable data with alternative determination	Range
Loans and advances to banks and loans and advances to customers – FVM ¹⁾	Discounted cash flow method	Risk costs	+/- 10%
Securities and investments from equity finance business – FVM	Discounted cash flow method ²⁾	Cost of capital	0.5% to 1.5% (absolute fluctuation)
		Long-term result	5% (relative fluctuation)
		Risk costs	+/- 10%
Non-current assets held for sale	Discounted cash flow method	Cost of capital	0.5% to 1.5% (absolute fluctuation)
		Long-term result	5% (relative fluctuation)
Other derivatives – derivatives with positive or negative fair values, which comprise a hedging instrument for customers with respect to export and project finance – FVM	Discounted cash flow method	Expected loss	+/- 30%

¹⁾ As of reporting year 2022, the sensitivities for the classes Loans and advances to banks and Loans and advances to customers – FVM are calculated on the basis of the cost of risk, given that the credit spread and internal spread are no longer available.

²⁾ If the cost of capital and the long-term result could not be used for valuation, the sensitivities were calculated on the basis of the cost of risk.

Information on unobservable data as of 31 December 2021

Major classes	Valuation method used	Relevant unobservable data with alternative determination	Range
Loans and advances to banks and loans and advances to customers – FVM	Discounted cash flow method ¹⁾	Credit spread	–600 to +2,600 basis points
		Internal spread	–11 to +11 basis points
		Risk costs	+/- 10%
Securities and investments from equity finance business – FVM	Discounted cash flow method ²⁾	Cost of capital	0.5% to 1.5% (absolute fluctuation)
		Long-term result	5% (relative fluctuation)
		Risk costs	+/- 10%
Non-current assets held for sale	Discounted cash flow method	Cost of capital	0.5% to 1.5% (absolute fluctuation)
		Long-term result	5% (relative fluctuation)
		Expected risk-free customer margin	7% to 13%
Other derivatives – derivatives with positive or negative fair values, which comprise a hedging instrument for customers with respect to export and project finance – FVM	Discounted cash flow method		

¹⁾ If the credit spread and the internal spread could not be used for valuation purposes, the sensitivities were calculated on the basis of the cost of risk.

²⁾ If the cost of capital and the long-term result could not be used for valuation, the sensitivities were calculated on the basis of the cost of risk.

Sensitivity analysis for the financial assets measured at fair value assigned to level 3 as of 31 December 2022

	Best case scenario	Reported value	Worst case scenario
	EUR in millions	EUR in millions	EUR in millions
Financial assets at fair value			
Loans and advances to banks – FVM	41	38	35
Loans and advances to customers – FVM	212	202	191
Securities and investments – FVM	1,115	1,000	896
Other derivatives – FVM	1	1	1
Non-current assets held for sale	56	49	43
Total	1,425	1,289	1,166

Sensitivity analysis for the financial liabilities measured at fair value assigned to level 3 as of 31 December 2022

	Best case scenario	Reported value	Worst case scenario
	EUR in millions	EUR in millions	EUR in millions
Financial liabilities at fair value			
Other derivatives – FVM	43	43	43
Total	43	43	43

Sensitivity analysis for the financial assets measured at fair value assigned to level 3 as of 31 December 2021

	Best case scenario	Reported value	Worst case scenario
	EUR in millions	EUR in millions	EUR in millions
Financial assets at fair value			
Loans and advances to banks – FVM	52	49	47
Loans and advances to customers – FVM	146	135	123
Securities and investments – FVM	704	619	548
Other derivatives – FVM	622	616	610
Non-current assets held for sale	61	51	44
Total	1,585	1,471	1,372

Sensitivity analysis for the financial liabilities measured at fair value assigned to level 3 as of 31 December 2021

	Best case scenario	Reported value	Worst case scenario
	EUR in millions	EUR in millions	EUR in millions
Financial liabilities at fair value			
Other derivatives – FVM	86	86	87
Total	86	86	87

(58) Disclosures on micro fair value hedge accounting

Disclosures on hedged items in micro fair value hedge accounting by risk type – 2022

	Carrying amount of hedged items	Accumulated hedge fair value adjustment (fair value of the hedged risk for the hedged item)	Hedge fair value adjustment to be amortised (discontinued hedge relationships)	Statement of financial position items in which the hedged items are reported	Fair value changes in hedged items to determine hedge ineffectiveness (income statement effect – hedged items)
	EUR in millions	EUR in millions	EUR in millions		EUR in millions
Assets					
Interest risk					
Securities and investments – Bonds and other fixed-income securities	26,960	–2,453	0	Financial assets at amortised cost	–2,548
Interest-currency risk					
Securities and investments – Bonds and other fixed-income securities	101	–1	0	Financial assets at amortised cost	–2
Liabilities and equity					
Interest risk					
Liabilities to banks/customers – promissory note loans	27,249	–2,176	2	Financial liabilities at amortised cost	2,195
Certificated liabilities	192,316	–21,947	184	Financial liabilities at amortised cost	23,783
Interest-currency risk					
Liabilities to banks/customers – promissory note loans	0	0	0	Financial liabilities at amortised cost	0
Certificated liabilities	102,770	–5,645	803	Financial liabilities at amortised cost	7,074

Disclosures on hedged items in micro fair value hedge accounting by risk type – 2021

	Carrying amount of hedged items	Accumulated hedge fair value adjustment (fair value of the hedged risk for the hedged item)	Hedge fair value adjustment to be amortised (discontinued hedge relationships)	Statement of financial position items in which the hedged items are reported	Fair value changes in hedged items to determine hedge ineffectiveness (income statement effect – hedged items)
	EUR in millions	EUR in millions	EUR in millions		EUR in millions
Assets					
Interest risk					
Securities and investments – Bonds and other fixed-income securities	28,636	94	1	Financial assets at amortised cost	–508
Interest-currency risk					
Securities and investments – Bonds and other fixed-income securities	116	1	0	Financial assets at amortised cost	–3
Liabilities and equity					
Interest risk					
Liabilities to banks/customers – promissory note loans	30,537	18	2	Financial liabilities at amortised cost	481
Certificated liabilities	183,746	1,799	261	Financial liabilities at amortised cost	5,053
Interest-currency risk					
Liabilities to banks/customers – promissory note loans	0	0	0	Financial liabilities at amortised cost	0
Certificated liabilities	120,051	939	1,309	Financial liabilities at amortised cost	3,576

Disclosures on hedging instruments in micro fair value hedge accounting by risk type – 2022

	Par value of hedging instruments	Carrying amount of hedging instruments	Statement of financial position items in which the hedging instruments are reported	Fair value changes in hedging instruments to determine hedge ineffectiveness (income statement effect – hedging instruments)	Average interest rate of hedging instruments ¹⁾
	EUR in millions	EUR in millions		EUR in millions	%
Assets					
Interest risk					
Interest-related transactions: interest rate swap	37,838	511	Derivatives designated for hedge accounting	2,547	–0.9
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	69,391	6,188	Derivatives designated for hedge accounting	2	3.0 ²⁾
Liabilities and equity					
Interest risk					
Interest-related transactions: interest rate swap	233,512	7,033	Derivatives designated for hedge accounting	–25,947	–2.7
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	101,100	3,567	Derivatives designated for hedge accounting	–7,085	0.6 ²⁾

¹⁾ Average interest rate based on the coupon of the fixed leg of the derivatives weighted with nominal volume.

²⁾ Cross-currency interest rate swaps are primarily used to hedge interest risks, but also to hedge foreign currency risks. The difference between the average interest rate of the interest rate swaps and the cross-currency interest rate swaps results from the different interest rates of the hedged currencies, among other factors.

Disclosures on hedging instruments in micro fair value hedge accounting by risk type – 2021

	Par value of hedging instruments	Carrying amount of hedging instruments	Statement of financial position items in which the hedging instruments are reported	Fair value changes in hedging instruments to determine hedge ineffectiveness (income statement effect – hedging instruments)	Average interest rate of hedging instruments ¹⁾
	EUR in millions	EUR in millions		EUR in millions	%
Assets					
Interest risk					
Interest-related transactions: interest rate swap	183,537	2,961	Derivatives designated for hedge accounting	512	0.1
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	134,963	5,488	Derivatives designated for hedge accounting	3	0.2 ²⁾
Liabilities and equity					
Interest risk					
Interest-related transactions: interest rate swap	54,655	790	Derivatives designated for hedge accounting	–5,524	0.7
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	54,166	1,390	Derivatives designated for hedge accounting	–3,594	0.3 ²⁾

¹⁾ Average interest rate based on the coupon of the fixed leg of the derivatives weighted with nominal volume.

²⁾ Cross-currency interest rate swaps are primarily used to hedge interest risks, but also to hedge foreign currency risks. The difference between the average interest rate of the interest rate swaps and the cross-currency interest rate swaps results from the different interest rates of the hedged currencies, among other factors.

**Analysis of par values of hedging instruments by hedge relationship
according to remaining terms as of 31 December 2022**

Due	In up to 1 month	Between 1 and 3 months	Between 3 months and 1 year	Between 1 year and 5 years	In more than 5 years
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Assets					
Interest risk					
Interest-related transactions: interest rate swap	2,860	1,215	4,519	16,837	12,406
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	4,094	5,378	10,199	40,755	8,966
Liabilities and equity					
Interest risk					
Interest-related transactions: interest rate swap	914	7,228	16,609	131,059	77,702
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	3,873	4,486	14,205	67,921	10,615

**Analysis of par values of hedging instruments by hedge relationship
according to remaining terms as of 31 December 2021**

Due	In up to 1 month	Between 1 and 3 months	Between 3 months and 1 year	Between 1 year and 5 years	In more than 5 years
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Assets					
Interest risk					
Interest-related transactions: interest rate swap	177	3,075	31,063	88,042	61,180
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	5,336	11,898	22,248	81,928	13,553
Liabilities and equity					
Interest risk					
Interest-related transactions: interest rate swap	576	765	3,323	25,216	24,774
Interest-currency risk					
Cross-currency transactions: cross-currency interest rate swap	730	5,464	6,760	34,848	6,365

(59) Disclosures on macro fair value hedge accounting

Disclosures on hedged items in macro fair value hedge accounting by risk type – 2022

	Carrying amount of hedged items	Value adjustment from macro fair value hedge accounting	Value adjustment from macro fair value hedge accounting to be amortised (discontinued hedge relationships)	Statement of financial position items in which the hedged items are reported		Fair value changes in hedged items to determine hedge ineffectiveness (income statement effect – hedged items)
				Carrying amount before value adjustment from macro fair value hedge accounting	Value adjustment from macro fair value hedge accounting	
	EUR in millions	EUR in millions	EUR in millions			EUR in millions
Interest risk						
Assets					Value adjustment from macro fair value hedge accounting	
	262,713	–25,859	105	Financial assets at amortised cost		–30,393
Liabilities and equity				Value adjustment from macro fair value hedge accounting		
	0	18	18	Financial liabilities at amortised cost		19

Disclosures on hedged items in macro fair value hedge accounting by risk type – 2021

	Carrying amount of hedged items	Value adjustment from macro fair value hedge accounting	Value adjustment from macro fair value hedge accounting to be amortised (discontinued hedge relationships)	Statement of financial position items in which the hedged items are reported		Fair value changes in hedged items to determine hedge ineffectiveness (income statement effect – hedged items)
				Carrying amount before value adjustment from macro fair value hedge accounting	Value adjustment from macro fair value hedge accounting	
	EUR in millions	EUR in millions	EUR in millions			EUR in millions
Interest risk						
Assets					Value adjustment from macro fair value hedge accounting	
	222,782	4,609	195	Financial assets at amortised cost		–7,430
Liabilities and equity				Value adjustment from macro fair value hedge accounting		
	0	37	37	Financial liabilities at amortised cost		18

Disclosures on hedging instruments in macro fair value hedge accounting by risk type – 2022

	Par value of hedging instruments	Carrying amount of hedging instruments	Statement of financial position items in which the hedging instruments are reported	Fair value changes in hedging instruments to determine hedge ineffectiveness (income statement effect – hedging instruments)
	EUR in millions	EUR in millions		EUR in millions
Assets				
Interest risk				
Interest-related transactions: interest rate swap	211,820	2,306	Derivatives designated for hedge accounting	28,932
Liabilities and equity				
Interest risk				
Interest-related transactions: interest rate swap	21,863	219	Derivatives designated for hedge accounting	1,573

Disclosures on hedging instruments in macro fair value hedge accounting by risk type – 2021

	Par value of hedging instruments	Carrying amount of hedging instruments	Statement of financial position items in which the hedging instruments are reported	Fair value changes in hedging instruments to determine hedge ineffectiveness (income statement effect – hedging instruments)
	EUR in millions	EUR in millions		EUR in millions
Assets				
Interest risk				
Interest-related transactions: interest rate swap	77,829	29	Derivatives designated for hedge accounting	2,003
Liabilities and equity				
Interest risk				
Interest-related transactions: interest rate swap	151,426	2,373	Derivatives designated for hedge accounting	5,304

Analysis of par values of hedging instruments by remaining terms as of 31 December 2022

Due	In up to 1 month	Between 1 and 3 months	Between 3 months and 1 year	Between 1 year and 5 years	In more than 5 years
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Assets					
Interest risk					
Interest-related transactions: interest rate swap	0	488	12,015	94,337	104,981
Liabilities and equity					
Interest risk					
Interest-related transactions: interest rate swap	6,850	450	4,088	7,763	2,712

Analysis of par values of hedging instruments by remaining terms as of 31 December 2021

Due	In up to 1 month	Between 1 and 3 months	Between 3 months and 1 year	Between 1 year and 5 years	In more than 5 years
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Assets					
Interest risk					
Interest-related transactions: interest rate swap	0	0	1,838	17,610	58,381
Liabilities and equity					
Interest risk					
Interest-related transactions: interest rate swap	6,782	4,100	16,406	81,116	43,022

(60) Additional disclosures on derivatives

Analysis of derivatives by type of hedge

	Par value		Fair value 31 Dec. 2022		Fair value 31 Dec. 2021	
	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions	positive EUR in millions	negative EUR in millions	positive EUR in millions	negative EUR in millions
Interest-related derivatives	621,417	584,335	4,478	9,268	6,111	4,040
Cross-currency derivatives	148,515	165,569	6,846	5,227	7,727	2,311
Credit derivatives	0	0	0	0	0	0
Total	769,932	749,904	11,324	14,496	13,838	6,351

Cross-currency swaps are presented under Cross-currency derivatives.

Analysis of derivatives by counterparty

	Par value		Fair value 31 Dec. 2022		Fair value 31 Dec. 2021	
	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions	positive EUR in millions	negative EUR in millions	positive EUR in millions	negative EUR in millions
OECD banks	736,340	737,960	10,685	11,700	13,222	6,261
Non-OECD banks	172	161	4	6	0	3
Other counterparties	33,308	11,676	635	2,762	598	85
Public sector	112	107	0	27	18	2
Total	769,932	749,904	11,324	14,496	13,838	6,351

The analysis includes financial and credit derivatives which are presented in Derivatives designated for hedge accounting and the sub-item Other derivatives under Financial assets at fair value or Financial liabilities at fair value. Embedded derivatives that must be bifurcated are not included.

The economic hedge effect of financial derivatives with an aggregate principal amount of EUR 688.0 billion (31 Dec. 2021: EUR 669.2 billion) is reflected in the accounts; it was not possible to reflect the risk-mitigating impact of the remaining financial derivatives in the accounts (hedge accounting).

Unchanged from 31 December 2021, KfW Group did not pledge any collateral (in the form of securities) under derivative transactions that can be resold or repledged at any time without payments being past due.

However, liquid collateral totalling EUR 5,154 million (31 Dec. 2021: EUR 829 million) was provided, which is recognised under Financial assets at amortised cost – Loans and advances to banks or customers.

Unchanged from 31 December 2021, KfW Group did not receive any collateral (in the form of securities) under derivative transactions that can be resold or repledged at any time without payments by the protection seller being past due.

However, liquid collateral totalling EUR 3,922 million (31 Dec. 2021: EUR 7,717 million) was accepted, which was reported under Financial liabilities at amortised cost – Liabilities to banks or Liabilities to customers.

The volume of initial differences between the transaction price and model value arising from the use of a valuation technique that makes significant use of unobservable data which have yet to be amortised over the life of the financial instrument developed as follows during the reporting period:

Day one profit or loss

	2022 EUR in millions	2021 EUR in millions
As of 1 Jan.	–108	–101
Addition	–15	–20
Reversal	17	18
Exchange rate changes	–1	–5
As of 31 Dec.	–108	–108

The net gains/losses from financial derivatives not qualifying for hedge accounting includes amortisation effects in an amount of EUR 10 million (2021: EUR 10 million).

(61) Management of the transition to new reference rates

With respect to the transition to new alternative risk-free reference rates, KfW is relying on a group-wide project structure that was set up at an early stage and covers the main areas of focus. In addition to defining a transition strategy in line with supervisory requirements, the procedural and IT conditions have been established to satisfy the complex requirements of a transition of derivatives and spot transactions. These comprehensive adjustment measures result from the complex requirements relating to valuation models, risk management and accounting.

All inter-bank derivatives referencing GBP, CHF and JPY LIBOR were transitioned into the new interest-rate environment either actively or passively via the ISDA fallback protocol as planned.

Regarding loans, a large share of the floating rate transactions in GBP, CHF and JPY were also converted to alternative reference rates in 2022. Some USD LIBOR transitions have already been carried out as well. This involved a transition to forward-looking term rates in addition to transitioning to rates compounded overnight in arrears.

Key assumptions relating to benchmark reform

- KfW assumes that EURIBOR-based reference rates will be admissible for the foreseeable future. A transition is therefore not necessary for these instruments in the medium term.
- The main reference rates affected by the transition that are relevant for KfW's financial instruments are:
 - USD LIBOR: transition to SOFR
 - GBP LIBOR: transition to SONIA
 - CHF LIBOR: transition to SARON
 - JPY LIBOR: transition to TONA

For the USD LIBOR reference rates, derivatives were also designated for hedge accounting effective 31 December 2022. USD LIBOR derivatives are being actively converted and passively transitioned via the ISDA fallback protocol. The transition is expected to be completed in 2023. This has no accounting impact. The hedges, in particular, remain unaffected.

The following holdings are affected by the benchmark reform:

Risk exposure/carrying amounts and nominal amounts

	Non-derivative financial assets	Non-derivative financial liabilities	Derivative financial instruments designated for hedge accounting	Derivative financial instruments not designated for hedge accounting
	Carrying amount	Carrying amount	Nominal volumes (gross)	Nominal volumes (gross)
Reference rate (floating leg)	31 Dec. 2022	31 Dec. 2022	31 Dec. 2022	31 Dec. 2022
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
USD LIBOR	13,382	0	112,374	13,566
GBP LIBOR	60	0	0	0
EUR LIBOR	23	0	0	0

(62) Additional disclosures on financial liabilities at fair value

Disclosures on financial liabilities at fair value as of 31 December 2022

	Financial liabilities at fair value			Total EUR in millions
	Liabilities to banks	Liabilities to customers	Certificated liabilities	
	EUR in millions	EUR in millions	EUR in millions	
Carrying amount	208	812	6,699	7,718
Repayment amount at maturity	245	1,187	9,321	10,752
Difference	37	375	2,622	3,034
thereof borrowings for which the repayment amount builds up as a result of the capitalisation over time of interest due	0	371	2,755	3,126

Disclosures on financial liabilities at fair value as of 31 December 2021

	Financial liabilities at fair value			Total EUR in millions
	Liabilities to banks	Liabilities to customers	Certificated liabilities	
	EUR in millions	EUR in millions	EUR in millions	
Carrying amount	255	1,003	8,416	9,674
Repayment amount at maturity	245	1,187	9,330	10,762
Difference	-10	184	915	1,088
thereof borrowings for which the repayment amount builds up as a result of the capitalisation over time of interest due	0	185	1,735	1,919

(63) Contractual payment obligations arising from financial instruments

Analysis of payment obligations by maturity range as of 31 December 2022¹⁾

	Up to 1 month	More than 1 and up to 3 months	More than 3 months and up to 1 year	More than 1 and up to 5 years	More than 5 years	Total
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Financial liabilities at amortised cost						
Liabilities to banks	8,046	1,962	60	738	959	11,764
Liabilities to customers	9,906	6,007	14,682	29,388	6,130	66,113
Certificated liabilities	19,519	38,837	54,425	231,400	115,403	459,584
Financial liabilities at fair value						
Liabilities to banks	0	0	1	5	247	254
Liabilities to customers	0	53	6	69	1,202	1,330
Certificated liabilities	24	14	298	1,298	9,767	11,400
Net obligations arising from derivative financial instruments	-441	167	-863	-2,987	407	-3,718
<i>thereof Gross obligations arising from derivative financial instruments</i>	17,920	22,773	23,898	85,172	28,573	178,336
Obligations arising from on-balance sheet financial instruments	37,053	47,040	68,608	259,911	134,115	546,727
Obligations arising from off-balance sheet transactions	135,695	0	0	0	0	135,695
Total	172,748	47,040	68,608	259,911	134,115	682,422

¹⁾ Net obligations arising from derivative financial instruments comprise payment obligations which are offset against the corresponding payment claims from derivative contracts; gross obligations are reported as obligations arising from derivative financial instruments. Off-balance sheet transactions are generally allocated to the first maturity range.

Analysis of payment obligations by maturity range as of 31 December 2021¹⁾

	Up to 1 month	More than 1 and up to 3 months	More than 3 months and up to 1 year	More than 1 and up to 5 years	More than 5 years	Total
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Financial liabilities at amortised cost						
Liabilities to banks	9,614	1,332	40	1,876	709	13,572
Liabilities to customers	3,434	2,706	15,442	13,496	8,739	43,817
Certificated liabilities	17,813	33,326	69,178	215,374	109,035	444,726
Financial liabilities at fair value						
Liabilities to banks	0	0	1	5	249	255
Liabilities to customers	0	3	6	121	1,209	1,339
Certificated liabilities	38	8	203	1,122	10,054	11,425
Net obligations arising from derivative financial instruments	-621	-817	-2,819	-7,099	-5,979	-17,335
<i>thereof Gross obligations arising from derivative financial instruments</i>	11,116	26,219	34,170	75,345	21,312	168,163
Obligations arising from on-balance sheet financial instruments	30,278	36,558	82,051	224,896	124,015	497,798
Obligations arising from off-balance sheet transactions	116,290	0	0	0	0	116,290
Total	146,568	36,558	82,051	224,896	124,015	614,088

¹⁾ Net obligations arising from derivative financial instruments comprise payment obligations which are offset against the corresponding payment claims from derivative contracts; gross obligations are reported as obligations arising from derivative financial instruments. Off-balance sheet transactions are generally allocated to the first maturity range.

The maturity analysis of lease liabilities as lessee is reported under Other notes (in the “Leasing transactions as lessee” section).

(64) Disclosures on repurchase agreements

Disclosures on repo transactions

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Carrying amount of securities sold under repo transactions that continue to be recognised in Financial assets at amortised cost – Securities and investments	498	2,086
Financial liabilities at amortised cost – Liabilities to banks (countervalue)	501	2,052
Financial liabilities at amortised cost – Liabilities to customers (German Finance Agency)	2,367	0

The fair value of interest-bearing securities sold under repo transactions that continue to be recognised in Financial assets at amortised cost totalled EUR 498 million (31 Dec. 2021: EUR 2,088 million). The fair value of the corresponding repayment obligations was EUR 501 million (31 Dec. 2021: EUR 2,052 million).

Under Liabilities to customers, the group reported repo transactions with the German Finance Agency in an amount of EUR 2,367 million (31 Dec. 2021: EUR 0 million), under which securities sold under repo transactions were available, with KfW acting as borrower in securities lending transactions.

Moreover, as in 2021, KfW Group did not pledge any collateral (in the form of securities) under repo transactions that can be resold or repledged at any time without payments being past due.

As in 2021, the group did not receive any collateral (in the form of securities) under repo transactions that can be resold or repledged at any time without payments being past due.

As in 2021, the group neither pledged nor accepted any liquid collateral.

Disclosures on reverse repo transactions

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Financial assets at amortised cost – Loans and advances to banks (countervalue)	0	0
Financial assets at amortised cost – Loans and advances to customers (countervalue)	0	0
Total	0	0

The fair value of interest-bearing securities purchased under reverse repos that are not recognised amounted to EUR 0 million (31 Dec. 2021: EUR 0 million).

Moreover, unchanged from 31 December 2021, KfW Group did not receive any collateral (in the form of securities) under reverse repo transactions that can be resold or repledged at any time without payments by the protection seller being past due.

Unchanged from 31 December 2021, the group did not pledge any collateral (in the form of securities) under reverse repo transactions that can be resold or replugged at any time without payments being past due.

Unchanged from 31 December 2021, the group neither pledged nor accepted any liquid collateral.

(65) Disclosure on offsetting financial instruments

Disclosures on financial assets with netting agreements as of 31 December 2022

	Carrying amount of financial assets before offsetting (gross amount)	Netted figure as carrying amount of financial liabilities (gross amount)	Reported financial assets (net amount)	Carrying amount of non-offsettable financial liabilities	Fair value of collateral received	Total net amount
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
OTC derivatives	38,602	27,300 ¹⁾	11,302	7,745	3,542	15
Reverse repos	0	0	0	0	0	0
Total	38,602	27,300	11,302	7,745	3,542	15

¹⁾ Thereof obligations from cash collateral for OTC derivatives with EUREX as the central counterparty in an amount of EUR 6,563 million.

Disclosures on financial liabilities with netting agreements as of 31 December 2022

	Carrying amount of financial liabilities before offsetting (gross amount)	Netted figure as carrying amount of financial assets (gross amount)	Reported financial liabilities (net amount)	Carrying amount of non-offsettable financial assets	Fair value of collateral pledged	Total net amount
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
OTC derivatives	33,977	20,737	13,240	7,745	5,149	345
Repos	2,868	0	2,868	0	2,850	18
Total	36,845	20,737	16,108	7,745	8,000	363

The disclosures on financial instruments with netting agreements only include gross and net amounts for financial assets and financial liabilities with netting agreements. The Notes on the two classes Derivatives designated for hedge accounting and Other derivatives also include financial assets with a carrying amount of EUR 185 million (31 Dec. 2021: EUR 631 million) and financial liabilities with a carrying amount of EUR 1,261 million (31 Dec. 2021: EUR 49 million), in particular from bifurcated embedded derivatives and derivatives not subject to netting agreements.

Disclosures on financial assets with netting agreements as of 31 December 2021

	Carrying amount of financial assets before offsetting (gross amount)	Netted figure as carrying amount of financial liabilities (gross amount)	Reported financial assets (net amount)	Carrying amount of non-offsettable financial liabilities	Fair value of collateral received	Total net amount
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
OTC derivatives	19,127	5,899 ¹⁾	13,228	5,417	7,644	168
Reverse repos	0	0	0	0	0	0
Total	19,127	5,899	13,228	5,417	7,644	168

¹⁾ Thereof obligations from cash collateral for OTC derivatives with EUREX as the central counterparty in an amount of EUR 282 million.

Disclosures on financial liabilities with netting agreements as of 31 December 2021

	Carrying amount of financial liabilities before offsetting (gross amount)	Netted figure as carrying amount of financial assets (gross amount)	Reported financial liabilities (net amount)	Carrying amount of non-offsettable financial assets	Fair value of collateral pledged	Total net amount
	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions	EUR in millions
OTC derivatives	11,932	5,617	6,315	5,417	790	108
Repos	698	0	698	0	698	0
Total	12,630	5,617	7,013	5,417	1,488	108

The Note "Disclosures on repurchase agreements", as of 31 December 2021, also includes financial liabilities with a carrying amount of EUR 1,354 million from funding via TLTRO III that is not subject to netting agreements. Receivables from reverse repo transactions are reported under Financial assets at amortised cost – Loans and advances to banks and Loans and advances to customers.

Other notes

(66) Off-balance sheet transactions

Analysis by class

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Irrevocable loan commitments	129,648	111,640
Financial guarantee contracts	2,054	1,737
Contingent liabilities from financial guarantees	1,490	1,441
Other contingent liabilities	2,388	2,065
Total	135,580	116,883

All off-balance-sheet transactions are disclosed in the Notes at their par values less any related provisions.

Other contingent liabilities include payment obligations attributable to equity investments which are not fully paid up and do not have to be consolidated.

As part of the sale of its stake in Deutsche Industriebank ("IKB") in 2008, KfW agreed to indemnify IKB for certain legal risks up to a certain amount after IKB's excess. As of the end of the reporting period, no proceedings are pending against IKB which are relevant in this context.

In accordance with IAS 37.92, no further disclosures on contingent liabilities were made.

(67) Trust activities and administered loans

Analysis of trust activities (transactions in KfW's own name but for the account of third parties)

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Loans and advances to banks	724	761
Loans and advances to customers	9,957	10,239
Securities and investments	8,692	8,056
Assets held in trust	19,374	19,056
Liabilities to banks	0	0
Liabilities to customers	19,374	19,056
Liabilities held in trust	19,374	19,056

EUR 13,348 million (31 Dec. 2021: EUR 13,337 million) of the assets held in trust is attributable to the group companies KfW and DEG. Additional transactions with the Federal Government as trustor in an amount of EUR 4,352 million (31 Dec. 2021: EUR 4,302 million) are transactions mandated by the German Federal Government in accordance with Article 2 (4) of the KfW Law and are included in Securities and investments.

Moreover, KfW held guarantees of EUR 145 million (31 Dec. 2021: EUR 80 million) issued under the European Fund for Sustainable Development (EFSD), in trust for the European Union.

Volume of administered loans granted (loans in the name and for the account of third parties)

	31 Dec. 2022 EUR in millions	31 Dec. 2021 EUR in millions
Administered loans	19,657	20,189

(68) Leasing transactions as lessee

Disclosures on lessee agreements as of 31 December 2022

	Due within one year	Due in between one and five years	Due in more than five years	Total
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Lease liabilities (undiscounted)	11	25	9	45

Disclosures on lessee agreements as of 31 December 2021

	Due within one year	Due in between one and five years	Due in more than five years	Total
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Lease liabilities (undiscounted)	13	33	13	59

Lease payments in an amount of EUR 1 million (2021: EUR 1 million) were incurred for short-term leases in the reporting period. For leases in which the underlying asset is of low value, lease payments amounted to EUR 2 million (2021: EUR 0 million). KfW does not apply recognition requirements in either case as provided for in IFRS 16.5.

(69) Average number of employees during the financial year

	2022	2021
Female employees	3,843	3,740
Male employees	4,140	3,994
Sex not known	1	0
Total	7,984	7,734
Staff not covered by collective agreements	5,242	5,047
Staff covered by collective agreements	2,325	2,276
Staff in external offices	417	411

(70) Remuneration report

The remuneration report describes the basic structure of the remuneration plan for members of the Executive Board and Board of Supervisory Directors; it also discloses their remuneration on an individual basis. The remuneration report is an integral part of the notes to the consolidated financial statements.

Overview of total remuneration of members of the Executive Board and Board of Supervisory Directors

	2022 EUR in thousands	2021 ¹⁾ EUR in thousands
Members of the Executive Board	3,255.2	3,651.0
Former members of the Executive Board and their surviving dependants	4,868.5	4,474.5
Members of the Board of Supervisory Directors	194.8	197.4
Total	8,318.5	8,322.9

- 1) The following changes were made in the composition of the Executive Board in financial year 2021:
- Dr Günther Bräunig stepped down from the Executive Board of KfW as of 31 October 2021.
 - Dr Ingrid Hengster stepped down from the Executive Board of KfW as of 31 December 2021.
 - Stefan Wintels was appointed to the Executive Board of KfW with effect from 1 October 2021.
 - Christiane Laibach was appointed to the Executive Board of KfW with effect from 1 June 2021.

Remuneration of the Executive Board

The remuneration system for KfW's Executive Board is aimed at appropriately compensating members of the Executive Board for their duties and responsibilities. Executive Board contracts are drawn up based on the 1992 version of the policy for hiring executive board members at credit institutions of the Federal Government (*Grundsätze für die Anstellung der Vorstandsmitglieder bei den Kreditinstituten des Bundes*). The Federal Public Corporate Governance Code (*Public Corporate Governance Kodex des Bundes – "PCGK"*) is taken into account when drawing up contracts. Each contract is individualised accordingly on this basis.

Components of remuneration

The Executive Board members receive fixed monetary remuneration paid in equal monthly instalments.

The following table shows total remuneration, broken down into remuneration components and other forms of remuneration, as well as additions to pension provisions for each member of the Executive Board.

Annual remuneration of the Executive Board and additions to pension provisions in financial years 2022 and 2021

	Salary		Other remuneration		Total		Additions to pension provisions ¹⁾	
	2022 EUR in thousands	2021 EUR in thousands	2022 EUR in thousands	2021 EUR in thousands	2022 EUR in thousands	2021 EUR in thousands	2022 EUR in thousands	2021 EUR in thousands
Stefan Wintels (Chief Executive Officer) ²⁾	810.3	199.6	18.8	3.4	829.1	203.0	422.6	259.0
Dr Günther Bräunig ³⁾	/	665.3	/	22.3	/	687.6	/	1,311.7
Dr Ingrid Hengster ⁴⁾	/	574.3	/	39.5	/	613.8	/	305.2
Melanie Kehr	560.6	541.0	12.8	14.4	573.3	555.4	-565.5	297.5
Christiane Laibach ⁵⁾	549.1	315.6	24.8	19.9	573.9	335.5	117.1	204.2
Bernd Loewen	649.6	640.0	27.8	25.7	677.4	665.7	-2,200.3	-123.0
Dr Stefan Peiß	582.9	574.3	18.6	15.7	601.5	590.0	-1,793.8	-133.3
Total	3,152.5	3,510.1	102.7	140.9	3,255.2	3,651.0	-4,019.9	2,121.3

¹⁾ The discount rate for pension obligations increased in 2022 due to the rise in long-term capital market rates, from 1.32% (31 Dec. 2021) to 3.89% (31 Dec. 2022).

²⁾ Stefan Wintels was appointed to the Executive Board of KfW with effect from 1 October 2021. Stefan Wintels served as Co-CEO with Dr Günther Bräunig from 1 October until 31 October 2021. Stefan Wintels has served as the sole CEO since 1 November 2021.

³⁾ As Dr Günther Bräunig stepped down from the Executive Board of KfW as of 31 October 2021, his name will no longer be reported after 2022.

⁴⁾ As Dr Ingrid Hengster stepped down from the Executive Board of KfW as of 31 December 2021, her name will no longer be reported after 2022.

⁵⁾ Christiane Laibach was appointed to the Executive Board of KfW with effect from 1 June 2021.

Breakdown of other remuneration of the Executive Board in financial year 2022

	Company car	Group accident insurance	Health insurance	Long-term care insurance	Cost of maintaining a second home	Other	Total
	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands
Stefan Wintels (Chief Executive Officer) ¹⁾	12.3	0.6	4.7	0.9	0.0	0.3	18.8
Dr Günther Bräunig ²⁾	/	/	/	/	/	/	/
Dr Ingrid Hengster ³⁾	/	/	/	/	/	/	/
Melanie Kehr	7.5	0.4	4.2	0.3	0.0	0.3	12.8
Christiane Laibach ⁴⁾	11.8	0.4	4.1	0.4	7.8	0.3	24.8
Bernd Loewen	11.6	0.5	14.5	0.9	0.0	0.3	27.8
Dr Stefan Peiß	10.2	0.4	6.8	0.9	0.0	0.3	18.6
Total	53.5	2.2	34.4	3.4	7.8	1.5	102.7

¹⁾ Stefan Wintels was appointed to the Executive Board of KfW with effect from 1 October 2021.

²⁾ Dr Günther Bräunig stepped down from the Executive Board of KfW as of 31 October 2021.

³⁾ Dr Ingrid Hengster stepped down from the Executive Board of KfW as of 31 December 2021.

⁴⁾ Christiane Laibach was appointed to the Executive Board of KfW with effect from 1 June 2021.

Breakdown of other remuneration of the Executive Board in financial year 2021

	Company car	Group accident insurance	Health insurance	Long-term care insurance	Cost of maintaining a second home	Other	Total
	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands
Stefan Wintels (Chief Executive Officer) ¹⁾	1.9	0.1	1.2	0.2	0.0	0.0	3.4
Dr Günther Bräunig ²⁾	14.9	0.5	6.2	0.7	0.0	0.0	22.3
Dr Ingrid Hengster ³⁾	26.3	0.4	12.0	0.8	0.0	0.0	39.5
Melanie Kehr	9.3	0.4	4.2	0.5	0.0	0.0	14.4
Christiane Laibach ⁴⁾	6.9	0.2	2.6	0.2	10.0	0.0	19.9
Bernd Loewen	11.4	0.5	13.0	0.8	0.0	0.0	25.7
Dr Stefan Peiß	7.6	0.4	6.8	0.9	0.0	0.0	15.7
Total	78.3	2.5	46.0	4.1	10.0	0.0	140.9

¹⁾ Stefan Wintels was appointed to the Executive Board of KfW with effect from 1 October 2021.

²⁾ Dr Günther Bräunig stepped down from the Executive Board of KfW as of 31 October 2021.

³⁾ Dr Ingrid Hengster stepped down from the Executive Board of KfW as of 31 December 2021.

⁴⁾ Christiane Laibach was appointed to the Executive Board of KfW with effect from 1 June 2021.

Breakdown of remuneration of the Executive Board from secondary employment in financial years 2022 and 2021

	2022 EUR in thousands	2021 EUR in thousands
Stefan Wintels (Chief Executive Officer) ¹⁾	221.8	0.0
Melanie Kehr	33.8	30.6
Christiane Laibach ²⁾	0.0	0.0
Bernd Loewen	16.7	40.0
Dr Stefan Peiß	0.0	0.0

¹⁾ Stefan Wintels was appointed to the Executive Board of KfW with effect from 1 October 2021. Remuneration payments for 2022 will not be made until 2023.

²⁾ Christiane Laibach was appointed to the Executive Board of KfW with effect from 1 June 2021.

Responsibilities

The Presidial and Nomination Committee has discussed the Executive Board remuneration system including contract components since the committee structure was modified in accordance with the applicable Section 25d of the German Banking Act (*Kreditwesengesetz – “KWG”*) and adopts and regularly reviews it. The Presidial and Nomination Committee is advised on these matters by the Remuneration Committee, which in turn works together with the Risk and Credit Committee in order to perform its duties. Likewise after consulting with the Remuneration Committee on the matter, the Board of Supervisory Directors decides upon the basic structure of the Executive Board’s remuneration system.

The Presidial and Nomination Committee most recently discussed remuneration matters on 15 December 2022.

Fringe benefits

Other remuneration largely comprises the contractual fringe benefits. Executive Board members are entitled to a company car with driver services for business and personal use. Executive Board members reimburse KfW for using a company car with a driver for private purposes in accordance with applicable tax regulations. They are reimbursed under tax regulations for the cost of maintaining a second home for business reasons.

Executive Board members are insured under a group accident insurance policy. Allowances are provided for health and long-term care insurance. Executive Board members are covered by a directors and officers liability insurance policy, which insures them against the risks of financial loss associated with their actions in their capacity as Executive Board members and by a supplemental legal expenses insurance policy and a contractual protection insurance policy. KfW Executive Board members acting in their management capacity are also protected by a special legal expenses group policy for employees covering criminal activities.

No remuneration is paid to members of the Executive Board for assuming executive body functions at group companies.

As with all other executives, Executive Board members may also opt to participate in the deferred remuneration programme – a supplemental company pension scheme financed via tax-free salary conversion. Moreover, they are entitled to anniversary bonuses in accordance with KfW's general company policy.

In addition, the fringe benefits include the cost of security systems at Executive Board members' homes; these benefits are not recognised as Other remuneration, but as Non-personnel expenses.

The contractual fringe benefits are subject to taxation as benefits in money's worth for Executive Board members if they cannot be granted on a tax-free basis or if this is contractually agreed. No Executive Board member was granted or promised any benefits by a third party during the past financial year with a view to his/her position as a member of the KfW Executive Board.

Pension benefits and other benefits in the case of early retirement

In accordance with Article 1 (3) of the KfW Bylaws, the appointment of an Executive Board member should not generally extend past the legal age of retirement. Upon reaching the age of 65 or statutory retirement age and the expiry of their Executive Board contract, Executive Board members are entitled to claim pension payments; they are also entitled to pension benefits if their employment relationship terminates due to permanent disability.

Pension commitments for Executive Board members as well as their surviving dependants are based on the 1992 version of the Federal Government's policy for hiring executive board members at credit institutions. The PCGK is taken into account when drawing up the Executive Board contracts.

Executive Board member contracts include a severance pay cap in accordance with the recommendations of the PCGK. In other words, payments to these Executive Board members due to early termination of the Executive Board function without good cause in accordance with Section 626 of the German Civil Code (*Bürgerliches Gesetzbuch* – “BGB”) should not exceed the equivalent of two years' salary or remuneration including fringe benefits for the remainder of the contract, depending on which of the amounts is lower.

The full benefit entitlement totalled 49% of the final salary in the reporting year with different contractual arrangements. The retirement benefit entitlement amounted to 70% of the full entitlement for first-time appointment, with an increase per completed year of service of 0.98 to 1.53 percentage points depending on the contract (from an initial 34.3% to a maximum of 49% of the final salary).

The Executive Board contracts contain additional individual provisions, in particular concerning vesting of pension benefits. The newer contracts also include provisions on retrospective pension contributions where pension benefits are not yet vested and the member in question has not been reappointed.

Pension payments to former Executive Board members or their surviving dependants were as follows in 2022 and 2021:

Pension payments to former Executive Board members or their surviving dependants

	2022		2021	
	Headcount	EUR in thousands	Headcount	EUR in thousands
Former members of the Executive Board	19	4,058.1	19	3,673.3
Surviving dependants	8	810.4	8	801.2
Total	27	4,868.5	27	4,474.5

Provisions for pension obligations to former members of the Executive Board and their surviving dependants in an amount of EUR 60,446 thousand (31 Dec. 2021: EUR 74,578 thousand) were set up at the end of financial year 2022.

Remuneration of members of the Board of Supervisory Directors

The amount of remuneration to members of the Board of Supervisory Directors is determined by the supervisory authority in accordance with Article 7 (10) of the KfW Bylaws. With the last revision in May 2010, remuneration to members of the Federal Government who are members of the Board of Supervisory Directors pursuant to Article 7 (1) No. 1 and No. 2 of the KfW Law was set at EUR 0.

In the reporting year, remuneration for other members of the Board of Supervisory Directors pursuant to Article 7 (1) Nos. 3–7 of the KfW Law amounted to EUR 5,100 p.a.; remuneration for membership of a Board of Supervisory Directors committee was a standard amount of EUR 600 p.a. for each member. Committee chairs did not receive special remuneration.

Members who join during the year receive their remuneration on a pro rata basis.

A daily allowance (EUR 200 per meeting day) is paid and travel expenses and applicable VAT are reimbursed upon request.

The following table provides details on the remuneration paid to the Board of Supervisory Directors in financial year 2022; stated amounts are net amounts in thousands of euros. Travel expenses are reimbursed upon submission of receipts and are not taken into account in the table.

Remuneration of members of the Board of Supervisory Directors for financial year 2022

No.	Name	Dates of membership	Board of Supervisory Directors membership ¹⁾	Committee membership ¹⁾	Daily allowance ³⁾	Total
		2022	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands
1.	Dr Robert Habeck	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
2.	Christian Lindner	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
3.	Doris Ahnen ⁵⁾		0.0	0.0	0.2	0.2
4.	Annalena Baerbock	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
5.	Dr Danyal Bayaz ^{2), 4)}	1 Jan. – 31 Dec.	5.1	0.0	0.2	5.3
6.	Katharina Beck	13 Jan. – 31 Dec.	5.1	0.5	0.2	5.8
7.	Dr André Berghegger	1 Jan. – 31 Dec.	5.1	1.8	0.6	7.5
8.	Volker Bouffier ^{2), 4)}	1 Jan. – 31 Dec.	5.1	1.2	0.2	6.5
9.	Dr Andreas Dressel ²⁾	1 Jan. – 31 Dec.	5.1	0.5	0.0	5.6
10.	Ingeborg Esser	1 Jan. – 31 Dec.	5.1	0.0	0.2	5.3
11.	Robert Feiger	1 Jan. – 31 Dec.	5.1	0.6	0.4	6.1
12.	Albert Füracker ^{2), 4)}	1 Jan. – 31 Dec.	5.1	0.0	0.2	5.3
13.	Olav Gutting ⁵⁾		0.0	0.0	0.2	0.2
14.	Dr Louis Hagen	1 Jan. – 31 Dec.	5.1	1.2	0.4	6.7
15.	Prof. Dr Hans-Günter Henneke	1 Jan. – 31 Dec.	5.1	0.0	0.4	5.5
16.	Reinhold Hilbers ²⁾	1 Jan. – 31 Dec.	5.1	1.8	1.2	8.1
17.	Reiner Hoffmann ⁴⁾	1 Jan. – 31 Dec.	5.1	1.2	0.6	6.9
18.	Gerhard Hofmann	1 Jan. – 6 Apr.	1.5	0.3	0.2	2.0
19.	Dr Bruno Hollnagel	1 Jan. – 31 Dec.	5.1	0.0	0.6	5.7
20.	Verena Hubertz	13 Jan. – 31 Dec.	5.1	1.4	0.0	6.5
21.	Dr Dirk Jandura	1 Jan. – 31 Dec.	5.1	0.5	0.8	6.4
22.	Alois Karl	1 Jan. – 31 Dec.	5.1	0.6	1.7	7.4
23.	Andrea Kocsis ⁴⁾	1 Jan. – 31 Dec.	5.1	0.0	0.6	5.7
24.	Stefan Körzell	1 Jan. – 31 Dec.	5.1	1.2	0.4	6.7
25.	Dr Joachim Lang	1 Jan. – 31 Dec.	5.1	1.2	0.0	6.3
26.	Steffi Lemke	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
27.	Rainer Neske ⁴⁾	1 Jan. – 31 Dec.	5.1	0.6	1.2	6.9
28.	Cem Özdemir	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
29.	Dr Hans-Walter Peters	1 Jan. – 31 Dec.	5.1	2.5	1.0	8.6
30.	Achim Post	13 Jan. – 31 Dec.	5.1	0.9	0.4	6.4
31.	Daniel Quinten	7 Apr. – 31 Dec.	3.6	0.9	0.8	5.3
32.	Michael Richter ²⁾	1 Jan. – 31 Dec.	5.1	0.0	0.2	5.3
33.	Joachim Rukwied	1 Jan. – 31 Dec.	5.1	0.6	0.4	6.1
34.	Frank Schäffler	13 Jan. – 31 Dec.	5.1	0.9	0.2	6.2
35.	Helmut Schleweis	1 Jan. – 31 Dec.	5.1	2.5	0.0	7.6
36.	Svenja Schulze	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
37.	Holger Schwannecke ⁴⁾	1 Jan. – 31 Dec.	5.1	1.4	1.2	7.7
38.	Dietmar Strehl ²⁾	1 Jan. – 31 Dec.	5.1	0.9	0.8	6.8
39.	Dr Martin Wansleben ⁴⁾	1 Jan. – 31 Dec.	5.1	0.5	0.6	6.2
40.	Dr Volker Wissing	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
Total			153.0	25.7	16.1	194.8

¹⁾ The amounts had not yet been paid out as of the reporting date 31 December 2022.

²⁾ Amount governed by state law.

³⁾ Amounts for financial year 2022 until the date of assessment. Any later claims will be included in the next report.

⁴⁾ The daily allowance includes payments for 2021.

⁵⁾ Payments for meeting attendance for 2021.

Remuneration of members of the Board of Supervisory Directors for financial year 2021

No.	Name	Dates of membership	Board of Supervisory Directors membership ¹⁾	Committee membership ¹⁾	Daily allowance ³⁾	Total
		2021	EUR in thousands	EUR in thousands	EUR in thousands	EUR in thousands
1.	Olaf Scholz	1 Jan. – 8 Dec.	0.0	0.0	0.0	0.0
2.	Christian Lindner	8 Dec. – 31 Dec.	0.0	0.0	0.0	0.0
3.	Peter Altmaier	1 Jan. – 8 Dec.	0.0	0.0	0.0	0.0
4.	Dr Robert Habeck	8 Dec. – 31 Dec.	0.0	0.0	0.0	0.0
5.	Doris Ahnen ²⁾	1 Jan. – 31 Dec.	5.1	0.6	0.2	5.9
6.	Annalena Baerbock	8 Dec. – 31 Dec.	0.0	0.0	0.0	0.0
7.	Sören Bartol	1 Jan. – 13 Dec.	5.1	1.8	0.8	7.8
8.	Dr Danyal Bayaz	8 Oct. – 31 Dec.	1.3	0.0	0.0	1.3
9.	Dr André Berghegger	1 Jan. – 31 Dec.	5.1	1.8	0.8	7.8
10.	Dr Holger Bingmann ⁴⁾	1 Jan. – 31 Dec.	5.1	0.6	1.4	7.1
11.	Volker Bouffier ²⁾	1 Jan. – 31 Dec.	5.1	1.2	0.4	6.7
12.	Ingeborg Esser ⁴⁾	1 Jan. – 31 Dec.	5.1	0.0	0.8	5.9
13.	Robert Feiger	6 Jan. – 31 Dec.	5.1	0.6	0.4	6.1
14.	Albert Füracker ²⁾	1 Jan. – 31 Dec.	5.1	0.0	0.2	5.3
15.	Verena Göppert	1 Jan. – 31 Dec.	5.1	0.0	0.4	5.5
16.	Olav Gutting	1 Jan. – 31 Dec.	5.1	0.6	0.8	6.5
17.	Dr Louis Hagen	1 Jan. – 31 Dec.	5.1	1.2	1.4	7.7
18.	Reinhold Hilbers ²⁾	1 Jan. – 31 Dec.	5.1	1.8	1.0	8.0
19.	Reiner Hoffmann	6 Jan. – 31 Dec.	5.1	1.0	0.4	6.5
20.	Gerhard Hofmann	1 Jan. – 31 Dec.	5.1	1.2	1.2	7.5
21.	Dr Bruno Hollnagel	1 Jan. – 31 Dec.	5.1	0.0	0.6	5.7
22.	Johannes Kahrs	1 Jan. – 19 Nov.	4.7	1.1	0.0	5.8
23.	Alois Karl ⁴⁾	1 Jan. – 31 Dec.	5.1	0.6	1.4	7.1
24.	Julia Klöckner	1 Jan. – 8 Dec.	0.0	0.0	0.0	0.0
25.	Andrea Kocsis ⁴⁾	1 Jan. – 31 Dec.	5.1	0.0	0.6	5.7
26.	Stefan Körzell	6 Jan. – 31 Dec.	5.1	1.0	0.6	6.7
27.	Dr Joachim Lang	6 Jan. – 31 Dec.	5.1	1.0	0.2	6.3
28.	Steffi Lemke	8 Dec. – 31 Dec.	0.0	0.0	0.0	0.0
29.	Heiko Maas	1 Jan. – 8 Dec.	0.0	0.0	0.0	0.0
30.	Dr Gerd Müller	1 Jan. – 8 Dec.	0.0	0.0	0.0	0.0
31.	Rainer Neske	6 Jan. – 31 Dec.	5.1	0.6	1.2	6.9
32.	Cem Özdemir	8 Dec. – 31 Dec.	0.0	0.0	0.0	0.0
33.	Dr Hans-Walter Peters	6 Jan. – 31 Dec.	5.1	2.2	1.2	8.5
34.	Joachim Rukwied ⁴⁾	1 Jan. – 31 Dec.	5.1	0.6	0.6	6.3
35.	Andreas Scheuer	1 Jan. – 8 Dec.	0.0	0.0	0.0	0.0
36.	Helmut Schleweis	6 Jan. – 31 Dec.	5.1	2.2	0.0	7.3
37.	Svenja Schulze (until 8 Dec. BMU, since 8 Dec. BMZ)	1 Jan. – 31 Dec.	0.0	0.0	0.0	0.0
38.	Holger Schwannecke	1 Jan. – 31 Dec.	5.1	1.8	0.4	7.4
39.	Edith Sitzmann ²⁾	1 Jan. – 11 May	2.1	0.0	0.0	2.1
40.	Peter Strobel ²⁾	1 Jan. – 31 Dec.	5.1	1.2	1.0	7.3
41.	Heike Taubert ²⁾	1 Jan. – 31 Dec.	5.1	0.0	0.4	5.5
42.	Michael Theurer ⁴⁾	1 Jan. – 15 Dec.	5.1	1.1	0.2	6.4
43.	Dr Martin Wansleben	1 Jan. – 31 Dec.	5.1	0.6	0.8	6.5
44.	Dr Volker Wissing	8 Dec. – 31 Dec.	0.0	0.0	0.0	0.0
Total			151.0	26.7	19.4	197.4

¹⁾ The amounts had not yet been paid out as of the reporting date 31 December 2021.

²⁾ Amount governed by state law.

³⁾ Amounts for financial year 2021 until the date of assessment. Any later claims will be included in the next report.

⁴⁾ The daily allowance includes payments for 2020.

There are no pension obligations for members of the Board of Supervisory Directors.

Members of the Board of Supervisory Directors did not receive remuneration in the reporting year for personal services provided.

Members of the Board of Supervisory Directors are also covered by a directors and officers liability insurance policy, which insures them against the risks of financial loss associated with their actions in their capacity as Supervisory Directors and by a supplemental legal expenses insurance policy and a contractual protection insurance policy. There are currently no deductibles agreed. KfW Supervisory Directors acting in that capacity are also protected by both a special legal expenses group policy for employees covering criminal action brought against Supervisory Directors and by a group accident insurance policy.

(71) Related party disclosures

Transactions between related parties and KfW Group must be disclosed in accordance with IAS 24 requirements. KfW Group's related parties include its subsidiaries, which are not consolidated for reasons of immateriality, joint ventures, associates, KfW shareholders, interests held by the Federal Government over which it directly has significant influence, key management personnel and their family members. Natural persons in key management positions considered to be related parties in accordance with IAS 24 include the members of the Executive Board, the Directors of KfW, the members of the Board of Supervisory Directors, members of the management boards and, if applicable, of the supervisory boards of all consolidated subsidiaries and their close family members. Transactions with related parties are normally concluded at arm's length as part of operating activities.

KfW has exercised the relief option in accordance with IAS 24.25 for government-related entities.

Transactions with shareholders

KfW is a public-law institution in which the Federal Republic of Germany (Federal Government) holds an 80% stake and the Federal States hold a 20% stake. Any transactions with the Federal Government and the Federal States in financial year 2022 are covered by the rules and regulations set forth in the KfW Law. This also includes guarantees received for operations in which the Federal Republic of Germany has a state interest and for which the Federal Government has mandated KfW (mandated transactions in accordance with article 2 (4) of the KfW Law). Transactions with the Federal Government are, as a rule, offset by countertrade transactions with a third party. They do not constitute transactions within the meaning of IAS 24. For this reason, the treatment under IAS 24 is exclusively limited to business relationships with the Federal Government.

KfW Group reported receivables in an amount of EUR 19.3 billion (31 Dec. 2021: EUR 19.9 billion) arising from business relationships with shareholders, resulting in particular from the promotional mandate. These include, for example, the holding arrangements and the BAföG government loans. Notes from the liquidity portfolio are held in "Financial assets at amortised cost" under Securities and investments in an amount of EUR 3.3 billion (31 Dec. 2021: EUR 3.9 billion). Under Other assets, KfW mainly reported claims for reimbursement from the Federal Government in an amount of EUR 626 million (31 Dec. 2021: EUR 643 million); these were offset in the same amount by provisions relating to agency agreements. Assets are offset by liabilities of EUR 8.2 billion (31 Dec. 2021: EUR 4.5 billion). These primarily included the liquidity made available to KfW in its paying agent role relating to the gas price cap (Emergency aid Gas & Heat), but which has not yet been drawn, and the liabilities from dividend income to be paid to the Federal Government.

Irrevocable loan commitments of around EUR 12.1 billion (31 Dec. 2021: EUR 12.4 billion) were granted under the BAföG government loans. On the other hand, the group received loan commitments and guarantees from the shareholders in an amount of EUR 158.0 billion (31 Dec. 2021: EUR 118.3 billion), including for stabilisation measures through extensive liquidity assistance for businesses during the coronavirus pandemic, for the market funds business of the business sector KfW Development Bank and for project and real estate financing. Companies affected by the Russia-Ukraine war or sanctions against Russia and Belarus were able to obtain low interest-rate funding under the “KfW Special Programme UBR 2022” launched in May 2022. The Federal Government assumed the guarantee for the risks relating to this programme. The Federal Government mandated further transactions in 2022 for measures to support the energy sector and to mitigate the impact of the Russia-Ukraine crisis on affected companies. These are secured in full by federal guarantees. They include liquidity support for collateral pledged by companies trading on futures exchanges in electricity, natural gas and emission certificates (see “Development of KfW Group” in the management report).

Transactions with shareholders resulted in Net interest income of EUR 48 million as of 31 December 2022 (31 Dec. 2021: EUR 19 million). This also included EUR 23 million (31 Dec. 2021: EUR 30 million) reimbursed by the Federal Government for interest not charged to end borrowers of student loans due to the coronavirus pandemic. The Federal Government will continue its reimbursements until 30 September 2022. There were also agency agreements between the Federal Government and KfW, which are reflected in Net commission income, in particular. Please refer to the information provided in the Notes on “Net commission income” and “Trust activities”.

Transactions with interests held by the Federal Government

As of 31 December 2022, KfW maintained credit balances at Deutsche Bundesbank in an amount of EUR 51.8 billion (31 Dec. 2021: EUR 42.4 billion). This resulted in interest income of EUR 54 million (2021: EUR –210 million).

Overall, KfW recognised liabilities to the German Finance Agency of EUR 50.8 billion (31 Dec. 2021: EUR 35.7 billion).

In the course of financial year 2022, the German Finance Agency transferred German government securities in an amount of EUR 36.1 billion to KfW for funding under the Energy security package via uncollateralised securities lending transactions. Collateralised repo transactions for a par value totalling EUR 2.4 billion were then concluded with the German Finance Agency, based on the previously transferred German government securities, which were not recognised by KfW. Following collateralisation of the repo transactions with the German Finance Agency, cash collateral of EUR 2.4 billion went to KfW which it recognised in Financial liabilities – Liabilities to costumers (see notes on “Repurchase agreements and securities lending” and “Disclosures on repurchase agreements”).

Funding for the KfW Special Programme 2020, with which KfW had been mandated by the Federal Government to support the German economy during the COVID-19 crisis, was provided via the Economic Stabilisation Fund (“WSF”). The same applies to the funding of measures to support the energy sector via allocated lending. The WSF is administered by the German Finance Agency, which also performs the tasks in its own name. KfW reported promissory note loans under liabilities in this context. The promissory note loans are hedged against interest risk by means of a micro hedge. This resulted in a net gain from hedge accounting in an amount of EUR 1.9 billion (31 Dec. 2021: EUR 0.4 billion). Transactions with the remainder of the interests held by the Federal Government primarily include loans in an amount of EUR 449 million (31 Dec. 2021: EUR 638 million) in connection with corporate financing.

Transactions with group companies

Transactions with group companies largely resulted in liabilities of EUR 66 million to tbG Technologie-Beteiligungsgesellschaft mbH (31 Dec. 2021: EUR 57 million).

Transactions with key persons

The business relationships between KfW and natural persons considered to be related parties are primarily determined by the KfW Bylaws and by applying the principles of the Federal Public Corporate Governance Code. Under its promotional mandate, KfW primarily disbursed direct loans, totalling EUR 54 thousand (31 Dec. 2021: EUR 53 thousand), for education financing and financing grants for electric vehicle charging stations. The conditions and prices reflect market conditions or are concluded in accordance with KfW's general conditions for its loan programmes open to the general public.

Please refer to the remuneration report for details on remuneration of the Executive Board and the Board of Supervisory Directors.

(72) Auditor's fees

	2022	2021
	EUR in thousands	EUR in thousands
Audit	7,163	6,027
Other attestation services	828	1,067
Total	7,991	7,095

(73) Disclosures on unconsolidated structured entities

KfW Group's unconsolidated structured entities within the meaning of IFRS 12 relate to the following business sectors:

Structured entities in the business sector Financial markets

KfW makes investments in ABS and ABCP transactions as part of its liquidity management and to promote the financing of climate and environmental protection projects. Moreover, the business sector Financial markets also manages an existing portfolio to which no further investments are added. This portfolio currently consists of securities issued since 2004.

As of 31 December 2022, the carrying amount of the positions held totalled EUR 5.9 billion (31 Dec. 2021: EUR 5.8 billion).

Structured entities in the business sector Export and project finance

Tailored leasing/financing concepts are structured via property leasing companies, primarily in the "Aviation and Rail" and "Maritime Industries" sector departments. A separate entity is created for each transaction, with KfW Group participating as the lender. In the case of some of these business partners, the sponsoring banks act as managers of trust companies, but in the majority of cases, these business partners are set up as separate legal entities. KfW Group provides loans to these companies, generally together with other credit institutions. KfW also has credit relationships with some structured entities as market participants in the commodities financing business, where KfW Group supports these customers with pre-export financing structures.

As of 31 December 2022, the carrying amount of the positions held totalled EUR 2.1 billion (31 Dec. 2021: EUR 2.4 billion).

Structured entities in the business sector DEG

As a finance and advisory institution, DEG provides support within its development mandate in line with its business activity guidelines. DEG's mandate is to promote the development of the private sector of a) developing countries, b) central and eastern European countries and New Independent States (NIS), and c) other countries approved by its shareholder KfW in agreement with the Federal Government. In certain isolated cases this is undertaken via investments in structured entities in the form of equity investments and loans. In accordance with the applied risk principles, the risk of loss is limited to the volume invested or committed.

As of 31 December 2022, the carrying amount of the positions held totalled EUR 0.2 billion (31 Dec. 2021: EUR 0.2 billion).

The following table shows the carrying amounts of assets relating to unconsolidated structured entities and the maximum possible loss that could result from these exposures.

Maximum risk of loss as of 31 December 2022

	Loans and advances to customers	Securities and investments	Other assets	Contingent liabilities; irrevocable loan commitments
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Carrying amount	1,924	5,926	0	351
Risk and other provisions	35	1	0	0
Max. risk of loss	1,889	5,925	0	351

Maximum risk of loss as of 31 December 2021

	Loans and advances to customers	Securities and investments	Other assets	Contingent liabilities; irrevocable loan commitments
	EUR in millions	EUR in millions	EUR in millions	EUR in millions
Carrying amount	2,378	5,846	9	139
Risk and other provisions	46	1	0	0
Max. risk of loss	2,332	5,845	9	139

The maximum risk of loss is equal to the nominal amount for credit lines, (financial) guarantees and other liquidity facilities less the provisions for credit risks recognised in the statement of financial position. The maximum risk of loss relating to KfW Group's investments is their carrying amount (net). The maximum risk of loss does not include effects from KfW Group's hedging instruments used to reduce the maximum risk of loss.

No support is provided to structured entities in KfW Group beyond the respective financing.

In exceptional cases, KfW Group acts as the sponsor for structured entities in which it holds shares purely on a trust basis on behalf of the Federal Government. The risk of these structured entities lies exclusively with the Federal Government. In such cases, KfW Group is considered as the sponsor of the structured entities because the entities were initiated and/or structured by KfW Group on behalf of the Federal Government.

(74) Disclosures on shareholdings

Subsidiaries included in the consolidated financial statements

Name/registered office	Capital share	Equity (IFRS) as of 31 Dec. 2022 EUR in millions	Equity (IFRS) as of 31 Dec. 2021 EUR in millions
	%		
KfW IPEX-Bank GmbH, Frankfurt am Main, Germany	100.0	4,498	3,881
DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH, Cologne, Germany	100.0	3,067	2,987
KfW Beteiligungsholding GmbH, Bonn, Germany	100.0	3,182	3,082
Interkonnektor GmbH, Frankfurt am Main, Germany	100.0	70	95
KfW Capital GmbH & Co. KG, Frankfurt am Main, Germany	100.0	857	665
IPEX Asia Ltd., Singapore	100.0	12	–

The newly founded IPEX Asia Ltd., Singapore was included in the consolidated financial statements as a fully consolidated company for the first time in financial year 2022. Subsidiary KfW IPEX-Bank holds a 100% equity interest in this company.

Associates included in the consolidated financial statements using the equity method

Name/registered office	Capital share	Equity as of 30 Sept. 2022 EUR in millions	Equity as of 30 Sept. 2021 EUR in millions
	%		
Microfinance Enhancement Facility S. A., Luxembourg	16.5	516	472
Green for Growth Fund, Southeast Europe S. A., Luxembourg	10.2	557	524
coparion GmbH & Co. KG, Cologne, Germany	16.4	350	284
Name/registered office	Capital share	Equity as of 31 Dec. 2022 EUR in millions	Equity as of 31 Dec. 2021 EUR in millions
	%		
DC Nordseekabel GmbH und Co. KG, Bayreuth, Germany	50.0	805	839

Microfinance Enhancement Facility S.A. (MEF) has been accounted for using the equity method since 2009. MEF, a KfW investment in a refinancing facility for microfinance institutions, is part of the business sector KfW Development Bank.

Green for Growth Fund, Southeast Europe S.A. (GGF) has been included in the consolidated financial statements using the equity method since 2010. GGF is a fund to promote SME and private household investment in energy efficiency and renewable energy in the Western Balkans and Turkey (KfW's investment in GGF is also part of the business sector KfW Development Bank).

DC Nordseekabel GmbH und Co. KG (DC Nordseekabel) was accounted for using the equity method, as a joint venture of Interkonnektor GmbH (NordLink project; business sector Export and project finance), for the first time in financial year 2015. The NordLink project is one of the major projects in the European energy sector and comprises an investment volume of around EUR 1.5 to 2 billion. As it will primarily serve as a conduit for renewably sourced energy, the underwater cable will play an important role in the success of Germany's energy transition. Norwegian state-owned power grid operator Statnett, KfW and the transmission systems operator TenneT, which is responsible for the German territory of the North Sea, concluded a cooperation agreement in February 2015 to construct an underwater cable between Germany and Norway. The NordLink project will be realised by a syndicate in which Statnett and DC Nordseekabel each hold a 50% stake. KfW – via its subsidiary Interkonnektor GmbH – and TenneT each hold a 50% stake in DC Nordseekabel, which is responsible for the construction and obtaining permits in Germany.

coparion GmbH & Co. KG (coparion; business sector KfW Capital) as an associated company was accounted for using the equity method for the first time in financial year 2016.

This co-investment fund by KfW and the German Federal Ministry for Economic Affairs and Climate Action (BMWK) participates in young technology companies by offering venture capital, together with private lead investors.

Entities not included in the consolidated financial statements

Six subsidiaries, two joint ventures, seven associated companies and three special purpose vehicles (including structured entities) of minor significance to the presentation of the net assets, financial and earnings position of KfW Group have not been consolidated; instead, they are presented in the statement of financial position under Securities and investments or Loans and advances. These companies account for approximately 0.05% of KfW Group's total assets.

List of KfW Group shareholdings as of 31 December 2022

No.	Name	Place	Capital share in %	CC ¹⁾	Exchange rate EUR 1.00 = CU as of 31 Dec. 2022 ²⁾	Equity in TCU ^{2), 3)}	Net income in TCU ^{2), 3)}
KfW shareholdings							
A. Fully consolidated subsidiaries included in the consolidated financial statements							
1	DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH ⁶⁾	Cologne	100.0	EUR	1.0000	2,516,872	10,250
2	Interkonnektor GmbH ⁶⁾	Frankfurt am Main	100.0	EUR	1.0000	71,780	–9,887
3	KfW Beteiligungsholding GmbH ⁶⁾	Bonn	100.0	EUR	1.0000	1,770,628	165,933
4	KfW Capital GmbH & Co. KG ⁶⁾	Frankfurt am Main	100.0	EUR	1.0000	662,601	0
B. Subsidiaries not included in the consolidated financial statements							
5	Finanzierungs- und Beratungsgesellschaft mbH ⁶⁾	Berlin	100.0	EUR	1.0000	5,669	15
6	tbg Technologie- Beteiligungsgesellschaft mbH ⁶⁾	Bonn	100.0	EUR	1.0000	71,878	4,705
C. Joint ventures not included in the consolidated financial statements							
7	Deutsche Energie-Agentur GmbH (dena) ⁵⁾	Berlin	26.0	EUR	1.0000	6,995	923
D. Other shareholdings (only capital shares totalling at least 20%)							
8	Berliner Energieagentur GmbH ⁵⁾	Berlin	25.0	EUR	1.0000	7,937	534
Shareholdings of KfW IPEX-Bank GmbH							
A. Fully consolidated subsidiaries included in the consolidated financial statements							
1	KfW IPEX-Bank Asia Ltd. ⁶⁾	Singapore, Singapore	100.0	SGD	1.4300	16,818	1,478
B. Subsidiaries not included in the consolidated financial statements							
2	Bussard Air Leasing Ltd. i. L. ⁵⁾	Dublin, Ireland	100.0	USD	1.0666	–2,152	165
3	Sperber Rail Holdings Inc. ⁵⁾	Wilmington, USA	100.0	USD	1.0666	456	6
Shareholdings of KfW Beteiligungsholding GmbH							
A. Fully consolidated subsidiaries included in the consolidated financial statements							
1	KfW IPEX-Bank GmbH ⁶⁾	Frankfurt am Main	100.0	EUR	1.0000	3,206,313	0

List of KfW Group shareholdings as of 31 December 2022

No.	Name	Place	Capital share in %	CC ¹⁾	Exchange rate EUR 1.00 = CU as of 31 Dec. 2022 ²⁾	Equity in TCU ^{2), 3)}	Net income in TCU ^{2), 3)}
Shareholdings of DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH							
A. Subsidiaries not included in the consolidated financial statements							
1	DEG Impact GmbH	Cologne	100.0	EUR	1.0000	1,646	352
2	DEG Impulse GmbH	Cologne	100.0	EUR	1.0000	⁵⁾	⁵⁾
B. Other shareholdings (only capital shares totalling at least 20%)							
3	Aavishkaar Frontier Fund	Mumbai, India	20.8	USD	1.0666	38,100	–2,102
4	AC Captales Infrastructure Fund II L.P.	Toronto, Canada	32.4	USD	1.0666	–185	–1,582
5	Ace Power Embilipitiya Pvt Ltd.	Colombo, Sri Lanka	26.0	LKR	391.7555	4,435,069	254,189
6	ACON Latin America Opportunities Fund IV-A, L.P.	Washington, D.C., USA	39.9	USD	1.0666	61,643	–8,402
7	Acon Latin America Opportunities Fund-A, L.P.	Washington, USA	40.0	USD	1.0666	20,660	–110
8	ACON Retail MXD, L.P.	Toronto, Canada	100.0	USD	1.0666	16,724	–26
9	Adobe Social Mezzanine Fund I, L.P.	Mexico City, Mexico	32.9	USD	1.0666	5,198	–3,029
10	ADP Enterprises W.L.L.	Manama, Bahrain	23.3	EUR	1.0000	187,299	–37,195
11	ADP II Holding 11 S.A.R.L.	Luxembourg, Luxembourg	22.2	USD	1.0666	53,878	50
12	Advent Latin American Private Equity Fund III-B, L.P.	Wilmington, USA	100.0	USD	1.0666	575	–49
13	AEP China Hydro Ltd.	Ebène Cyber-City, Mauritius	30.2	USD	1.0666	⁵⁾	⁵⁾
14	AfricInvest III – SPV 1	Port Louis, Mauritius	21.8	EUR	1.0000	48,623	15,874
15	Agrofundos Brasil VI Fundo de Investimento em Participações Multiestratégia	São Paulo, Brazil	29.9	BRL	5.6386	53,971	–10,459
16	AO Bucharagips	Kogon, Uzbekistan	24.9	UZS	11,999.2300	⁵⁾	⁵⁾
17	Apis Growth 2 Ltd.	Ebène Cyber-City, Mauritius	25.6	USD	1.0666	38,777	–273
18	Banque Nationale de Développement Agricole S. A.	Bamako, Mali	21.4	XOF	655.9570	73,215,000	11,649,000
19	BanyanTree Growth Capital, LLC	Ebène Cyber-City, Mauritius	27.0	USD	1.0666	33,999	–292
20	Benetex Industries Ltd.	Dhaka, Bangladesh	28.3	BDT	109.9047	⁵⁾	⁵⁾
21	Berkeley Energy Wind Mauritius Ltd.	Ebène Cyber-City, Mauritius	25.8	EUR	1.0000	–14,545	–26,777
22	Catalyst MENA Clean Energy Fund, L.P.	Amman, Jordan	24.6	USD	1.0666	43,791	7,979
23	CGFT Capital Pooling GmbH & Co. KG	Berlin, Germany	40.0	EUR	1.0000	5,641	–393

List of KfW Group shareholdings as of 31 December 2022

No.	Name	Place	Capital share in %	CC ¹⁾	Exchange rate EUR 1.00 = CU as of 31 Dec. 2022 ²⁾	Equity in TCU ^{2), 3)}	Net income in TCU ^{2), 3)}
Shareholdings of DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH							
B. Other shareholdings (only capital shares totalling at least 20%)							
24	CoreCo Central America Fund I, L.P.	Wilmington, USA	22.0	USD	1.0666	12,832	–6,782
25	Crescera Growth Capital Fund V-A, L.P.	Toronto, Canada	24.2	USD	1.0666	⁵⁾	⁵⁾
26	Crescera Investimentos Growth Capital, Fund I-B, L.P.	Wilmington, USA	20.0	USD	1.0666	48,072	–4,524
27	Da Vinci Emerging Technologies Fund III L.P.	St. Peter Port, Guernsey	20.0	USD	1.0666	⁵⁾	⁵⁾
28	Darby Latin American Private Debt Fund IIIA, L.P.	Toronto, Canada	37.6	USD	1.0666	28,565	2,116
29	ECP Africa Fund IV LLC	Ebène Cyber- City, Mauritius	34.5	USD	1.0666	327,378	–11,194
30	Elbrus Capital Fund III B, S.C.Sp.	Luxembourg, Luxembourg	23.8	USD	1.0666	⁵⁾	⁵⁾
31	Emerald Sri Lanka Fund I Ltd.	Ebène Cyber- City, Mauritius	23.5	USD	1.0666	14,794	–255
32	EMF NEIF I (A), L.P.	Fareham, United Kingdom	28.1	USD	1.0666	38,624	–4,309
33	EMX Capital Partners, L.P.	Mexico City, Mexico	20.1	USD	1.0666	413	–16,191
34	Evonik Lanxing (Rizhao) Chemical Industrial Co. Ltd.	Rizhao, China	41.0	CNY	7.3582	184,601	1,359
35	Fortio Co. Ltd.	George Town, Grand Cayman, Cayman Islands	46.2	USD	1.0666	9,000	0
36	Frontier Bangladesh II, L.P.	George Town, Cayman Islands	27.2	USD	1.0666	25,806	7,044
37	Grand Bremner Corp Pte. Ltd.	Singapore, Singapore	24.7	USD	1.0666	44,990	–470
38	Grassland Finance Ltd.	Hong Kong, Hong Kong	24.9	CNY	7.3582	439,896	2,714
39	Kandao Fund II (A), L.P.	Bogota, Colombia	53.1	USD	1.0666	30,764	–5,362
40	Knauf Gips Buchará OOO	Bukhara, Uzbekistan	25.0	USD	1.0666	⁵⁾	⁵⁾
41	Knauf Gypsum Philippines Inc.	Calaca, Philippines	20.8	PHP	59.3200	1,250,773	–155,365
42	Landsberg Investments S.L.	Barcelona, Spain	49.8	EUR	1.0000	⁵⁾	⁵⁾
43	Lereko Metier REIPPP Fund Trust	Dunkeld, South Africa	32.3	ZAR	18.0986	476,290	61,556
44	Lereko Metier Solafrica Fund I Trust	Johannesburg, South Africa	47.5	ZAR	18.0986	203,621	13,817
45	MC II Pasta Ltd.	Ta' Xbiex, Malta	32.2	EUR	1.0000	⁵⁾	⁵⁾

List of KfW Group shareholdings as of 31 December 2022

No.	Name	Place	Capital share in %	CC ¹⁾	Exchange rate EUR 1.00 = CU as of 31 Dec. 2022 ²⁾	Equity in TCU ^{2), 3)}	Net income in TCU ^{2), 3)}
Shareholdings of DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH							
B. Other shareholdings (only capital shares totalling at least 20%)							
46	Metier Retailability en Commandite Partnership	Dunkeld, South Africa	22.1	ZAR	18.0986	1,254,830	319,140
47	Navegar II (Netherlands) B.V.	Amsterdam, Netherlands	29.2	USD	1.0666	5)	5)
48	Novel Sky Global Limited	Road Town, Brit. Virgin Islands	25.0	USD	1.0666	5)	5)
49	OA0 Belgips	Minsk, Belarus	50.0	BYN	3.5735	5)	5)
50	Onstar Galaxy SPV Pte. Ltd.	Singapore, Singapore	33.1	USD	1.0666	5)	5)
51	Operadora de Servicios Mega, S.A. de C.V., SOFOM E.R.	Zapopan, Mexico	21.9	MXN	20.8560	2,449,642	–48,018
52	Russia Partners Technology Fund, L.P.	George Town, Cayman Islands	21.6	USD	1.0666	245,642	3,118
53	SEAF Central and Eastern Europe Growth Fund LLC	Wilmington, USA	23.9	USD	1.0666	5)	5)
54	Sierra Madre Philippines I, L.P.	George Town, Cayman Islands	20.0	USD	1.0666	69,569	10,578
55	Siguler Guff Global Emerging Markets Co-Investment Opportunities (AIF), LP	London, United Kingdom	100.0	USD	1.0666	24,919	386
56	Stratus SCP Fleet Fundo de Investimento em Participações – Multiestratégia	São Paulo, Brazil	39.7	BRL	5.6386	81,277	32,082
57	Stratus SCP II Investors – B LP	São Paulo, Brazil	75.0	USD	1.0666	13,960	–3,904
58	Takura II Feeder Fund Partnership	Cape Town, South Africa	25.0	USD	1.0666	45,968	–21
59	Tolstoi Investimentos S.A.	São Paulo, Brazil	31.1	BRL	5.6386	5)	5)
60	TOO Isi Gips Inder	Inderborskij, Kazakhstan	40.0	KZT	493.7700	5)	5)
61	TOO Knauf Gips Kaptschagaj. Enterprise with share of DEG LLP	Kapchagay, Kazakhstan	40.0	KZT	493.7700	5)	5)
62	Triple P SEA Financial Inclusion Fund LP	Singapore, Singapore	25.2	USD	1.0666	52,637	–464
63	VI (Vietnam Investments) Fund IV, L.P.	George Town, Cayman Islands	21.4	USD	1.0666	5)	5)
64	Vietnam Opportunity Fund II PTE. LTD.	Singapore, Singapore	32.0	USD	1.0666	33,142	3,037
65	Vinci Impact and Return IV A, LP	Toronto, Canada	51.8	USD	1.0666	4,280	–937
66	Whitlam Holding PTE. Ltd.	Singapore, Singapore	38.7	USD	1.0666	65,636	9,312

List of KfW Group shareholdings as of 31 December 2022

No.	Name	Place	Capital share in %	CC ¹⁾	Exchange rate EUR 1.00 = CU as of 31 Dec. 2022 ²⁾	Equity in TCU ^{2), 3)}	Net income in TCU ^{2), 3)}
Shareholdings of DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH							
B. Other shareholdings (only capital shares totalling at least 20%)							
67	Worldwide Group, Inc	Charlestown, Saint Kitts and Nevis	33.4	USD	1.0666	25,762	–651
68	wpd Duqueco S.p.A.	Santiago de Chile, Chile	24.5	USD	1.0666	17,487	–83
69	wpd Malleco S.p.A.	Santiago Providencia, Chile	24.5	MUR	46.9050	88,781	13,356
70	wpd Negrete S.p.A.	Santiago de Chile, Chile	24.5	USD	1.0666	13,189	2,235
Shareholdings of Interkonnektor GmbH							
A. Joint ventures included in the consolidated financial statements							
1	DC Nordseekabel GmbH & Co. KG	Bayreuth	50.0	EUR	1.0000	805,532	30,463
B. Joint ventures not included in the consolidated financial statements							
2	DC Nordseekabel Beteiligungs GmbH	Bayreuth	50.0	EUR	1.0000	69	2
Shareholdings of KfW Capital GmbH & Co. KG							
A. Subsidiaries not included in the consolidated financial statements							
1	KfW Capital Verwaltungs GmbH	Frankfurt am Main	100.0	EUR	1.0000	40	1

¹⁾ ISO currency code

²⁾ CU = currency units in local currency; TCU = thousand currency units in local currency

³⁾ Financial statements prepared in accordance with local financial reporting framework

⁴⁾ The company is in the start-up phase, no annual financial statements have been prepared yet.

⁵⁾ No current annual financial statements are available.

⁶⁾ Preliminary data is available as of 31 December 2022.

The data is based on the most recent annual financial statements of the investee (where available).

(75) Events after the balance sheet date

No events of particular impact on KfW's net assets, financial and earnings position occurred after the end of the financial year (as of 9 March 2023, date of Executive Board approval of publication).

Frankfurt am Main, 28 February 2023

KfW
The Executive Board



Stefan Wintels
(Chief Executive Officer)



Melanie Kehr



Christiane Laibach



Bernd Loewen



Dr Stefan Peiß



Attestations

Responsibility statement

187

Independent auditor's report

188

Responsibility statement

To the best of our knowledge, and in accordance with the applicable accounting principles, the consolidated financial statements give a true and fair view of the net assets, financial position and results of operations of KfW Group, and the combined management report includes a fair review of the development and performance of the business and the position of KfW Group, together with a description of the principal risks and rewards associated with the expected development of KfW Group.

Frankfurt am Main, 28 February 2023

KfW
The Executive Board



Stefan Wintels
(Chief Executive Officer)



Melanie Kehr



Christiane Laibach



Bernd Loewen



Dr Stefan Peiß

Independent auditor's report¹⁾

To Kreditanstalt für Wiederaufbau Anstalt des öffentlichen Rechts, Frankfurt am Main/Germany

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE COMBINED MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of Kreditanstalt für Wiederaufbau Anstalt des öffentlichen Rechts, Frankfurt am Main/Germany, and its subsidiaries (the Group), which comprise the statement of financial position as at 31 December 2022, the statement of comprehensive income, the statement of changes in equity and the statement of cash flows for the financial year from 1 January to 31 December 2022, and the notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the combined management report of Kreditanstalt für Wiederaufbau Anstalt des öffentlichen Rechts, Frankfurt am Main/Germany, for the financial year from 1 January to 31 December 2022. In accordance with the German legal requirements, we have not audited the content of the separate combined non-financial report of KfW as the parent company and the group in accordance with Section 289b (3), Sections 315c in conjunction with 289b (3) German Commercial Code (HGB), which is in turn part of the sustainability report of KfW Group and which is referred to in the section "Non-financial statement" of the combined management report, nor the other parts of the sustainability report.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at 31 December 2022 and of its financial performance for the financial year from 1 January to 31 December 2022, and
- the accompanying combined management report as a whole provides an appropriate view of the Group's position. In all material respects, this combined management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the combined management report does not cover the content of the above-mentioned combined non-financial report of KfW as the parent company and the group in accordance with Section 289b (3), Sections 315c in conjunction with 289b (3) HGB, nor the other parts of the sustainability report of KfW Group.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the combined management report.

¹⁾ Translation – German version prevails

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the combined management report in accordance with Section 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW). Our responsibilities under those requirements and principles are further described in the “Auditor’s Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined Management Report” section of our auditor’s report. We are independent of the group entities in accordance with the requirements of German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the combined management report.

Other information

The executive directors and/or the board of supervisory directors are responsible for the other information. The other information comprises

- the separate combined non-financial report of KfW as the parent company and the group in accordance with Section 289b (3), Sections 315c in conjunction with 289b (3) HGB, which is in turn part of the sustainability report of KfW Group and which is referred to in the section “Non-financial statement” of the combined management report, and which is expected to be presented to us after the date of this auditor’s report,
- the corporate governance report, which also includes the “Declaration of compliance”, which is referred to in the section “Declaration of compliance” in the combined management report and which is expected to be presented to us after the date of this auditor’s report,
- the executive directors’ confirmation regarding the consolidated financial statements and the combined management report pursuant to Section 297 (2) sentence 4 and Section 315 (1) sentence 5 HGB, and
- all other parts of the annual report,
- but not the consolidated financial statements, not the audited content of the combined management report and not our auditor’s report thereon.

The board of supervisory directors is responsible for the report of the board of supervisory directors. In accordance with Section 19 of the KfW Bylaws, the executive directors and the board of supervisory directors are required to annually declare that they recognise the Federal Public Corporate Governance Code as amended and to publish the declaration of compliance as part of the corporate governance report. Otherwise, the executive directors are responsible for the other information.

Our audit opinions on the consolidated financial statements and on the combined management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information identified above and, in doing so, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the audited content of the combined management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of the Executive Directors and the Board of Supervisory Directors for the Consolidated Financial Statements and the Combined Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB, and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the combined management report that as a whole provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a combined management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the combined management report.

The board of supervisory directors is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the combined management report.

The Board of Supervisory Directors is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the combined management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the combined management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this combined management report.

We exercise professional judgement and maintain professional scepticism throughout the audit. We also

- identify and assess the risks of material misstatement of the consolidated financial statements and of the combined management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures relevant to the audit of the combined management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.
- evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the combined management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRS as adopted by the EU and with the additional requirements of German commercial law pursuant to Section 315e (1) HGB.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the combined management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.
- evaluate the consistency of the combined management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

- perform audit procedures on the prospective information presented by the executive directors in the combined management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Report on the Audit of the Electronic Reproductions of the Consolidated Financial Statements and of the Combined Management Report Prepared for Publication Pursuant to Section 317 (3a) HGB

Audit Opinion

We have performed an audit in accordance with Section 317 (3a) HGB to obtain reasonable assurance whether the electronic reproductions of the consolidated financial statements and of the combined management report (hereinafter referred to as “ESEF documents”) prepared for publication, contained in the file, which has the SHA-256 value 15a2b4c9f7b663a7979019912bd2d407fc98ab82476bbdd05c641b644c2bdf85, meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB (“ESEF format”). In accordance with the German legal requirements, this audit only covers the conversion of the information contained in the consolidated financial statements and the combined management report into the ESEF format, and therefore covers neither the information contained in these electronic reproductions nor any other information contained in the file identified above.

In our opinion, the electronic reproductions of the consolidated financial statements and of the combined management report prepared for publication contained in the file identified above meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB. Beyond this audit opinion and our audit opinions on the accompanying consolidated financial statements and on the accompanying combined management report for the financial year from 1 January to 31 December 2022 contained in the “Report on the Audit of the Consolidated Financial Statements and of the Combined Management Report” above, we do not express any assurance opinion on the information contained within these electronic reproductions or on any other information contained in the file identified above.

Basis for the Audit Opinion

We conducted our audit of the electronic reproductions of the consolidated financial statements and of the combined management report contained in the file identified above in accordance with Section 317 (3a) HGB and on the basis of the IDW Auditing Standard: Audit of the Electronic Reproductions of Financial Statements and Management Reports Prepared for Publication Purposes Pursuant to Section 317 (3a) HGB (IDW AuS 410 (06.2022)). Our responsibilities in this context are further described in the “Group Auditor’s Responsibilities for the Audit of the ESEF Documents” section. Our audit firm has applied the IDW Standard on Quality Management: Requirements for Quality Management in the Audit Firm (IDW QS 1).

Responsibilities of the Executive Directors and the Board of Supervisory Directors for the ESEF Documents

The executive directors of the parent are responsible for the preparation of the ESEF documents based on the electronic files of the consolidated financial statements and of the combined management report according to Section 328 (1) sentence 4 no. 1 HGB and for the tagging of the consolidated financial statements according to Section 328 (1) sentence 4 no. 2 HGB.

In addition, the executive directors of the parent are responsible for such internal controls that they have considered necessary to enable the preparation of ESEF documents that are free from material intentional or unintentional non-compliance with the requirements for the electronic reporting format pursuant to Section 328 (1) HGB.

The board of supervisory directors is responsible for overseeing the process for preparing the ESEF documents as part of the financial reporting process.

Group Auditor's Responsibilities for the Audit of the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB. We exercise professional judgement and maintain professional scepticism throughout the audit. We also

- identify and assess the risks of material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinion.
- obtain an understanding of internal control relevant to the audit on the ESEF documents in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance opinion on the effectiveness of these controls.
- evaluate the technical validity of the ESEF documents, i.e. whether the file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815, in the version in force at the reporting date, on the technical specification for this electronic file.
- evaluate whether the ESEF documents enable a XHTML reproduction with content equivalent to the audited consolidated financial statements and to the audited combined management report.
- evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) in accordance with the requirements of Articles 4 and 6 of the Delegated Regulation (EU) 2019/815, in the version in force at the reporting date, enables an appropriate and complete machine-readable XBRL copy of the XHTML reproduction.

OTHER MATTER – USE OF THE AUDITOR’S REPORT

Our auditor’s report must always be read together with the audited consolidated financial statements and the audited combined management report as well as with the audited ESEF documents. The consolidated financial statements and the combined management report converted into the ESEF format – including the versions to be submitted for inclusion in the Company Register – are merely electronic reproductions of the audited consolidated financial statements and the audited combined management report and do not take their place. In particular, the ESEF report and our audit opinion contained therein are to be used solely together with the audited ESEF documents made available in electronic form.

Frankfurt am Main/Germany, 9 March 2023

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed:
Prof. Dr Carl-Friedrich Leuschner
Wirtschaftsprüfer
(German Public Auditor)

Signed:
Christian Schweitzer
Wirtschaftsprüfer
(German Public Auditor)

CONSENT OF INDEPENDENT AUDITORS

We consent to the incorporation by reference in the Registration Statement under Schedule B (No. 333-260756) of KfW and in the related Prospectus of our report dated March 9, 2023, with respect to the consolidated financial statements as at December 31, 2022 and for the fiscal year from January 1, 2022 to December 31, 2022 of KfW included in this Annual Report on Form 18-K of KfW for the year ended December 31, 2022.

/s/ Deloitte GmbH Wirtschaftsprüfungsgesellschaft
Frankfurt am Main, Germany
May 11, 2023

CONSENT OF THE FEDERAL REPUBLIC OF GERMANY

On behalf of the Federal Republic of Germany, I hereby consent to the making of the statements with respect to the Federal Republic of Germany included in the Annual Report on Form 18-K of KfW for the year ended December 31, 2022 and to the incorporation by reference of such information in the Registration Statement under Schedule B of KfW filed with the Securities and Exchange Commission of the United States of America.

May 11, 2023

By: DR. MARKUS HÖRMANN

Name: Dr. Markus Hörmann

Title: Regierungsdirektor (Head of Division)
Ministry of Finance