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# Impact of the 2022 interest-rate shock on cooperative banks in Germany – a case study

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**Summary:** Between July and December 2022, the European Central Bank (ECB) raised its key interest rate by a very substantial 250 basis points. This interest-rate shock presented the German cooperative banks as well as many other credit institutions with huge challenges. The cooperative banks suffered a significant hit to their income, mainly in the form of high fair value losses in securities portfolios following the interest-rate shock and, to a much lesser extent, in a deterioration of fair value gains and losses in the lending business due to the faltering economy. Nonetheless, the cooperative banks delivered a strong operating performance and strengthened their capital base. Over the medium term, the return to positive interest rates should create a tailwind for financial performance. In the coming years, reversals of impairment losses should generate favorable effects as most securities are held to maturity. A key factor for future operating performance will be the trajectory of capital investment in Germany going forward.

**Zusammenfassung:** Zwischen Juli und Dezember erhöhte die Europäische Zentralbank (EZB) ihren Leitzins äußerst kräftig um 250 Basispunkte. Dieser Zinsschock stellte für die deutschen Genossenschaftsbanken wie auch für viele andere Kreditinstitute eine große Herausforderung dar. Infolgedessen mussten die Genossenschaftsbanken deutliche Ertragseinbußen hinnehmen. Diese äußerten sich überwiegend in einem hohen Bewertungsaufwand in den Wertpapierportfolien infolge des Zinsschocks und zu einem deutlich geringeren Teil im Bewertungsergebnis des Kreditgeschäfts angesichts der sich abschwächenden Konjunktur. Dennoch konnte operativ ein gutes Ergebnis erzielt und zusätzliches Eigenkapital aufgebaut werden. Mittelfristig dürfte die Rückkehr zu positiven Zinsen die Ertragslage deutlich verbessern. In den kommenden Jahren sind positive Effekte durch Wertaufholungen zu erwarten, da ein Großteil der Wertpapiere bis zur Endfälligkeit gehalten wird. Wichtig für die kommende operative Ertragsentwicklung ist die Frage, wie sich die Investitionstätigkeit in Deutschland perspektivisch entwickeln wird.

→ JEL classification: G01, G21, E58

→ Keywords: cooperative banks, financial crises, central banks and their policies

## Introduction

In spring 2023, the media on both sides of the Atlantic was awash with speculation about a potential financial and banking crisis. This was sparked by the turmoil surrounding California's Silicon Valley Bank (SVB) and Swiss banking heavyweight Credit Suisse. When news broke of these banks falling into distress, it immediately prompted a wave of concern that another financial crisis might be imminent. Some high-profile experts with strong opinions were quick to diagnose a systemic failure of banking regulation. There were demands for higher capital adequacy requirements (Fuest 2023), as well as calls for fundamental banking reforms ranging from the introduction of narrow banking to the option of customer deposits being held directly at the central bank (Schularick 2023). At times, this debate is being conducted on a very abstract level, in some cases even without clear reference to any specific country. That seems remarkable when considering the substantial differences between banking structures, supervisory regimes, and resolution mechanisms in different countries.

The rapid hiking of interest rates in the developed economies is often cited as a trigger for the recent stress in the banking sector, alongside doubts about the business strategies and risk management of the troubled banks. In the case of SVB, sharply rising interest rates had led to significant write-downs on government bonds in the bank's portfolio and thus indirectly prompted the management's belated – and ultimately unsuccessful – attempts to increase the bank's capital. These events sparked a sudden bout of concern among depositors about the stability of the bank, resulting in a bank run. Within a very short period of time, a huge volume of deposits was withdrawn, which left the bank insolvent (Economist 2023a).

The collapse of SVB illustrates the risks associated with rising interest rates. But it is also worth bearing in mind that SVB was particularly exposed. Although media outlets referred to SVB as a regional bank, its total assets at the end of 2022 amounted to just over €200 billion, ranking it among the top 20 US banks (FFIEC 2023). That made SVB orders of magnitude larger than those institutions commonly referred to as regional banks in German-speaking countries. In addition, the strategic focus of SVB was on banking services for private equity firms, venture capital firms, and start-ups. On the one hand, it acted as a funding partner while, on the other, it held almost exclusively large deposits from corporate clients that had, in part, built up as a result of exceptionally strong earnings in the tech sector in recent year (Economist 2023a). The bulk of these deposits (more than 90 percent) was not covered by deposit protection schemes. And while the liabilities' side of SVB's balance sheet was dominated by large deposits, the asset side featured a very sizeable exposure to bonds on the banking book, which accounted for around 45 percent of total assets. These bond holdings included a substantial proportion of long-dated paper that still carried very low interest rates and consequently suffered high valuation losses (Economist 2023b).

As well as in the US, interest rates also rose sharply in the euro area in 2022. It therefore seems pertinent to analyze how German banks have been performing against the backdrop of the interest-rate shock. This paper conducts such an analysis using the German cooperative banks as a case study. The aim is to chart the effects of rising interest rates and other adverse factors in detail in order to gain a better understanding of their impact on well-capitalized regional banks.

The analysis shows that German cooperative banks clearly felt an adverse impact from the interest-rate shock in 2022, but were nonetheless able to generate positive net income and increase their capital. German savings banks present a similar case (DSGV 2023). Looking ahead, unfavorable

influences are likely to persist in 2023 as the European Central Bank (ECB) continues to raise interest rates. However, over the medium term, the return to positive interest rates should create a tailwind for financial performance. External observers, for example from Deutsche Bundesbank – based on its latest Financial Stability Review (Deutsche Bundesbank 2022) – and rating agencies (S&P 2022, Fitch 2022), agree with this generally positive outlook.

## Cooperative banks – the third pillar of the German banking sector

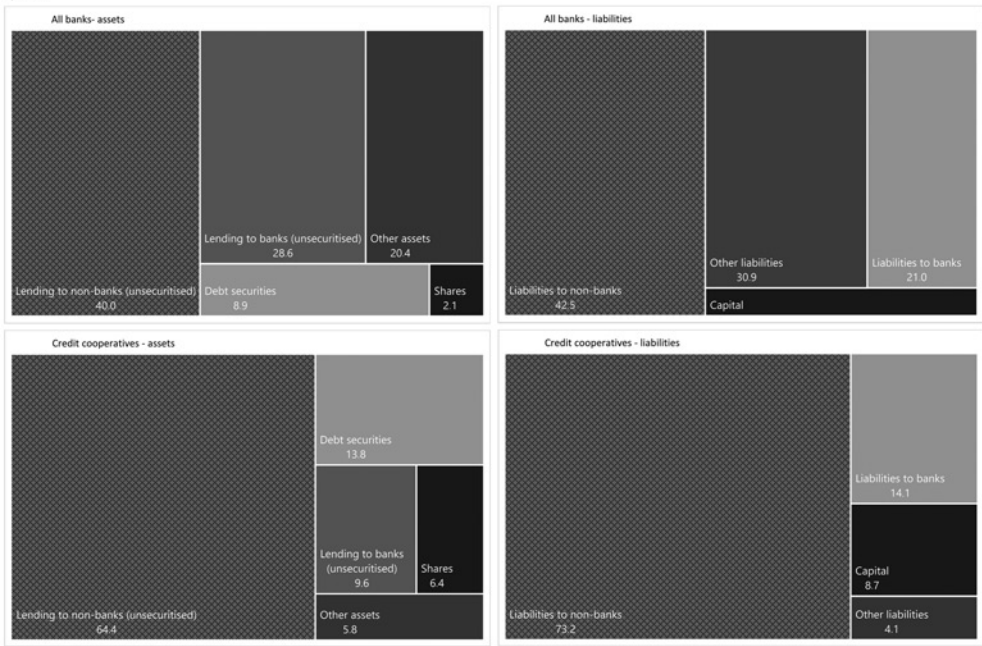
The German banking system rests on three pillars: commercial banks, Sparkassen/Landesbanken (savings banks and regional central banks), and the cooperative banks along with their central institution, DZ BANK, and other institutions such as consumer finance specialist TeamBank, mortgage banks DZ HYP and Münchener Hyp, and building society Schwäbisch Hall. This three-pillar structure has been a defining feature of the German banking industry since the second half of the 19th century.

As at the end of 2022, a network of 737 financially independent local cooperative banks spanned all parts of Germany. Raiffeisenbank Maitis in the town of Göppingen is the smallest cooperative bank with total assets of €32 million, while Deutsche Apotheker- und Ärztebank, a cooperative bank specializing in banking services for medical professionals and pharmacists, is the largest with total assets of €54 billion. The median balance sheet size of Germany's cooperative banks is €700 million (BVR 2023).

The cooperative banks, their central institution, its subsidiaries, and other entities collaborate within the close-knit structures of the Volksbanken Raiffeisenbanken Cooperative Financial Network. This collaboration helps the members of the network to leverage economies of scale, allowing local cooperative banks to provide a one-stop shop for a comprehensive range of financial services, largely irrespective of their individual size.

The Cooperative Financial Network prepares annual consolidated financial statements. As at the end of 2021, its total assets amounted to €1,566 billion. The bulk of this total – €1,140 billion or 72.8 percent – is attributable to local cooperative banks, which form the basis of the Cooperative Financial Network (BVR 2022, Deutsche Bundesbank 2023). Rating agencies assess the long-term credit quality of the Cooperative Financial Network on the basis of its consolidated financial statements. In recent years, its ratings have been stable at AA- (Fitch 2022, 2023) and A+ (Standard and Poor's 2022) respectively.

Figure 1  
Balance sheet structure - credit cooperatives vs. all banks in Germany  
in percent



The activities of the local cooperative banks are focused on lending and deposit-taking business (figure 1). Loans to non-banks account for the largest proportion of their assets (December 31, 2022: 64.4 percent) while the bulk of their liabilities (December 31, 2022: 73.2 percent) consists of liabilities to non-banks (Deutsche Bundesbank 2023). The latter mostly take the form of customer deposits. On average across all banks and savings banks in Germany, these types of assets and liabilities account for a significantly smaller proportion of the balance sheet, at 40.0 percent and 42.5 percent respectively. As a result, the cooperative banks have been reporting a structural deposit surplus of around 8.8 percent of the total balance sheet size in recent decades. This deposit surplus is matched by holdings of bonds (13.8 percent) and equities (5.6 percent) on the asset side.

Customer groups covered by the ‘non-banks’ category include retail customers, corporate customers, and other customers. The latter include customers from outside Germany, federal, regional, and local authorities, and organizations such as churches, trade unions, and clubs and associations. Based on banking statistics (Deutsche Bundesbank 2023a), the lending and deposit-taking business was structured as follows at the end of 2022:

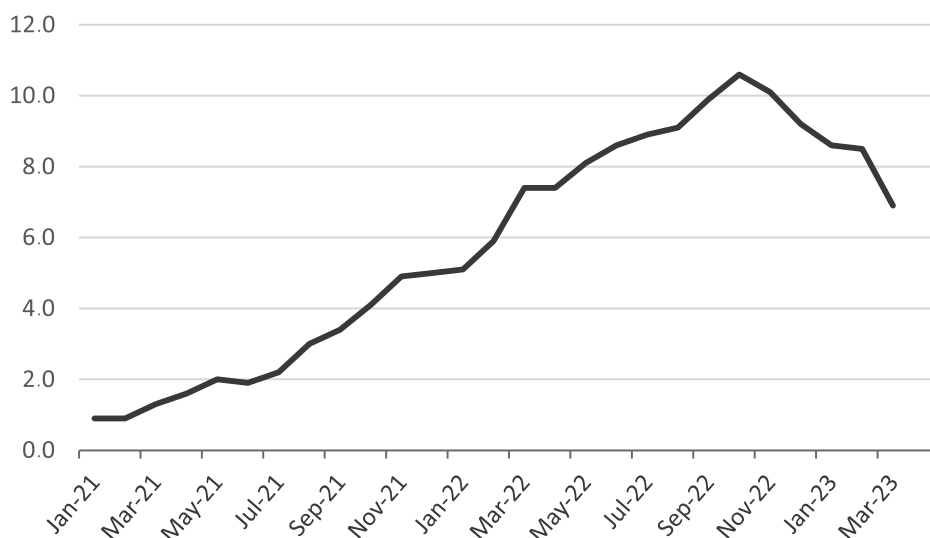
- Corporate customers accounted for 49.3 percent of loans on the banking book, retail customers accounted for 47.8 percent, and other customers for 2.9 percent.
- On the deposit side, nearly two-thirds of deposits (64.9 percent) came from retail customers, around one-quarter (28.4 percent) from corporate customers, and 6.8 percent from other customers.

- Broken down by intended use, 60.1 percent of loans to retail and corporate customers (including organizations) are residential mortgage loans – an even higher proportion than the corresponding average for all German banks and savings banks of 52.7 percent. These two figures highlight the immense importance of the housing market for the lending business of banks in general and local cooperative banks in particular.
- Relative to the German banking industry as a whole, the cooperative banks held a market share of 20.3 percent in lending to corporate customers, a share of 23.9 percent in lending to retail customers, and a share of 19.0 percent of customer deposits.

Figure 2:

### Inflation in the euro area

Annual growth rate of the harmonised consumer price index



Source: Refinitiv Datastream

### The 2022 interest-rate shock

In June 2022, the ECB brought an end to a long era of low or negative interest rates. This policy turnaround was prompted by a sharp rise in inflation in 2021 that proved much more persistent than initially expected. By July 2021, inflation had climbed above the ECB's medium-term target of 2 percent (figure 2). Initially, this inflation surge was perceived as a temporary phenomenon. The trajectory of inflation expectations supports this assumption: Inflation expectations, as derived from financial market data, do not show a sustained rise in short-term and medium-term expectations above 2 percent until March 2022 (figure 3).

However, the survey of professional forecasters (SPF) conducted by the European Central Bank (ECB) suggests that a considerable proportion of forecasters had already foreseen a sustained rise in inflation in the second half of 2021. In addition to the arithmetic average of forecasts, the SPF also provides information on their distribution. This shows that the proportion of forecasters predicting inflation of more than 2 percent (or more than 3 percent or 4 percent) began to grow from the third quarter of 2021 (figure 4). While fewer than 30 percent of forecasters were expecting this outcome in the preceding quarters, their proportion increased to 36.4 percent in the third quarter of 2021 and to 40.5 percent in the fourth quarter. From the second quarter of 2022, this figure rapidly climbed above 50 percent in light of Russia’s invasion of Ukraine and the associated spike in energy prices and overall consumer price inflation.

Figure 3

Interest rate expectations

Market based inflation expectations in 5 years for 5 years (in 2 years for 2 years) in %

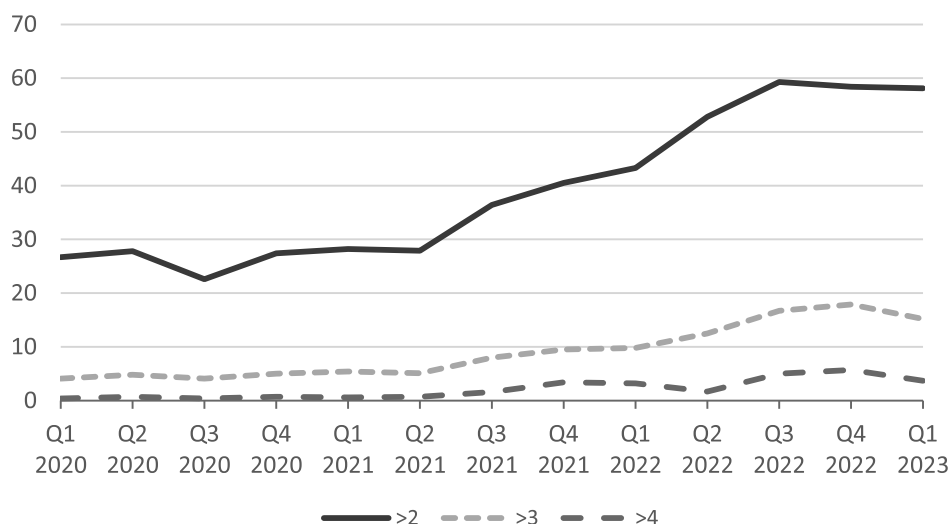


Source: Refinitiv Datastream

Figure 4

**Inflation expectations in 5 years**

Share of forecasters with inflation forecast above ... percent



Source: Survey of professional forecasters (ECB)/Refinitiv Datastream

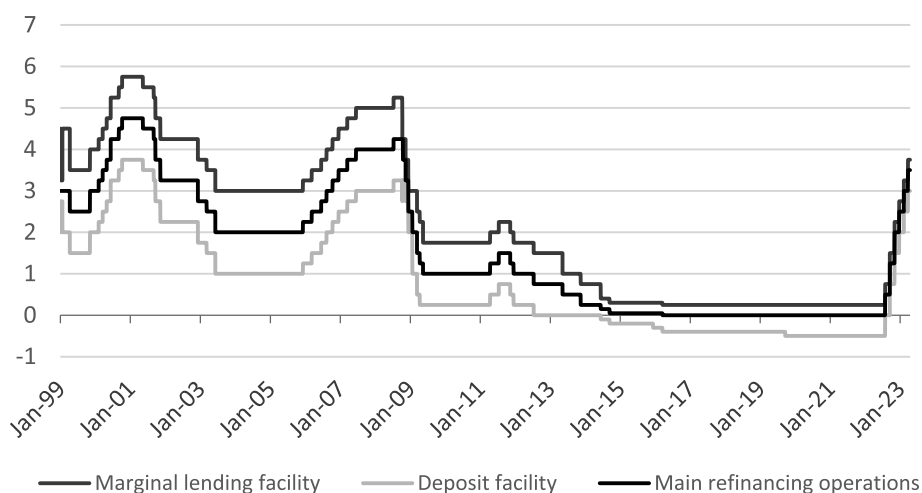
The ECB waited a relatively long time, until the end of 2021, before taking action in response to the rise in inflation. In October 2021, it had still underpinned its forward guidance with the expectation of a long-term main refinancing operation at zero (or negative) interest (European Central Bank 2022). In addition, the ECB took the view that raising interest rates would require a prolonged period of preparation during which net asset purchases were to be phased out. Ultimately, the ECB initiated its policy turnaround in December 2021 with its decision to terminate net asset purchases via the pandemic emergency purchase programme (PEPP) as of March 2022. Its regular asset purchase programme (APP) was set to expire by July 1, 2022. On July 21, 2022, the ECB implemented its first interest-rate increase since 2011. By comparison, the US Federal Reserve had been raising its Federal Funds Target Rate since March 2022.

What followed was a series of interest-rate hikes at a pace that was unprecedented in the history of the euro. By the end of 2022, the ECB's key interest rate had gone up by 250 basis points. Over a six-month period, the main refinancing rate rose from 0 percent to 2.5 percent (figure 5). The cycle of interest-rate increases that preceded the 2008 financial crisis was of a similar overall scale (225 basis points), but was drawn out over a much longer period of around two and a half years (December 2005 to July 2008). In addition, the ECB indicated at the end of 2022 that it would continue to raise interest rates in 2023. The increases implemented in 2022 thus do not reflect the full scale of the current cycle.

Figure 5

**ECB interest rates**

in percent



Source: Refinitiv Datastream

The total increase in interest rates in 2022 already surpassed the ‘Basel interest rate shock’ of 200 basis points (Deutsche Bundesbank 2012) that the European banking regulator uses as its step-one metric for assessing interest-rate risk. This means that the 2022 interest-rate shock can be seen as a real-life test of how banks respond to an unexpected, extreme change in the interest-rate environment.

The bond markets priced in a significant proportion of the interest-rate increases in advance. As early as June 2022, ten-year Bunds were trading at a yield of 1.74 percent – a good 200 basis points higher than in December 2021 (minus 0.31 percent). By December 2022, their yield had climbed to 2.13 percent.

### Situation in the loan and deposit portfolios

The financial performance of the cooperative banks is influenced not only by the interest-rate environment but also, to a significant extent, by macroeconomic conditions. Russia’s war of aggression against Ukraine had a considerable adverse impact on the German economy in 2022. Even though gross domestic product (GDP), adjusted for inflation, rose by 1.8 percent year on year, the rate of economic growth slowed significantly compared with 2021 (growth of 2.6 percent) and fell well short of what had originally been expected in spring 2022 against the backdrop of the continuing recovery from the pandemic-inflicted slump in 2020. It was not until the third quarter of 2022 that GDP growth recovered to just above pre-pandemic levels. The second half of 2022 was



also characterized by substantial uncertainty regarding energy supply. This also contributed to the economic downturn in the fourth quarter and caused widespread concern about a potential recession among forecasters. Germany too saw a sharp rise in overall inflation in 2022, mainly as a result of the spike in energy prices in the wake of Russia's invasion of Ukraine. Based on recent data published by the German Federal Statistical Office, inflation reached 6.9 percent – the highest rate in nearly 50 years (Joint Economic Forecast 2023).

Economic growth in 2022 was driven primarily by consumer spending, which was boosted by the easing of pandemic containment measures. However, towards the end of the year, high inflation began to increasingly dampen consumer spending. Capital expenditure provided little growth impetus. Greatly inflated prices, persistent shortages of staff and materials, deteriorating profit outlooks, less favorable financing conditions, and significant uncertainty came together in a perfect storm that affected the investment climate noticeably. There was a marked decline in construction investment, but spending on capital equipment increased at a healthy rate.

Across all groups of banks, loan portfolios still grew by 6.7 percent in 2022 compared with growth of 5.2 percent in 2021 (Deutsche Bundesbank 2023a). The wider economic environment in 2022 meant that, on the one hand, demand for credit was dampened by effectively stagnating real demand for investment while, on the other hand, funding requirements were being driven up by rapidly rising prices. The robust growth in spending on capital equipment relative to construction investment was reflected in a more stable level of corporate customer loan portfolios at local cooperative banks. In the corporate banking segment, mortgage loans for construction accounted for less than a third of all loans (27.5 percent). By contrast, these loans made up 84.2 percent of retail customer credit.

Deposits grew solidly across all groups of banks, going up by 6.3 percent in 2022 compared with 2.9 percent in 2021 (Deutsche Bundesbank 2023a). Broken down by customer group, the picture was more mixed. In the retail business, deposit growth was held back by high inflation because prices rose significantly faster than household incomes (Joint Economic Forecast 2023). By contrast, companies were able to offset their higher costs at least to some extent by raising their sales prices. In addition, companies tend to maintain a higher level of liquidity during periods of significant economic uncertainty, such as the fragile energy supply situation following Russia's invasion of Ukraine.

## Cooperative banks achieve solid operating income

The impact of the interest-rate shock on the cooperative banks can be measured using the preliminary results published by the Bundesverband der Deutschen Volksbanken und Raiffeisenbanken (BVR) [National Association of German Cooperative Banks] in March 2023. When it comes to the sources of earnings listed in the income statement, net interest income<sup>1</sup> has always been one of the biggest drivers of income for banks. After all, one of the key functions of banks is to facilitate maturity transformation (Hartmann-Wendels et al. 2007). While borrowers are typically more interested in taking out loans with long fixed-interest periods, depositors want to be able to manage their assets more flexibly. Banks meet the needs of both sides by issuing long-term loans

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1 Difference between interest income and interest expense, also referred to as interest margin.

and taking custody of short-term deposits (Deutsche Bundesbank 2012). In Germany, fixed interest rates are the norm for lending, including for long-term loans, which is generally what borrowers want. Deposit terms, meanwhile, are adjusted continually. As facilitators of the macroeconomically important function of maturity transformation, banks are exposed to interest-rate risks for which they need to create appropriate loss allowances.

In 2022, net interest income grew moderately from 1.47 percent to 1.52 percent of average total assets (see table 1).<sup>2</sup> This marked the first increase in net interest income since 2013. The main driver behind this uptrend was the prospect and eventual implementation of a turnaround in interest-rate policy, which pushed up interest income from new business in particular. Year on year, interest income advanced by a substantial 7.8 percent while interest expense increased by only 3.7 percent.

However, interest margins are narrowing. This has been one of the defining features in earnings performance and reflects the secular decline in interest rates since around the middle of the 1980 s. The highest interest margin achieved by the cooperative banks was 3.75 percent of average total assets, recorded in 1982. In light of the ECB's turnaround in interest-rate policy, there is hope that interest margins might widen again in the long term.

While net interest income increased year on year in 2022, net fee and commission income fell slightly, from 0.55 percent to 0.54 percent of average total assets. Administrative expenses edged down from 1.37 percent to 1.36 percent, following substantial reductions in previous years. For comparison, in 2000, administrative expenses still amounted to 2.39 percent of average total assets. Staff expenses increased moderately in absolute terms, but rose at a lesser rate than average total assets. The absolute rise was mainly driven by collectively negotiated one-off payments and additions to provisions for pensions and other post-employment benefits. At the same time, the long-standing moderate downtrend in headcount continued. Other administrative expenses increased at a slightly higher rate than staff expenses, primarily due to sharply rising energy costs and general inflation.

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2 When interpreting (nominal) profit and loss figures of banks, it is standard practice to use average total assets as a reference in order to make it easier to compare against historical figures and across different groups of banks. Deutsche Bundesbank also uses average total assets as a basis for comparison in its annual analysis of the performance of German credit institutions, published in the monthly report for September (Deutsche Bundesbank 2022).

Table 1

Major components of credit cooperatives profit and loss accounts  
As a percent of total assets

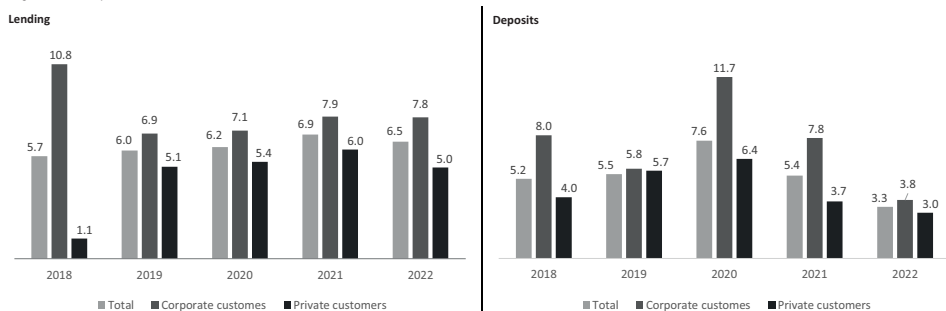
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net interest income	2.49	2.45	2.41	2.49	2.51	2.51	2.46	2.30	2.15	2.06	2.23	2.33	2.30	2.21	2.25	2.21	2.14	1.99	1.90	1.80	1.70	1.56	1.47	1.52
Net commission income	0.62	0.69	0.58	0.57	0.61	0.65	0.67	0.66	0.67	0.63	0.58	0.59	0.58	0.56	0.56	0.56	0.57	0.55	0.57	0.57	0.57	0.55	0.55	0.54
General administrative spending	2.30	2.39	2.36	2.30	2.32	2.28	2.30	2.27	2.12	2.01	1.98	1.88	1.88	1.86	1.85	1.84	1.82	1.73	1.66	1.59	1.55	1.45	1.37	1.36
Operating result before the valuation of assets	0.93	0.82	0.72	0.85	1.01	1.04	0.99	1.26	0.89	0.93	0.92	1.07	1.06	0.97	1.01	0.95	0.91	0.87	0.86	0.81	0.76	0.71	0.71	0.78
Result from the valuation of assets	-0.39	-0.47	-0.50	-0.67	-0.56	-0.54	-0.52	-0.71	-0.44	-0.56	-0.33	-0.33	-0.04	0.04	0.04	-0.03	-0.06	0.01	-0.02	-0.10	0.04	-0.07	0.00	-0.39
Operating result	0.54	0.35	0.22	0.17	0.46	0.51	0.47	0.55	0.45	0.37	0.58	0.74	1.02	1.00	1.06	0.93	0.85	0.88	0.84	0.71	0.80	0.63	0.71	0.39
Other and extraordinary result	-0.06	0.05	0.14	0.29	0.07	0.02	0.25	0.06	0.02	-0.05	-0.08	-0.05	-0.04	0.00	-0.04	-0.02	-0.02	0.04	0.00	-0.02	-0.02	-0.02	-0.01	0.01
Profit or loss for the financial year before tax	0.48	0.40	0.35	0.46	0.52	0.52	0.72	0.61	0.47	0.32	0.50	0.69	0.98	1.00	1.02	0.91	0.84	0.93	0.84	0.69	0.78	0.62	0.70	0.38
Profit or loss for the financial year after tax	0.21	0.19	0.21	0.31	0.26	0.27	0.47	0.47	0.30	0.23	0.28	0.45	0.71	0.73	0.76	0.64	0.57	0.67	0.58	0.47	0.56	0.42	0.52	0.19

Source: Deutsche Bundesbank (2022), BVR (2023)

The operating profit before gains and losses on valuation, which comprises net interest income plus net fee and commission income minus general and administrative expenses, improved from 0.71 percent to 0.78 percent of average total assets, meaning that the operating business delivered a solid performance in 2022. This was also reflected in the cooperative banks' lending and deposit-taking business.

Figure 6

Credit cooperatives  
Annual growth rates in percent



Source: Deutsche Bundesbank (2023)

- The lending business grew by 6.5 percent to €879.8 billion in 2022. Within this segment, loans to corporate customers grew by 7.8 percent and thus considerably faster than loans to retail customers, which went up by 5.0 percent (figure 6). Consequently, nominal lending growth was relatively healthy and stable. In light of the significant rise in inflation since

2021, nominal growth is increasingly reflecting the increase in price of the capital assets to be financed rather than any real-terms growth in the volume of capital expenditure.

- The ECB's interest-rate policy turnaround has prompted lenders to put the brakes on. However, loan portfolio growth data for 2022 reflects this slowdown in lending only to a very limited extent.
  - It is easier to demonstrate this effect when looking at the trajectory of new mortgage loans granted to private households (figure 7) using the MFI interest statistics published by Deutsche Bundesbank. Mortgage interest rates already began to rise noticeably in the first few months of 2022. Over the period from January to December, they climbed from 1.28 percent to 3.43 percent. The rise in interest rates was mirrored by a fall in the monthly volume of new loans from €11.0 billion in January to €5.6 billion in December. As real estate finance deals are arranged with very long durations, there is a significant time lag to these effects materializing in portfolio metrics.
  - Demand-side and supply-side effects are interacting here. The bank lending survey published by Deutsche Bundesbank (2023) shows that banks adopted a slightly more cautious approach to retail mortgage approvals. In the second half of 2022, lending became more restrictive, with banks citing higher risks as the primary reason. At the same time, the data provided by banks taking part in the survey shows a sharp collapse in demand for mortgage loans from the fourth quarter of 2022.
- The deposit business advanced considerably more slowly than lending (up by 3.3 percent).<sup>3</sup> Growth in the corporate banking segment was a little more dynamic (up by 3.8 percent) than in the retail segment (up by 3.0 percent). In previous years, deposits from both customer groups had grown much more robustly (figure 6). Here too, inflation played a significant role. The normalization of the savings ratio and of the level of monetary asset formation by private households following the coronavirus pandemic was accelerated by the fact that consumer prices were rising much faster than household incomes. As a form of investment, bank deposits were affected by this trend too.

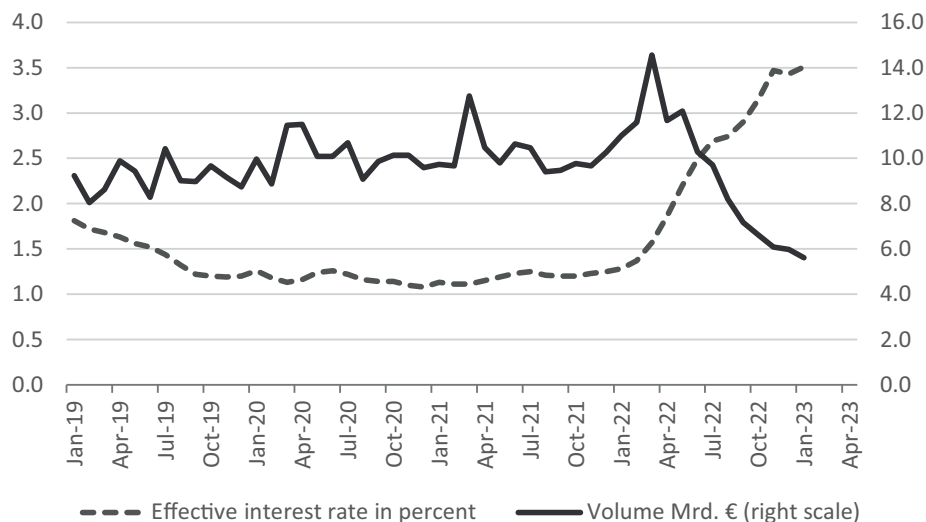
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<sup>3</sup> It was also slower than deposit growth across all groups of banks, although this is more likely to be attributable to the customer structure rather than to conditions. Based on Deutsche Bundesbank's MFI interest-rate statistics, interest on overnight deposits had only risen slightly to 0.07 percent by the end of 2022, meaning that deposit redistribution among banks is unlikely to have been a major factor.

Figure 7

**Loans to households, new business**

Collateralized housing loans with initial fixed interest rates



Source: Deutsche Bundesbank/Refinitiv Datastream

**Fair value gains and losses clearly in negative territory**

The negative impact of the interest-rate turnaround on financial performance was most pronounced in fair value gains and losses, which came to a loss of €4.5 billion or 0.39 percent of average total assets in 2022. As a proportion of average total assets, this was the highest figure recorded since the 2008 financial crisis. However, over the twelve-year period from 1999 and 2010, the cooperative banks proved able to cope with sustained high levels of net fair value losses – in some cases considerably higher than the 2022 figure. Average net fair value losses over this period amounted to 0.50 percent of average total assets. By contrast, in the years leading up to 2022, the cooperative banks had used their healthy income to form capital reserves. And in spite of significant pressures, they continued to make additions to these reserves in 2022, albeit to a lesser extent.

When interpreting fair value gains and losses, it is important to bear in mind that many of the current adverse pressures are arising almost entirely from the change in the interest-rate environment, meaning that they should be of a temporary nature. As at the end of 2022, the increase in interest rates had prompted valuation adjustments in the securities portfolios that amounted to a total impairment loss of €5.8 billion. However, cooperative banks tend to hold securities to maturity. The interest-induced impairment losses should therefore be offset by reversals of write-

downs in subsequent years. Moreover, valuation reserves are used to mitigate the total impact on fair value gains and losses to an extent.

In addition to the valuation effects caused by the rise in interest rates, the deteriorating economic outlook necessitated higher loss allowances for loans and advances. In the lending business, the institutions recorded depreciation/amortization and impairment losses amounting to €581 million. Although this figure is higher than in 2021, it is significantly lower than in 2009, i.e. the year following the global financial crisis, or in 2003/2004, two years that were characterized by very weak economic conditions and historically high levels of insolvencies. Extensive stabilizing fiscal policy measures likely also helped to limit the need for loss allowances for loans and advances. Despite Russia's war of aggression against Ukraine, the German economy expanded moderately on average over 2022. The threat of a widespread energy shortage toward the end of the year, which would have had a devastating impact on economic output, was averted.

Profit before taxes but including fair value gains and losses (and the balance of other income and expenses and of extraordinary income and expenses) came to €4.418 billion or 0.38 percent of average total assets, a significant fall compared with the prior-year figure of 0.70 percent. This is the lowest result generated by the cooperative banks since 2008 (0.32 percent of average total assets). A significant portion of the total net income for the year – €930 million or 0.08 percent of average total assets – was added to the fund for general banking risks. The addition to the fund in 2021 had been substantially higher at €4.1 billion or 0.34 percent of average total assets.

## Robust capital adequacy

In spite of the challenges that arose in 2022, the cooperative banks were able to strengthen their capital and liquidity adequacy. Equity rose by an impressive 5.2 percent to €62 billion. Own funds pursuant to the Capital Requirements Regulation (CRR) went up by 4.7 percent to €107.3 billion. This included €99.3 billion of Tier 1 capital. The Tier 1 capital ratio edged up from 15.0 percent to a solid level of 15.3 percent as a result of this rise in capital. A slight reduction in Tier 2 capital meant that the total capital ratio fell slightly, from 16.6 percent to 16.5 percent.

## Summary and outlook

The German cooperative banks suffered a significant hit to their income in 2022, mainly in the form of high fair value losses in securities portfolios following the interest-rate shock and, to a much lesser extent, in a deterioration of fair value gains and losses in the lending business due to the faltering economy. However, even when faced with these adverse circumstances, the cooperative banks achieved good results and strengthened their capital adequacy.

By historical standards, 2022 was not an easy year for the cooperative banks but they did deliver a strong operating performance. Unlike during the financial crisis or in 2003/2004, write-downs on securities in the portfolio will be offset by corresponding reversals in subsequent years, as most securities are being held to maturity.

A key factor for financial performance going forward will be the future level of capital investment in Germany. The significant amount of funding required for investment in climate change mitigation

and digitalization constitutes a huge source of potential demand for credit. But the slowdown in new real-estate finance business due to higher borrowing costs indicates that success on this front cannot be taken for granted. Support in the form of well thought-out economic policies will be crucial when it comes to kick-starting climate-oriented investment.

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