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# Financial Stability Report 2023

SCHWEIZERISCHE NATIONALBANK  
BANQUE NATIONALE SUISSE  
BANCA NAZIONALE SVIZZERA  
BANCA NAZIUNALA SVIZRA  
SWISS NATIONAL BANK





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# Financial Stability Report 2023



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# Foreword

In this report, the Swiss National Bank presents its evaluation of the stability of the Swiss banking sector. The SNB contributes to the stability of the financial system in accordance with the National Bank Act (art. 5 para. 2 (e)). A stable financial system is defined as a system in which the various components fulfil their functions and are able to withstand severe shocks. This report focuses on Switzerland's banks, as experience from financial crises shows that financial stability depends primarily on the stability of the banking sector.

The SNB monitors developments in the banking sector from the perspective of the system as a whole and with a focus on systemically important banks, because the latter have the potential to affect the system at large. The SNB does not exercise any banking supervision or enforce banking legislation. These powers lie with the Swiss Financial Market Supervisory Authority (FINMA).

This report is divided into five chapters. The executive summary (chapter 1) is followed by chapter 2, which tracks key domestic and global risks to the Swiss banking sector, focusing on credit quality, real estate and stock markets, interest rates, and developments in the international banking sector. Furthermore, the Swiss credit and real estate markets, climate risks, and macroeconomic and financial scenarios are discussed in separate subchapters. Chapter 3 provides an overview of the structure of the Swiss banking sector. Chapters 4 and 5 assess the globally active banks (Credit Suisse and UBS) and the domestically focused commercial banks ('domestically focused banks'), respectively. They are analysed separately due to the differences in their size and business model. In the case of the two globally active banks, developments over the past four quarters are analysed individually for each bank, with a focus on Credit Suisse. Following the acquisition of Credit Suisse by UBS, information on the combined bank is included wherever possible. The three domestically focused systemically important banks (DF-SIBs) – PostFinance, Raiffeisen Group and Zürcher Kantonalbank (ZKB) – are analysed together with the other domestically focused banks (chapter 5).

The banking statistics used in this report are based on official data submitted to the SNB and on data published by individual banks. Bank data are analysed at a consolidated level, i.e. banks within a group and banks legally obliged to provide assistance to each other are treated as a financial group. This document is based on data as at 31 May 2023.

A list of all abbreviations used in this report is provided at the end of the document. A glossary of technical terms can be found on the SNB's website at [www.snb.ch/glossary](http://www.snb.ch/glossary).

# 1

## Executive summary

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### Macroeconomic environment

Since the publication of the last Financial Stability Report in June 2022, the economic and financial environment of the Swiss banking sector has been challenging.

Amid high and unexpectedly persistent inflation, rapidly rising nominal interest rates and the effects of the surge in energy prices, global economic growth has slowed. Against this backdrop, corporate credit ratings have deteriorated somewhat and risk premia on corporate bonds have stayed elevated. Volatility in the financial markets has remained high, particularly in bond markets. In March 2023, the failure of Silicon Valley Bank and Signature Bank, concerns about interest rate risk at further US banks, and the uncertainty around Credit Suisse led to stress in the banking sector.

Global equity prices are currently at levels similar to a year ago, whereas real estate prices have started to decline in most major economies. In Switzerland, residential real estate price growth has declined in the owner-occupied residential segment and turned negative in the residential investment property segment, while mortgage growth has remained broadly unchanged at moderate rates.

The global macroeconomic outlook is subject to high uncertainty. The SNB's baseline scenario assumes that, in the short run, economic growth in advanced economies continues to be subdued and inflation remains elevated. The assumption is that, in response to elevated inflation, interest rates will stay substantially above the levels observed in the past decade. Over the medium term, inflation should return to more moderate levels, not least due to tighter monetary policy and the economic slowdown. Economic developments in Switzerland are broadly in line with the global trajectory in this scenario. Inflation and interest rates, however, should remain lower than in other advanced economies.

The current global environment carries risks for financial stability. For banks operating in countries where interest rates had been very low for an extended period of time, the recent rise in interest rates has initially had a positive effect, as it allows the restoration of their interest rate margins and profitability, both of which had been compressed. However, global debt is high, and the rise in interest rates will lead to a gradual increase in debt service and could result in a deterioration in credit quality. Furthermore, the rise could lead to a materialisation of interest rate risks in banks' balance sheets. The recent stress in the US banking sector has illustrated this

vulnerability. Finally, higher interest rates could trigger a further decline in real estate prices, in particular in countries showing signs of stretched valuations in real estate markets, including Switzerland.

To capture the main risks to the Swiss banking sector, the SNB considers four stress scenarios. The stress scenarios assume highly unfavourable developments that are unlikely but possible. The first offers a benchmark for longer-lasting high inflation and a more forceful monetary policy response than currently expected (interest rate shock scenario). In this scenario, persistently high inflation triggers a further global interest rate shock, a decline in real estate and financial asset prices, and economic stagnation. The second scenario assumes a global recession coupled with a deterioration in financial market conditions (global recession scenario). The third involves a major crisis in emerging economies (emerging markets crisis scenario). The fourth concerns a protracted recession in the euro area coupled with an extended period of low interest rates (protracted euro area recession scenario).

The results of the SNB's stress scenario analysis are usually presented separately for the globally active banks and the domestically focused banks. Due to the acquisition of Credit Suisse by UBS, however, the currently available data are not sufficient for a comprehensive assessment of the combined bank's resilience in such a forward-looking analysis. Therefore, this year's Financial Stability Report does not discuss the stress test results for the combined bank.

### Globally active banks

The situation at the globally active Swiss banks in the reporting period was dominated by the crisis at Credit Suisse, which ultimately led to the bank's acquisition by UBS as announced on 19 March 2023 and completed on 12 June 2023. The authorities implemented ample measures to support this acquisition. The package of measures was necessary in order to prevent the failure of Credit Suisse, which would have had serious consequences for both the Swiss economy and global financial stability. The acquisition by UBS and the measures taken by the authorities resulted in an immediate stabilisation of the situation at Credit Suisse.

The cause of the crisis at Credit Suisse was not a macroeconomic shock such as assumed under the SNB's stress scenarios. Rather, the crisis was the result of repeated incidents at the bank itself, primarily triggered by breaches of legal and supervisory obligations and shortcomings in risk management. Large fines, a number of supervisory enforcement actions and financial losses (as in the case of the default of the US hedge fund Archegos Capital Management ('Archegos') in 2021) resulted from these incidents. Together with the challenging economic and financial environment, the bank's exit from some of its businesses and the reputational damage that it incurred led to a reduction in revenues and an increase in its funding



costs. Unable to offset these with corresponding cost-cutting measures, Credit Suisse reported losses over several quarters. These developments led to an increasingly critical assessment of the bank by its clients, market participants and rating agencies.

At the beginning of October 2022, growing uncertainty surrounding the bank's outlook and rumours of impending insolvency resulted in considerable outflows of deposits and assets under management. The bank's revenue base was weakened again and its funding costs increased further. At the end of October 2022, as part of its strategic reorientation, Credit Suisse announced a significant downsizing of the investment banking business and a focus on wealth management, asset management and the Swiss business. In addition, between the end of November and the beginning of December, the bank conducted a capital increase of CHF 4 billion. This reorientation was aimed at risk reduction and as such was welcomed by the SNB. However, it came at a time when the bank was already ailing, and its implementation entailed high restructuring costs and a long transition period. Analysts and rating agencies considered the associated execution risk to be high.<sup>1</sup> In the end, the plans that Credit Suisse had drawn up were not sufficient to restore confidence on a sustainable basis. Customers continued to withdraw deposits, albeit on a much lesser scale, two of the main rating agencies downgraded the bank's credit rating, and market-based indicators such as the share price and credit default swap (CDS) premia deteriorated significantly until the end of the year. Credit Suisse closed the 2022 financial year with a loss of over CHF 7 billion – a result of both poor operating performance and extraordinary items linked to the bank's strategic reorientation.

Following the failure of Silicon Valley Bank and Signature Bank in the US in mid-March, the market's perception of Credit Suisse deteriorated further. Despite the fact that its exposure to these US banks was immaterial, Credit Suisse's share price fell by more than 30% in the subsequent days, while its CDS premia<sup>2</sup> peaked at more than 1,000 basis points on 15 March. These market events, combined with the delay in the publication of its 2022 Annual Report<sup>3</sup> and the fact that a major shareholder publicly ruled out recapitalising the bank, triggered a massive loss of confidence in Credit Suisse. The bank's liquidity was under immediate threat, as clients in both wealth management and the Swiss business withdrew deposits at a rapid rate and on a massive scale, and counterparties cut their credit limits, while payment agencies and clearing institutions requested substantial prepositioning of liquidity. Although Credit Suisse met the regulatory capital and liquidity requirements,

it became increasingly unlikely that the bank would be able to stabilise its situation through its own efforts. On 16 March, in line with its statutory task to contribute to the stability of the financial system, the SNB began providing ample liquidity assistance, as applied for by Credit Suisse, in both Swiss francs and foreign currency.<sup>4</sup> This liquidity assistance served to create the necessary time window until a comprehensive solution to the crisis of confidence could be worked out.

The package of measures under emergency law announced on 19 March 2023, centring around the acquisition by UBS and ample liquidity support, rapidly stabilised the situation. The market indicators of Credit Suisse subsequently started to converge with those of UBS, and the outflows of deposits and assets under management quickly moderated.

Crucial to this stabilisation was the market's perception of UBS as a strong and solid bank. Despite the challenging environment, UBS had been able to report high profits throughout the previous four quarters. The measures taken by the government, the SNB and the Swiss Financial Market Supervisory Authority (FINMA) also played a key role. Besides the existing liquidity-shortage financing facility (LSFF) and emergency liquidity assistance (ELA), two new instruments – additional emergency liquidity assistance (ELA+) and a liquidity assistance loan secured by a federal default guarantee (public liquidity backstop) – were introduced by the Federal Council under emergency law. These made ample liquidity available, both during the pressing phase before the public announcement of the package of measures and after. In addition, the federal government provided UBS with a loss protection guarantee of up to CHF 9 billion for a specific portfolio of difficult-to-assess Credit Suisse assets.<sup>5</sup> FINMA ordered Credit Suisse to write down specific debt instruments (additional Tier 1 or AT1 instruments) in the amount of about CHF 15 billion.<sup>6</sup> This led to a substantial increase in the bank's Common Equity Tier 1 (CET1) capital.

On 12 June, UBS completed the acquisition of Credit Suisse and the combined entity started operating as a consolidated banking group.<sup>7</sup> As previously announced, UBS intends to continue the downsizing of the investment banking business already initiated by Credit Suisse, and to maintain its own strong focus on wealth management. In line with the current 'too big to fail' (TBTF) regulations, and following a transition period starting from end-2025 and ending in 2030 at the latest,<sup>8</sup> the combined bank will

1 Cf. Fitch Ratings, 28 October 2022: "The restructuring ( ... ) entails substantial execution risks given the scale of the transformation over a three-year period in a deteriorating operating environment. ( ... ) We expect the restructuring to add to pressure on profitability given the large associated charges, and scaling back the investment bank while asset valuations are depressed could generate significant losses."

2 Premia for credit protection (five-year senior).

3 Cf. Credit Suisse press release of 9 March 2023.

4 Cf. SNB press release of 15 March 2023 and Credit Suisse press release of 16 March 2023.

5 This guarantee will take effect only if UBS actually incurs losses arising from the realisation of these assets and the losses in question exceed CHF 5 billion. Cf. Federal Council press release of 9 June 2023.

6 Cf. FINMA press release of 23 March 2023. FINMA ordered that Credit Suisse's outstanding amount of AT1 capital notes of a nominal value of approximately CHF 16 billion and a fair value of approximately CHF 15 billion be written down to zero.

7 Cf. UBS press release of 12 June 2023.

8 Cf. FINMA press release of 12 June 2023.

have to comply with capital requirements that reflect the change in its systemic importance.

### Reflections on the crisis at Credit Suisse

It is crucial to draw lessons from the crisis at Credit Suisse and to take appropriate measures. These measures need to strengthen banks' resilience in order to prevent a loss of confidence wherever possible, and ensure a broad range of effective options to stabilise, recover or wind down a systemically important bank in the event of a crisis. Three observations from this crisis are particularly relevant from the SNB's perspective.

First, compliance with capital requirements is necessary but not sufficient to ensure confidence in a bank. Credit Suisse's regulatory capital ratios at group level exceeded the applicable regulatory requirements throughout the crisis. Clients, market participants and rating agencies, however, were increasingly casting doubt on the profitability outlook of the bank, its resilience and hence its ability to successfully implement its transformation plan.

Second, AT1 capital instruments absorbed losses only as the point of non-viability was imminent and state intervention became necessary. At this late stage in the crisis, AT1 played an important role in the package of measures. Yet, the AT1 features designed for early loss absorption in a going concern were not effective. The bank did not cancel interest payments on AT1 instruments despite incurring sustained losses and facing an uncertain profitability outlook. Cancelling interest payments would have provided immediate financial relief. At the same time, however, Credit Suisse would have exposed itself to the risk of negative market reactions – and thus also to the risk that refinancing would have become even more difficult and expensive. Moreover, the quantitative trigger for an automatic write-down of AT1 instruments was below the level of capitalisation that market participants and rating agencies viewed as necessary to ensure resilience and confidence.<sup>9</sup>

Third, the scale and pace of deposit outflows that resulted from the loss of confidence were unprecedented and more severe than assumed under the liquidity regulations. Moreover, at a legal entity level, a large part of the liquidity buffers held to fulfil the liquidity coverage ratio (LCR) requirement served to cover operational liquidity needs and additional prepositioning requirements imposed by payment agencies and clearing institutions. The bank's liquidity buffers and the collateral prepared for central bank facilities were not sufficient to cover the massive liquidity outflows and the higher prepositioning requirements. ELA+, secured by means of preferential rights in bankruptcy proceedings, was introduced to complement ELA. Moreover, the total liquidity support was calibrated in such a way that, together with the bank's liquidity buffers, it could cover virtually all

short-term liabilities of the bank. In the SNB's view, going forward, banks should be required to prepare a minimum amount of assets that can be pledged at central banks.<sup>10</sup>

Taken together, these observations also raise questions regarding the ability of the TBTF framework to oblige a systemically important bank to take sufficient corrective action in a timely manner, so that it can recover by its own means in a stress situation. Arguably, the need for legal certainty requires regulatory metrics, such as capital requirements, to play an important role in assessing the need for corrective action – and in enforcing it. Still, the experience made with Credit Suisse has shown that, in a period of stress, regulatory metrics are relatively narrow and may delay corrective action. Clients, market participants and rating agencies were concerned by the bank's poor profitability outlook, its reputational loss and the execution risk associated with its plan. This affected the bank's ability to raise capital and issue debt, and thereby weakened the bank further. The bank became a market outlier and suffered from considerable outflows of deposits and assets under management, despite complying with regulatory requirements. The massive loss of confidence ultimately necessitated a comprehensive package involving acquisition by UBS as well as support measures from the SNB and the federal government. In a context of global market stress, the authorities decided against the resolution strategy provided for under the TBTF regulations, as it was doubtful that this option would have restored the necessary confidence.<sup>11</sup> They concluded that an acquisition by UBS was the more appropriate measure to resolve the crisis of confidence. Looking forward, the experience with Credit Suisse<sup>12</sup> shows the need for a review of the TBTF framework in order to facilitate early intervention.

It is now up to the authorities to carry out an in-depth review and draw lessons, also in view of the higher systemic importance of the combined bank and the associated risks for Switzerland. A thorough analysis will be conducted in the context of the legally required regular review of the TBTF regulations. The implementation of the revised liquidity requirements will also play an important role in this respect. The results will be presented to parliament within 12 months as part of the Federal Council's next report on systemically important banks.<sup>13</sup> The SNB will contribute to this work.

9 Cf. box 'Reflections on the crisis at Credit Suisse – capital and resilience'.

10 Cf. box 'Reflections on the crisis at Credit Suisse – liquidity'.

11 Federal Council, 'Botschaft über den Nachtrag Ia zum Voranschlag 2023' (dispatch on addendum Ia to the 2023 budget) of 29 March 2023, pp. 17–18.

12 UBS was also compliant with capital requirements when it received state support in 2008.

13 Cf. Federal Council, 'Botschaft über den Nachtrag Ia zum Voranschlag 2023' (dispatch on addendum Ia to the 2023 budget) of 29 March 2023.

### **Domestically focused banks**

Against the background of rising interest rates, domestically focused banks' profitability improved slightly, at low levels, in 2022. The most important drivers were increasing net interest and trading income. Banks' net interest margins rose after having decreased over more than a decade.

As in previous years, domestically focused banks retained a significant share of their earnings and further built up their total loss-absorbing capacity. Their capital buffers in excess of the regulatory minima are substantial, and high by historical comparison.

In the current interest rate environment, the net interest margins and profitability of domestically focused banks should continue to gradually improve going forward. However, in the event of a further significant rise in interest rates, these banks could be affected through their exposure to the mortgage and real estate markets and to interest rate risk from maturity transformation. Credit losses might increase and higher funding costs would outweigh the positive impact on net interest income.

The SNB's stress scenario analysis suggests that domestically focused banks' capital buffers should ensure adequate resilience overall. Most banks' capital buffers remain sufficient to cover the loss potential stemming from their exposures. This applies both in a scenario involving a materialisation of risks on the Swiss mortgage and real estate markets (interest rate shock scenario) and in a scenario involving a severe recession (protracted euro area recession scenario). Under these scenarios, domestically focused banks would incur substantial losses. However, most of them would be able to absorb these losses and continue to perform their role as credit providers to the real economy thanks to their capital buffers, i.e. without falling below regulatory minima. The reactivation of the sectoral countercyclical capital buffer (CCyB), which became effective in September 2022, plays an important role in this respect as it helps to ensure the banking sector's resilience. As envisaged in the Basel Committee on Banking Supervision's CCyB framework, this capital buffer would be made available to absorb losses and sustain lending in the event of a materialisation of risks on the mortgage and real estate markets.

# 2 Macroeconomic environment

## 2.1 KEY DEVELOPMENTS

Since the publication of the last Financial Stability Report in June 2022, the economic and financial environment of the Swiss banking sector has been challenging.

Amid high and unexpectedly persistent inflation, rapidly rising nominal interest rates and the effects of the surge in energy prices, global economic growth has slowed. Against this backdrop, corporate credit ratings have deteriorated somewhat and risk premia on corporate bonds have stayed elevated. Volatility in the financial markets has remained high, particularly in bond markets. In March 2023, the failure of Silicon Valley Bank and Signature Bank, concerns about interest rate risk at further US banks, and the uncertainty around Credit Suisse led to stress in the banking sector.

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The global macroeconomic outlook is subject to high uncertainty. The SNB's baseline scenario assumes that,

in the short run, economic growth in advanced economies continues to be subdued and inflation remains elevated. The assumption is that, in response to elevated inflation, interest rates will stay substantially above the levels observed in the past decade. Over the medium term, inflation should return to more moderate levels, not least due to tighter monetary policy and the economic slowdown. Economic developments in Switzerland are broadly in line with the global trajectory in this scenario. Inflation and interest rates, however, should remain lower than in other advanced economies.

The current global environment carries risks for financial stability. For banks operating in countries where interest rates had been very low for an extended period of time, the recent rise in interest rates has initially had a positive effect, as it allows the restoration of their interest rate margins and profitability, both of which had been compressed. However, global debt is high, and the rise in interest rates will lead to a gradual increase in debt service and could result in a deterioration in credit quality. Furthermore, the rise could lead to a materialisation of interest rate risks in banks' balance sheets. The recent stress in the US banking sector has illustrated this vulnerability. Finally, higher interest rates could trigger a further decline in real estate prices, in particular in countries showing signs of stretched valuations in real estate markets, including Switzerland.

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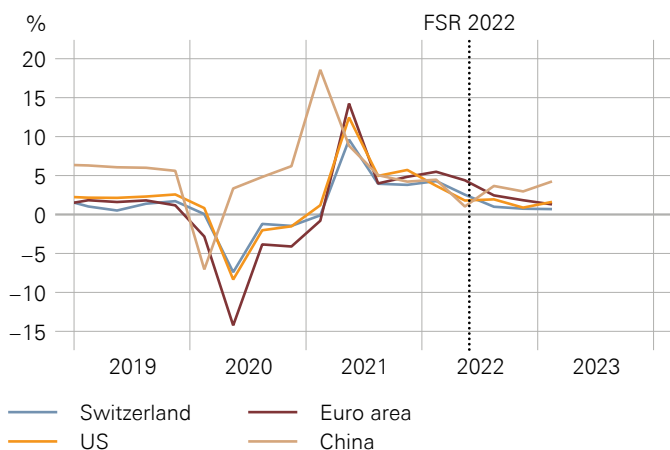
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*Global economic growth slows down:* Overall, global economic growth has slowed over the past year (cf. chart 1). Besides the strong post-pandemic growth normalising, this slowdown was due to various other

### GDP GROWTH

Year-on-year real GDP growth rates

Chart 1



Source(s): Refinitiv, SECO

factors. First, consumer purchasing power declined amid persistently high global inflation. Second, the more restrictive monetary policy and the rise in global interest rates led to tighter financial conditions. Third, energy prices were elevated and the availability of natural gas was limited, especially in Europe. In advanced economies, GDP growth was modest but positive. In China, GDP has rebounded since Q3 2022 as coronavirus lockdowns were lifted.

*Upward pressure on interest rates as inflation remains high:*

Global inflation has remained well above central bank targets over the past year (cf. chart 2). While inflation still reflected the increase in energy and food prices in the first half of 2022, underlying inflation and second-round effects have strengthened since. Therefore, many central banks have raised their policy rates at a rapid pace.

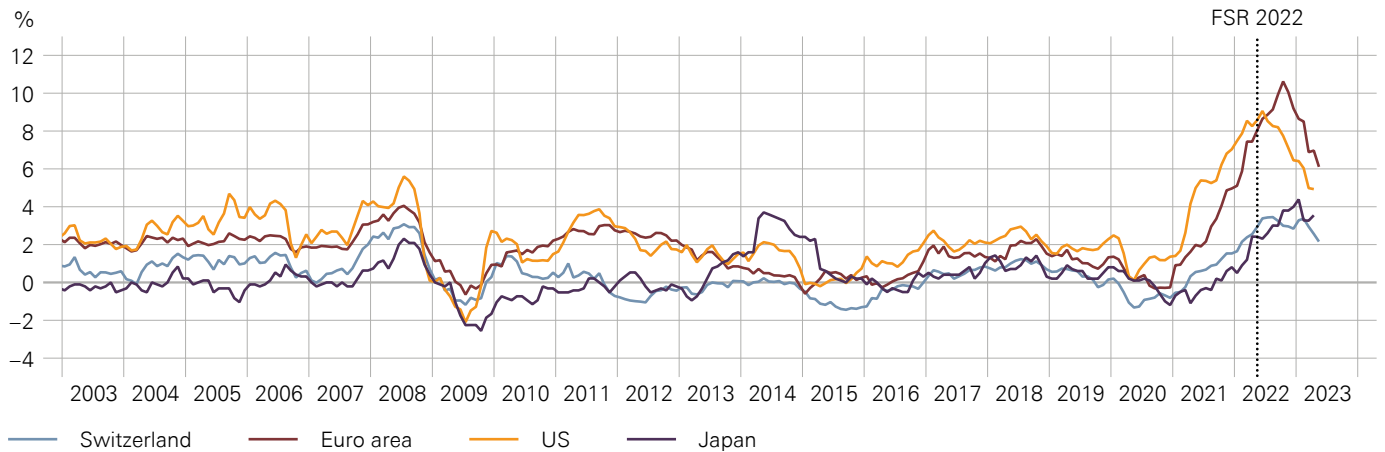
Over the past year, the level and volatility of global long-term nominal interest rates have increased significantly (cf. chart 3). As the fast tightening of monetary policy heightened recession concerns, short-term interest rates have surpassed long-term interest rates, resulting in a negative term spread<sup>1</sup> (cf. chart 4). This pattern, represented by an inverted yield curve, was especially pronounced in the US, the UK and Germany. As banks borrow short term and lend long, a negative term spread will adversely affect banks' profitability.

<sup>1</sup> The term spread is defined as the difference between long-term and short-term interest rates.

**INFLATION**

Consumer prices, year-on-year change

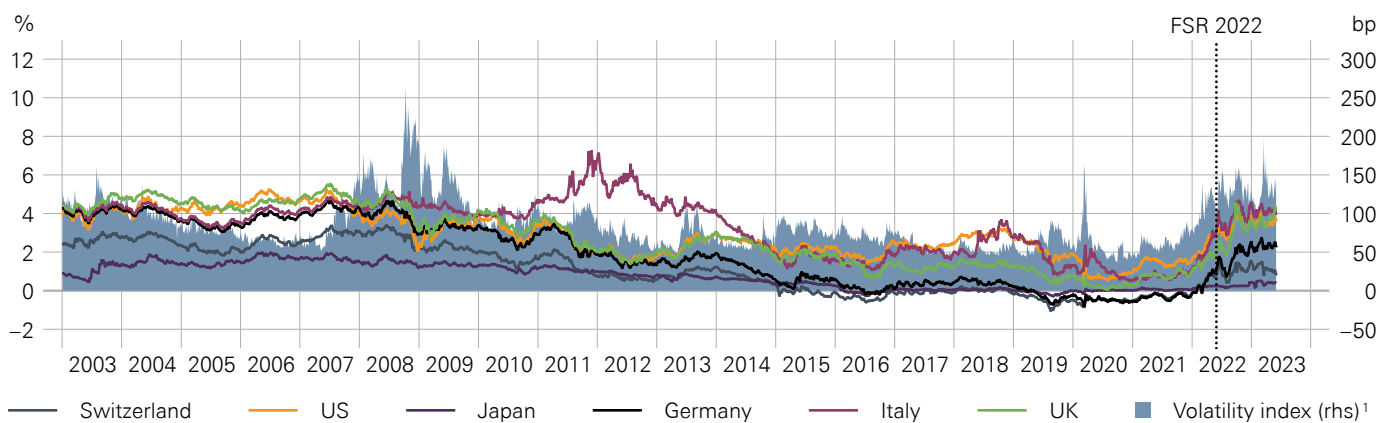
Chart 2



Source(s): Refinitiv, SFSO

**LONG-TERM INTEREST RATES: TEN-YEAR GOVERNMENT BONDS**

Chart 3



<sup>1</sup> The index used is the MOVE Index, which measures the implied volatility of US Treasury options.

Source(s): Bloomberg, Refinitiv

*Slight deterioration in forward-looking indicators for global credit quality:* Taken together, forward-looking indicators for global credit quality have slightly deteriorated over the past year. In particular, on the back of slowing growth and rising interest rates, corporate ratings have started to decline. Specifically, the ratio of rating downgrades to total rating changes has increased in Europe and in the US and is now close to historical averages (cf. chart 5).

Global credit risk premia – a market-based indicator for expected credit quality – remain elevated and are at similar levels to a year ago, and well below those observed during past periods of financial stress. This is true for both the corporate (cf. chart 6) and the sovereign segment (cf. chart 7). Backward-looking indicators such as non-performing loans have remained at historically low levels globally.

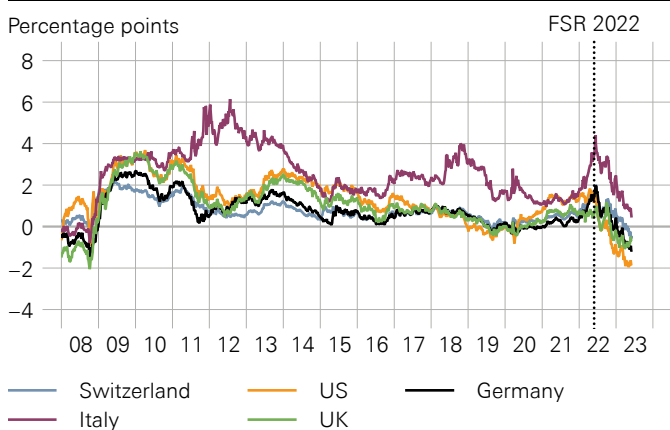
Going forward, there are significant vulnerabilities that could amplify potential future shocks. In both the corporate and the sovereign segments, global debt relative to GDP increased sharply at the beginning of the pandemic and has decreased only moderately since, remaining at elevated levels similar to a year ago (cf. chart 8). The observed increase in interest rates and the reduction in real income due to inflation may pose risks to the ability of some businesses and households to service their debts.<sup>2</sup>

In Switzerland too, corporate bond spreads are at similar levels to a year ago. In line with global developments, private debt relative to GDP remains high. High household debt relative to GDP, and rising affordability risks at

<sup>2</sup> Cf. Board of Governors of the Federal Reserve System, Financial Stability Report, November 2022, p. 2, and Bank of England, Financial Stability Report, December 2022, p. 5.

### INTERNATIONAL TERM SPREADS

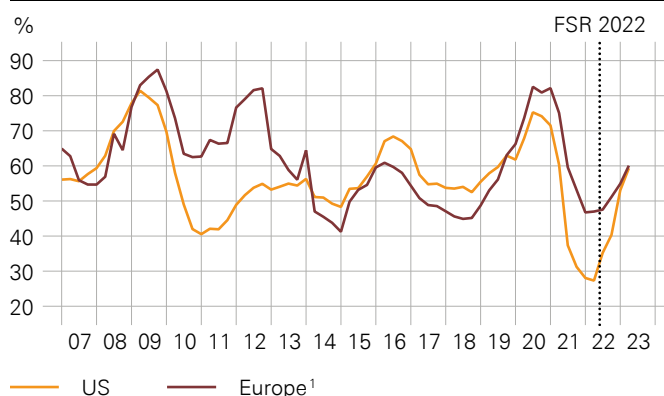
Term spreads between 10-year government paper and 3-month overnight rates, daily figures Chart 4



Source(s): Bloomberg, Refinitiv, SNB

### RATING DOWNGRADES RATIO

Number of downgrades relative to total rating changes in non-financial sector, moving average over four quarters Chart 5

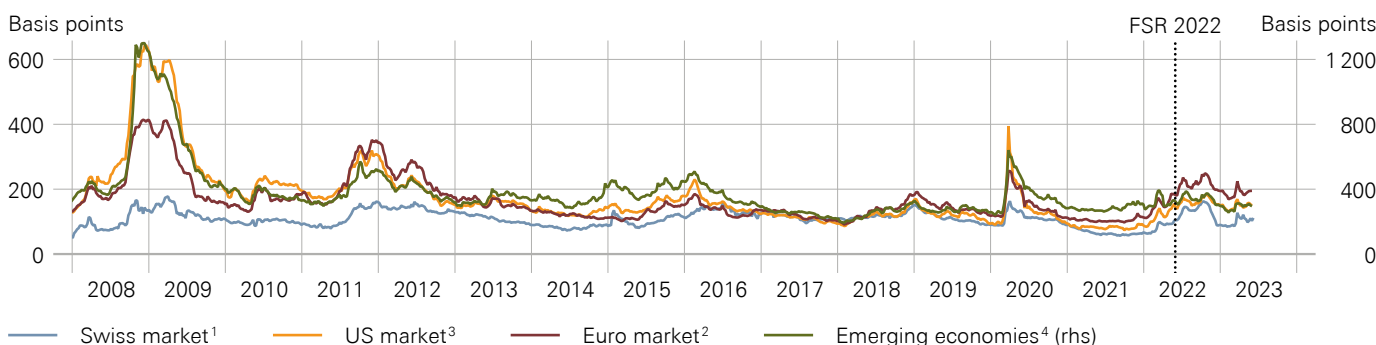


<sup>1</sup> EU-17 countries plus Switzerland, Norway and Iceland.

Source(s): Moody's

### BOND SPREADS

Yield spread between corporate and government bonds Chart 6



<sup>1</sup> Yields for Swiss investment-grade corporate bonds and for Swiss Confederation bonds (5-year maturity), calculated by the SNB.

<sup>2</sup> Euro-Aggregate Corporate (investment grade, 5–7-year maturity, EUR-denominated) and German Government (5–7-year maturity), Bank of America.

<sup>3</sup> US Corporate (investment grade, 5–7-year maturity, USD-denominated) and US Treasury (5–7-year maturity), Bank of America.

<sup>4</sup> Emerging Economies Corporate (USD and EUR-denominated), option-adjusted spread, Bank of America.

Source(s): Refinitiv, SNB

commercial borrowers, constitute relevant vulnerabilities (cf. subchapters 2.2 and 5.2). That said, non-performing loan ratios remain historically low and indicators for corporate insolvencies are still below pre-pandemic levels, despite recent increases.

**Volatile global stock prices:** The stock market decline underway since end-2021 came to a halt in Q3 2022 and prices have started to increase somewhat since then (cf. chart 9). Consequently, global stock prices and the cyclically adjusted price-to-earnings ratio (cf. chart 10), a measure of stock valuation, are currently at levels similar to a year ago. Amid the high uncertainty about interest rate and economic developments, stock price volatility has remained above historical averages (cf. chart 9).

**Stress in the global banking sector in March:** In March, the failure of Silicon Valley Bank and Signature Bank, concerns about interest rate risk at further US banks, and the uncertainty around Credit Suisse led to stress in the global banking sector. Stock prices for banks dropped sharply and have only partially recovered since.

Banks' credit default swap (CDS) premia – market indicators of bank credit risk – were globally less affected than their equity prices and increased only moderately (cf. chart 11). Overall, they are at similar levels to a year ago.

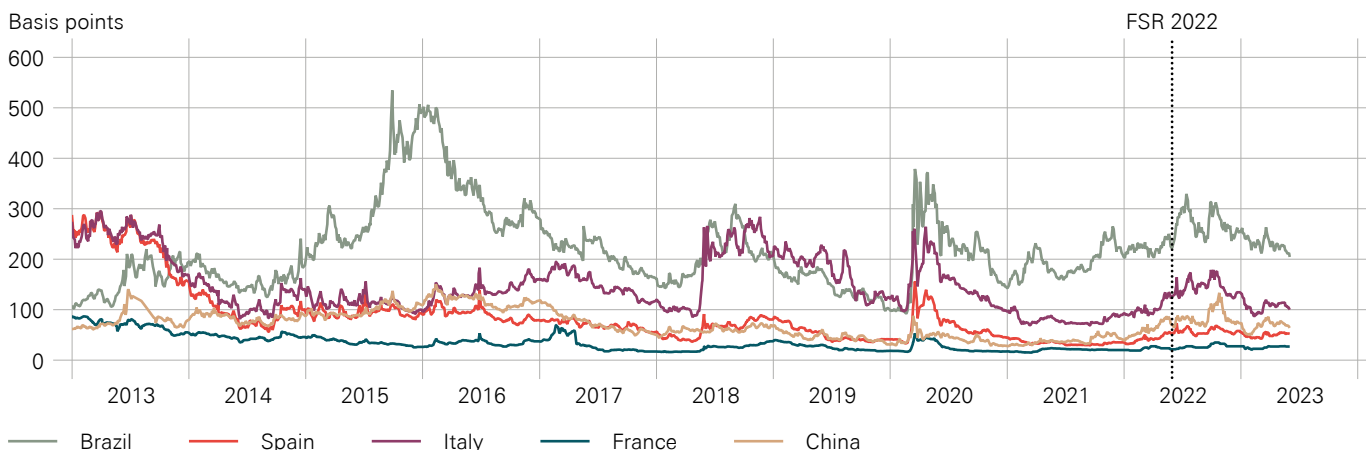
**Declines in real estate prices:** Driven by rising interest rates, global real estate markets have cooled down considerably over the past year (cf. chart 12). Overall, these markets remain vulnerable.<sup>3</sup>

3 Cf. IMF, Global Financial Stability Report, April 2023, pp. xiv, 37–43.

### SOVEREIGN CREDIT DEFAULT SWAP PREMIA

Premia for credit protection (five-year senior)

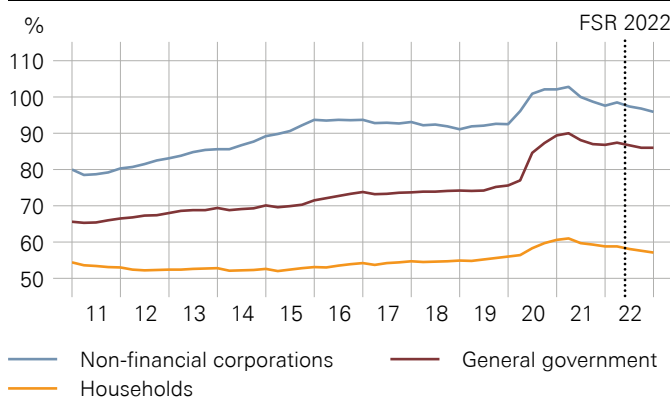
Chart 7



Source(s): Bloomberg, Refinitiv

### GLOBAL DEBT-TO-GDP RATIO<sup>1</sup>

Chart 8



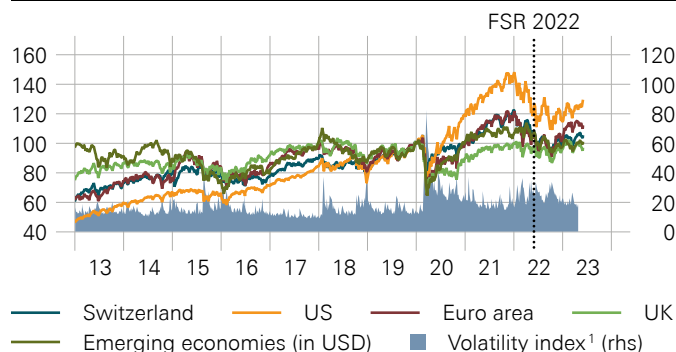
1 All reporting countries. Aggregate based on conversion to USD at PPP exchange rates.

Source(s): BIS

### STOCK MARKET INDICES

Datastream global indices (indexed to 31 Dec 2019 = 100) and volatility

Chart 9



1 The index used is the Chicago Board Options Exchange Market Volatility Index (VIX), which measures the implied volatility of index options on the S&P 500 (in %).

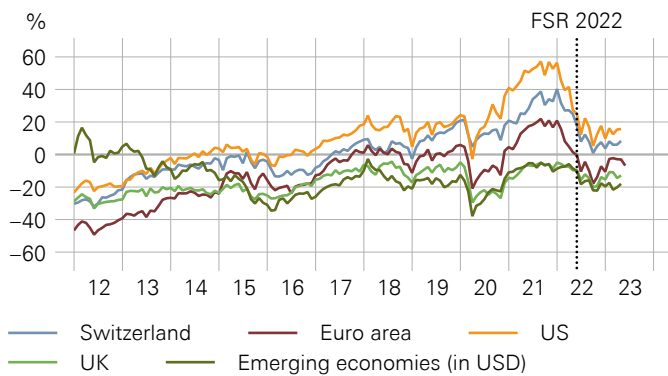
Source(s): Refinitiv

In residential real estate markets, real prices have generally decreased or stalled (cf. chart 12). In Switzerland, price growth has declined in the owner-occupied residential segment and turned negative in the residential investment property segment. Vulnerabilities remain high in a number of major economies. The residential price-to-rent ratio, a general measure of real estate valuation, still lies above its long-term average in many countries, including Switzerland (cf. chart 13). More generally, a wide range of indicators, accounting for factors such as income and interest rates, point to persisting vulnerabilities on many residential real estate markets.

In the commercial investment segment, real estate prices in the US and the euro area have started to fall at a more rapid pace than in the residential segment. In Switzerland, on the other hand, conditions on the commercial real estate market have remained stable overall.

### CYCLICALLY ADJUSTED PRICE-TO-EARNINGS RATIO

Deviation from average;<sup>1</sup> Datastream global indices Chart 10



<sup>1</sup> The average of earnings is calculated using a ten-year moving average. The average of the price/earnings ratio is calculated over the period 1985–2021 or for the period where data are available.

Source(s): IMF, Refinitiv

## 2.2 SWISS CREDIT AND REAL ESTATE MARKETS

Following the increase in interest rates in 2022, price growth on the residential real estate market has declined in the owner-occupied segment and turned negative in the residential investment property segment, while mortgage growth has remained broadly unchanged. Compared to other countries, the impact of rising interest rates on the Swiss mortgage and real estate markets has been moderate overall. One explanation for the limited impact in the owner-occupied segment is that interest rates on new mortgages only started increasing during the second half of 2022, and to a moderate extent.<sup>4</sup> As a consequence, demand for housing has remained higher than supply, which continues to be tight.

With the rise in interest rates on mortgages, the likelihood of declines in residential real estate prices has grown. This applies to both the owner-occupied and the residential investment property segment – in the latter, prices have actually already declined somewhat.

### Vulnerabilities on residential real estate market persist

Transaction price indices for single-family houses and apartments indicate that the pace of price growth in the owner-occupied residential real estate market slowed between Q1 2022 and Q1 2023. Year-on-year transaction price growth declined from 8.7% to 3.6% for single-family houses, and from 7.5% to 3.5% for apartments.<sup>5</sup>

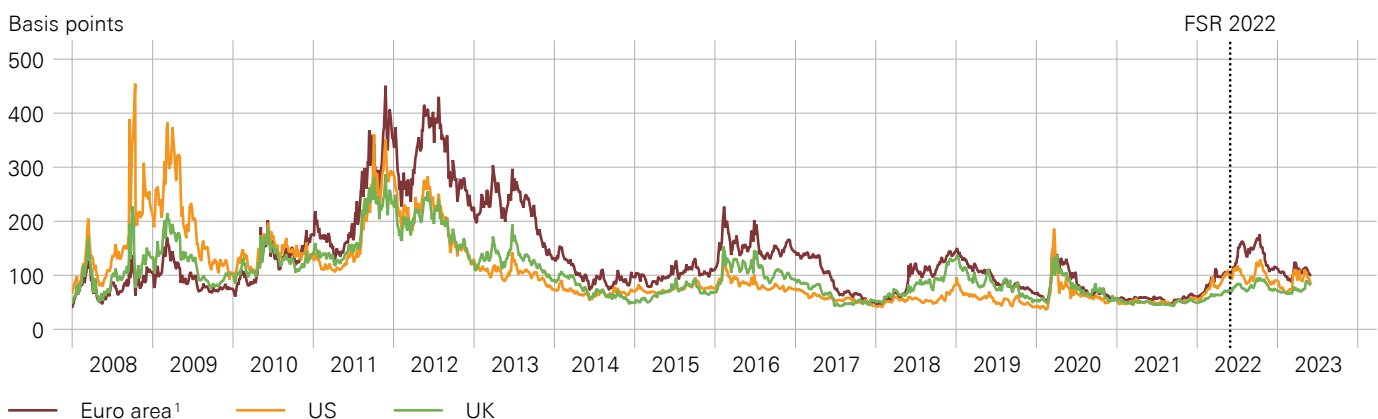
For the residential investment property segment, price indices suggest a more pronounced slowdown, particularly

<sup>4</sup> The increase in the average interest rate on new mortgages was smaller than the increase in risk-free interest rates due to the shift from fixed-rate mortgages towards mortgages linked to SARON (Swiss Average Rate Overnight, cf. subchapter 5.2.1). Moreover, rates on new fixed-rate mortgages granted by banks increased less than the corresponding published rates.

<sup>5</sup> Source: Wüest Partner. According to the Swiss Federal Statistical Office (SFSO) indices, year-on-year price growth slowed from 8.5% in Q1 2022 to 4.1% in Q1 2023 for single-family houses, and from 5.6% to 3.8% for apartments.

### BANK CREDIT DEFAULT SWAP PREMIA

Average of biggest banks (five-year senior) Chart 11



<sup>1</sup> France, Germany, Italy, the Netherlands and Spain.

Source(s): Bloomberg, Refinitiv, SNB calculations



in Q1 2023. Year-on-year growth of transaction prices for apartment buildings decelerated from 9.3% in Q1 2022 to –1.3% in Q1 2023.<sup>6</sup> There is some heterogeneity in data on the residential investment property segment, however, with some indicators implying an even stronger price decline.<sup>7</sup>

Vulnerabilities persist in both the owner-occupied and investment property segments of the residential real estate market. Between Q1 2022 and Q1 2023, they increased in the owner-occupied segment and decreased in the residential investment property segment.

A broad set of indicators points to vulnerabilities on the residential real estate market. Uncertainty regarding the appropriate valuation level of real estate according to these indicators is high, though. For the apartment segment, for example, simple valuation metrics, such as the ratios of price to rent and price to per capita GDP, have reached levels that are around 30–40% above their historical averages (cf. chart 14). According to model-based indicators taking into account a broader set of economic factors (e.g. income and interest rates in addition to GDP and rents), current prices are around 15–40% above their model-implied levels.

The upper and lower ends of this range are given by the ‘user cost’ model.<sup>8</sup> This forward-looking metric is

6 Source: Wüest Partner.

7 For example, according to the Fährländer Partner index, year-on-year apartment building price growth was –12.1% in Q1 2023 (Q1 2022: +8.2%). Moreover, some data sources show noticeable increases in initial yields; taking into account that rents have risen only slightly over recent quarters, this also points towards significant price declines.

8 In the user cost model, the costs for a tenant (i.e. rents) must be equal to the costs for a property owner (mortgage payments, maintenance costs, and taxes minus expected appreciation of the property). For a description of the user cost model, cf., for example, Poterba, J. M. (1984), Tax Subsidies to Owner-Occupied Housing: An Asset-Market Approach, *The Quarterly Journal of Economics*, 99(4), pp. 729–752. In the ‘historical average’ version of the user cost model, long-term expectations for the real mortgage rate are set to the corresponding historical average of 2.5%; in the ‘low interest rate’ and ‘very low interest rate’ versions, the expected real mortgage rate is set to 1.5% and 1.0%, respectively.

sensitive to assumptions regarding the evolution of interest rates and rents over the very long term. Assuming that the real mortgage rate returns to its average for the past 50 years (2.5%, ‘historical average’), market prices for apartments are around 40% above the level that can be explained by fundamental factors. By contrast, assuming an environment of very low interest rates with a real mortgage rate of 1.0% (‘very low interest rate’), the corresponding deviation is slightly over 15%.

A further estimate is provided by an econometric model<sup>9</sup> that explains real estate prices based on their historical relationship with per capita GDP, the stock of residential buildings per capita and the real long-term interest rate. Current prices are around 20% higher than the level implied by this model.

Therefore, taking the various approaches into consideration, current apartment prices are roughly 15–40% above the levels that can be explained by fundamental factors. This range has shifted upwards compared to Q1 2022 and the period before the pandemic.

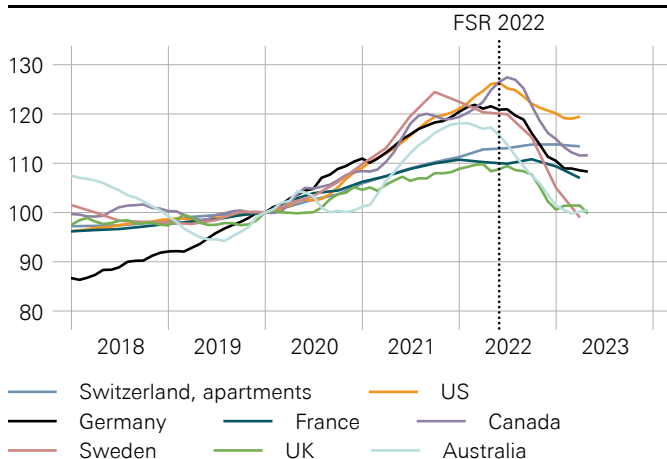
When interpreting these figures, it is important to bear in mind that they do not capture all demand and supply factors that can affect the residential real estate market. For example, the high and rising share of already built-up residential areas coupled with slow advances in high-density construction have contributed to the tightness of supply. At the same time, household growth has been higher than population growth in recent years, as the average household size has decreased.

9 For a description of the econometric model, cf., for example, Cuestas, J. C., M. Kukk and N. Levenko (2021), Misalignments in house prices and economic growth in Europe, *Working Papers*, 2021/07, Economics Department, Universitat Jaume I, Castellón, or Muellbauer, J. (2018), Housing, debt and the economy: a tale of two countries, *National Institute Economic Review*, National Institute of Economic and Social Research, vol. 245(1), August, pp. 20–33. A similar model is also used by the European Central Bank (cf. ECB, Financial Stability Review, May 2022, p. 34, and ECB, Financial Stability Review, November 2015, pp. 45–47).

## RESIDENTIAL REAL ESTATE PRICE INDICES

In real terms, Dec 2019 = 100

Chart 12

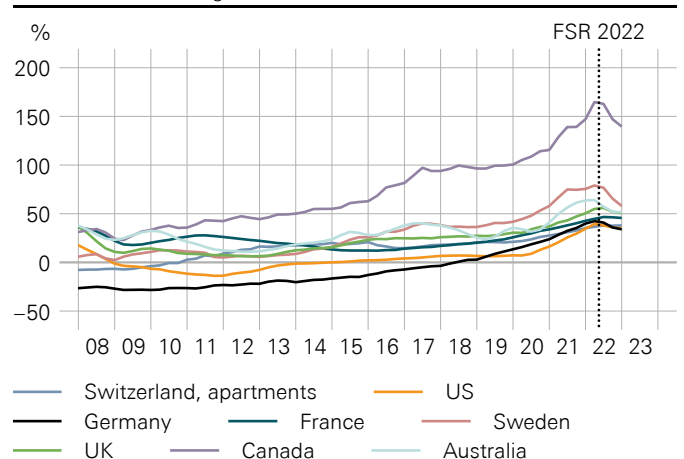


Source(s): Refinitiv, Wüest Partner

## RESIDENTIAL REAL ESTATE PRICE-TO-RENT RATIOS

Deviation from average since 1970

Chart 13



Source(s): OECD, Refinitiv, SFSO, Wüest Partner

In the absence of sufficiently long time series, the impact of these factors cannot be properly modelled. As these factors probably explain part of the price growth observed in recent years, the indicators described above may overestimate the vulnerability of the domestic residential real estate market.

However, uncertainty with regard to the persistence of these factors is high. For example, regulatory changes might allow an acceleration in high-density construction. Overall, the SNB's assessment remains that the residential real estate market is vulnerable, implying that price sensitivity to shocks is elevated.

### Likelihood of corrections has increased

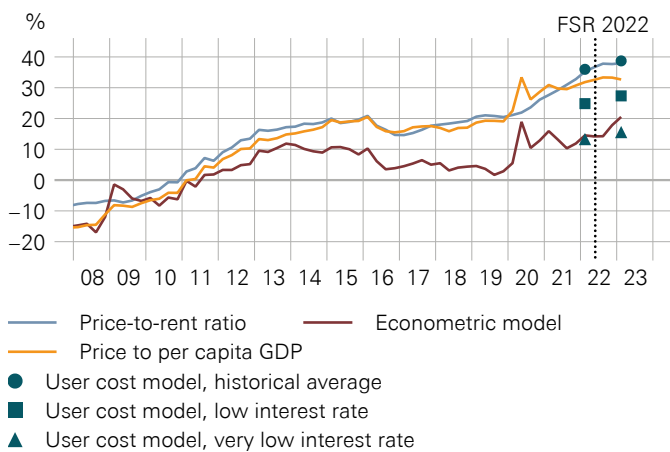
The increase in interest rates in 2022 has had a dampening impact on the residential real estate market in Switzerland. At the international level, residential price developments

have varied. Those countries with a stronger rise in interest rates and high real estate prices, as measured by the price-to-rent ratio, have experienced comparatively large nominal price declines so far (cf. chart 15).

Given that real estate markets often react with a delay to changes in interest rates and that the pass-through of higher risk-free interest rates on mortgage rates is still ongoing, price declines in the Swiss residential investment property segment may well continue going forward. Moreover, the likelihood of price declines in the owner-occupied residential segment is increasing. Price declines could be smooth and, given positive inflation rates, occur without implying significant nominal adjustments. However, from a risk management perspective, it is prudent to take into account that abrupt and substantial nominal price corrections could occur in the medium term, especially in the event of unexpectedly large interest

### APARTMENTS: VALUATION INDICATORS

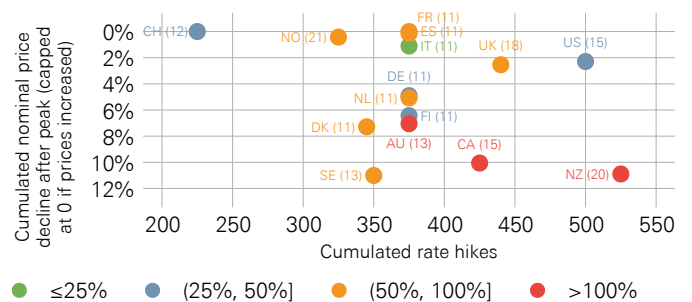
Deviation from indicator-implied price levels Chart 14



Source(s): SECO, SFSO, SNB, Wüest Partner

### RATE HIKES AND HOUSE PRICE CORRECTIONS SINCE 2021<sup>1</sup>

Colours show peak price-to-rent ratio<sup>2</sup> Chart 15



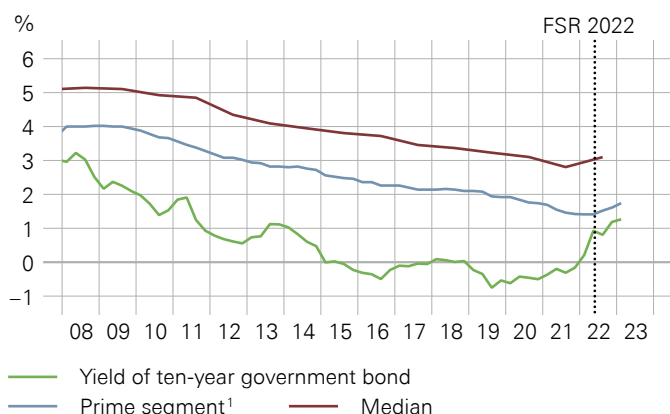
1 The numbers in parentheses indicate the number of months after the first tightening step since 2021. Latest datapoints for prices: May 2023 for AU, NO, UK; April 2023 for CA, DE, FN; March 2023 for NL, US; Q1 2023 for CH, ES, FR, SE; Q4 2022 for DK, IT, NZ.

2 Peak deviation (since 2021) of the price-to-rent ratio from its long-term average.

Source(s): BIS, OECD, Refinitiv, SFSO, Wüest Partner

### INITIAL YIELDS OF RESIDENTIAL REAL ESTATE

Yields of direct real estate investments vs. benchmark rates Chart 16

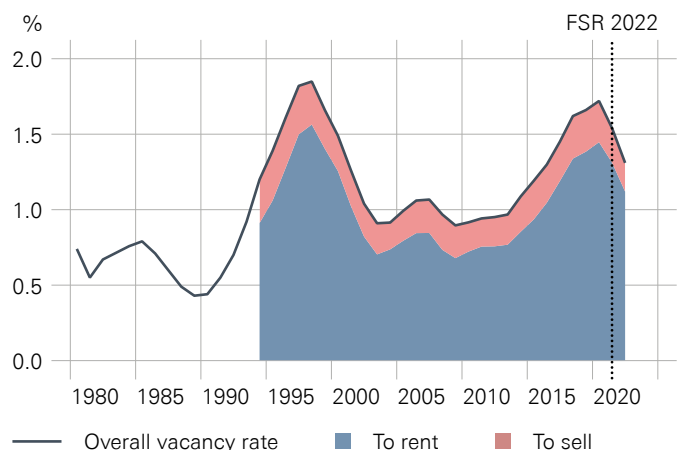


1 Average of Basel, Berne, Geneva, Lausanne, Zurich.

Source(s): SNB, Wüest Partner

### RESIDENTIAL VACANCY RATE

Vacant dwellings relative to total number of dwellings Chart 17



Source(s): SFSO, SNB

rate increases. Such corrections would lead to a deterioration in the quality of banks' mortgage portfolios, as depicted in the interest rate shock scenario (cf. subchapter 5.2.4).

### **Risks in residential investment property higher than in owner-occupied segment**

Although vulnerabilities are visible across all segments of the residential real estate market, the likelihood and potential scale of price corrections appear to be greatest in the investment property segment.

First, the peak deviation from levels which can be explained by fundamental factors has been highest in this segment. For example, the deviation of the price-to-rent ratio from its long-term average peaked at 45% for apartment buildings in 2022, compared to a current value of 38% for apartments.

Second, and closely related, the likelihood of declining prices in response to the increase in interest rates in 2022 is the highest in this segment. At current interest rates, the spread between the respective yield and yields on government bonds, is significantly smaller than the average over the past decade (cf. chart 16). In order to restore the spread to its 15-year average, at current interest rates, yields for residential property investments would have to increase significantly from their current low levels.

Such an increase in yields would require significantly lower prices, significantly higher rents, or a combination of both.<sup>10</sup> With respect to rents, there is upward potential due to declining vacancies (cf. chart 17) and the pass-through of rising interest rates and consumer price inflation allowed by rental law. However, this potential appears too small to restore risk premia, implying that a substantial price decline would probably be part of the adjustment.<sup>11</sup>

Third, commercial investors might amplify potential price corrections in the residential investment property segment. Experience shows that in a downturn, commercial investors with limited liability, such as real estate companies, default on their debt more quickly than private property owners. A sudden wave of defaults may in turn lead to a surge in fire sales and further depress real estate prices in this segment. By contrast, private owners are liable with all their assets, which may dampen price corrections in that segment. Moreover, there is evidence of strong

financial resilience among Swiss households (cf. SNB Financial Stability Report 2022, pp. 35–36).

### **Structural challenges in commercial segment**

In the commercial segment, conditions have remained stable overall. While the available transaction price indices show heterogeneous developments,<sup>12</sup> tenant demand in the commercial rental market was generally robust in 2022 against the backdrop of solid employment growth in office-intensive industries and robust retail sales. Developments varied, however, depending primarily on location. For example, in the office segment, tenant demand was higher in central locations than in the periphery.<sup>13</sup>

Cyclical vulnerabilities appear to be somewhat lower in the commercial segment than in the residential investment segment. Commercial real estate prices have increased less over the past 15 years and yields are higher than in the residential segment. Nevertheless, risk premia are currently compressed in the commercial segment as well.

Furthermore, structural changes, such as the growing importance of working from home or the shift towards online shopping, will continue to present challenges for the commercial segment.

### **Mixed signals on risk situation in mortgage market**

While a broad set of indicators points to vulnerabilities on the residential real estate market, risk indicators for the mortgage market convey mixed signals.

Despite increasing interest rates, year-on-year mortgage growth in the Swiss banking sector as a whole remained broadly unchanged at 3.3% between Q1 2022 and Q1 2023.<sup>14</sup> Whereas mortgage growth at financial sector companies increased, household mortgage growth declined. Overall mortgage growth remains moderate by historical comparison.

Driven by strong nominal GDP growth, the mortgage-to-GDP ratio declined between Q1 2022 and Q1 2023, as did the difference, or 'gap', between this ratio and its long-term trend – a measure of vulnerability. While the ratio remains above pre-pandemic levels and is high by historical standards, the gap is currently negative.

With regard to credit quality, there are signs of elevated risks, most notably regarding mortgage lending to commercial borrowers. Affordability risks, as measured

<sup>10</sup> For example, an increase in net yields from 3% to 4% would require net rental income to increase by 33%, prices to decrease by 25%, or a combination of increasing net rental income and decreasing prices.

<sup>11</sup> At current mortgage rates, an increase in the mortgage reference rate of 100 basis points allows an increase in rents of up to 12%, depending on whether past declines in the reference rate have been passed on to tenants. Note that the reference rate-induced increase in property owners' net rental income will be somewhat higher than the increase in rents (i.e. owners' gross rental income). In some tenancies, owners may be able to impose higher rent increases, for example due to low regional vacancy rates or renovation work. However, in other tenancies, the actual extent of possible rent increases might be lower than allowed by regulation, for example in peripheral areas still experiencing high vacancy rates. Also, owners might be reluctant to impose rent increases in the lower rent segment given that many households' budgets are already burdened by rising energy and consumer prices.

<sup>12</sup> Sources: Fahrländer Partner and Wüest Partner. Note that price indices for the commercial segment tend to be more volatile than those for the residential segment, reflecting the smaller number of transactions and the greater difficulty in adjusting for changes in the quality of properties sold.

<sup>13</sup> Cf., for example, Credit Suisse, Büroflächenmarkt Schweiz 2023, December 2022.

<sup>14</sup> The mortgage growth calculations account for corrections made at bank level. Consequently, they may deviate from information published on the SNB's data portal, data.snb.ch. Mortgage growth at insurers (excluding reinsurers) amounted to -4.5% in 2022. At pension funds, for which the latest available figures are for the year 2021, mortgage growth was 7.4%. The overall market share of non-banks, i.e. insurers and pension funds, in outstanding domestic mortgages remained small – at around 3% for insurers and around 2% for pension funds in 2021.

by the LTI ratio of new mortgage loans, increased from high levels in all residential segments (cf. subchapter 5.2.1). Whereas for households, evidence from tax data suggests that financial resilience is higher and has deteriorated less than the LTI figures indicate (cf. SNB Financial Stability Report 2022, pp. 35–36), no comparable data are available for commercial borrowers. Furthermore, as mentioned, commercial investors, such as real estate companies, tend to default on their debt more quickly than households. In Q1 2023, mortgage growth at real estate companies<sup>15</sup> was 5.6% and thus significantly higher than overall mortgage growth.

### 2.3 FINANCIAL STABILITY AND CLIMATE CHANGE

The SNB actively monitors climate-related risks to financial stability. Climate change could affect banks' traditional core business – e.g. as a result of write-downs on loans to particularly exposed companies or trading losses caused by valuation adjustments in stock and bond markets.<sup>16</sup>

There are essentially two key types of climate risk: transition risks and physical risks.

Transition risks are the risks associated with transitioning to a sustainable, low-carbon economy. New laws and regulations as well as technological innovations can lead to disruptions in the economy. For example, a sudden and strong increase in emission taxes or a ban on carbon-intensive production processes could threaten the existence of companies or entire industrial sectors.

Physical risks are risks associated with an increase in the frequency and severity of climate-related natural catastrophes. These natural catastrophes involve weather events (storms, floods, droughts, etc.) as well as longer-term environmental changes (rising sea levels, changes in precipitation, etc.). For example, storms can damage production facilities and infrastructure, leading to declines in economic output.

From a financial stability perspective, the SNB focuses on whether the banking system and systemically important financial market infrastructures are adequately prepared for potential climate-related shocks and whether climate risks are properly covered by existing regulations.

#### Analyses to measure climate-related transition risks at globally active banks

In 2022, the SNB, in cooperation with the Swiss Financial Market Supervisory Authority (FINMA) and the University of Zurich, concluded a pilot project to measure climate-related transition risks at the two globally active banks, Credit Suisse and UBS.<sup>17</sup> The objectives of FINMA and the SNB were twofold: first, to gain experience in

climate-related scenario analysis and, second, to obtain an initial picture of the climate-related transition risks these two banks face.

The analysis showed that, aggregated across both banks, about one-quarter of the portfolios analysed were exposed to climate-policy-relevant sectors. These are classified as 'fossil-fuel', 'transportation', 'utility' and 'energy-intensive'. Compared to the market as a whole (market capitalisation of a global equity index from a major financial data provider), the banks' exposures to these sectors are similar or lower.

The analysis conducted in the pilot project provides an initial estimate of transition risk.<sup>18</sup> Further work by FINMA and the SNB is needed to obtain a more robust assessment of the materiality of climate risks. To this end, FINMA and the SNB have initiated a joint follow-up project and evaluated a range of alternative methodologies and tools. A well-established climate scenario data provider has been selected to support the new analysis. Some of the tools used during the pilot project will continue to serve as a benchmark.

The analysis will be based on the transition scenarios of the Network for Greening the Financial System (NGFS) and cover the portfolios of business loans, shares and corporate bonds, including related derivatives. The scenarios' impacts on these loans, shares and bonds (shocks) will be derived from model calculations produced by the data provider. The combined bank resulting from the acquisition of Credit Suisse by UBS will then apply these shocks to its portfolios. The analysis will be conducted at the level of individual companies in the bank's portfolios.

The follow-up project allows for a more robust assessment of the materiality of the banks' climate risks. First, the results and methodologies can be compared with those of the pilot project, thus improving their interpretation. Second, the higher granularity of the analysis will better account for company-specific characteristics such as the energy mix used for production, individual transition plans or the level of financial indebtedness.

#### Climate risks on mortgage market

Mortgages are the largest item on the assets side of domestically focused banks' balance sheets, as they constitute around 90% of credit volume. Alongside the traditional risks for mortgages in Switzerland, such as the effects of interest rate rises on affordability and loan-to-value ratios, climate risks can represent an additional risk. For the analysis of these risks, the SNB is in dialogue with FINMA, the State Secretariat for International Finance and other experts. A key part of this work is identifying any data gaps and closing them in a timely

<sup>15</sup> As proxied by the real estate activities sector.

<sup>16</sup> For an overview of climate risks in the context of financial stability, cf. BIS, 'The green swan', January 2020.

<sup>17</sup> Cf. SNB, Financial Stability Report 2022, p. 14.

<sup>18</sup> In line with its practice for stress tests, and in light of the fact that only two banks were analysed, the SNB does not present in detail the specific results of the stress scenario analysis.

manner. To assess transition risks for mortgages, i.e. the risks associated with moving to a low-carbon economy, data on the energy efficiency of properties, such as energy labels, are particularly important.

### Activities at international level

At international level, the SNB contributes to the activities of the NGFS to define methodologies and best practices for central banks to assess climate-related risks. Moreover, as members of the Basel Committee on Banking Supervision (BCBS), the SNB and FINMA participate in its work on integrating climate risks into banking supervision. In particular, the BCBS published guidelines on how to address climate-related financial risks within the existing Basel Framework, especially with regard to the supervision and interpretation of the existing regulations.<sup>19</sup>

As a next step, the BCBS is looking to address disclosure for climate-related financial risks, taking into account, in particular, the work underway by the International Sustainability Standards Board (ISSB),<sup>20</sup> which is expected to be finalised in summer 2023. The ISSB standards are designed to improve the quality and international comparability of companies' climate-related reporting.

## 2.4 MACROECONOMIC AND FINANCIAL SCENARIOS

To capture the different sources of risk to the Swiss banking sector, the SNB considers a baseline and four stress scenarios for developments in the economic environment and in financial market conditions. The baseline scenario reflects the current economic and financial environment and describes the most likely outcome given the information currently available. By contrast, the stress scenarios are designed for systematically analysing the vulnerabilities and resilience of the Swiss banking sector. The SNB periodically estimates the impact of the stress scenarios, irrespective of how likely a given scenario is considered to be in the short term. Each stress scenario covers a subset of relevant risk factors for Swiss banks that are analysed within an internally consistent framework. The calibration of shocks is guided by historical experience.

All of the stress scenarios concentrate on macroeconomic and financial risk factors.<sup>21</sup> The impact of the different scenarios on the Swiss banking sector as regards banks' loss potential and resilience is usually presented separately for the globally active banks and the domestically focused banks. Due to the acquisition of Credit Suisse by UBS,

however, the currently available data are not sufficient for a comprehensive assessment of the combined bank's resilience in such a forward-looking analysis. Therefore, this year's Financial Stability Report does not discuss the stress test results for the combined bank. The results for the domestically focused banks are examined in chapter 5.

### Baseline scenario

The SNB's baseline scenario assumes that, in the short run, economic growth in advanced economies continues to be subdued and inflation remains elevated. The assumption is that, in response to elevated inflation, global interest rates will stay substantially above the levels observed in the past decade. Over the medium term, inflation should return to more moderate levels, not least due to tighter monetary policy and the economic slowdown. Economic developments in Switzerland are broadly in line with the global trajectory in this scenario. Inflation and interest rates, however, should remain lower than in other advanced economies.

### Stress scenarios

*Interest rate shock:* In this scenario, persistently high inflation triggers a further global interest rate shock. Subsequently, economic growth stalls, and real estate and stock prices fall sharply. This scenario offers a benchmark for longer-lasting high inflation and a more forceful monetary policy response than currently expected.

*Global recession:* A severe global recession unfolds. Global financial stress rises significantly, and both real estate and stock prices drop sharply. Global interest rates decline.<sup>22</sup>

*Emerging markets crisis:* Emerging economies experience a severe recession with an abrupt rise in domestic bond spreads and a sharp drop in stock prices. The advanced economies experience a mild recession, but major financial stress. Global interest rates remain low.

*Protracted euro area recession:* This scenario involves a protracted recession in the euro area. Stock prices drop and corporate spreads widen globally. In many countries, including Switzerland, real estate prices fall significantly. In Switzerland, there is also a protracted recession and interest rates return to very low levels for an extended period.

19 Cf. BIS, 'Principles for the effective management and supervision of climate-related financial risks', 25 June 2022, and BIS, 'Frequently asked questions on climate-related financial risks', 8 December 2022.

20 The ISSB was established by the International Financial Reporting Standards Foundation, which sets international accounting standards for companies.

21 In addition to the risks covered by these scenarios, operational risks (including legal and cyber risks) can materialise, in most cases independently of the underlying economic scenario.

22 This scenario definition is similar to the 'severely adverse scenario' in the US Federal Reserve's 2023 stress test.

### 3 Structure of the Swiss banking sector

The banking sector plays an important role in Switzerland's economy, as banks are the main providers of essential financial services. These so-called 'systemically important functions' include, in particular, the domestic deposit and lending business. Moreover, the banking sector accounts for around 5% of value added in Switzerland, and employs around 108,000 people.<sup>1</sup>

The Swiss banking sector can be broken down into three broad categories. The first category covers the globally active Swiss banks – Credit Suisse and UBS – as separate entities in the past and as a combined bank going forward. The second category of banks comprises the domestically focused banks.<sup>2</sup> These are primarily regional, cantonal and Raiffeisen banks. The third category, 'Other banks', includes more specialised domestic banks, as well as branches and subsidiaries of foreign banks. These three bank categories differ in terms of their size, their share of the Swiss market, and their business model.

The SNB can designate individual banks as systemically important for the country; such institutions are subject to

tighter regulatory requirements under the Banking Act.<sup>3</sup> Systemically important banks are those whose failure could cause serious damage to the Swiss economy and Swiss financial system on account of their size, their interconnectedness with the economy and financial system, as well as their services, which cannot be substituted at short notice.<sup>4</sup> Out of the 222 banks operating in Switzerland's banking sector as at end-2022, the SNB has designated five institutions as systemically important: the two globally active banks – Credit Suisse and UBS – and three domestically focused banks – PostFinance, Raiffeisen Group and Zürcher Kantonalbank (ZKB). At the international level, ever since the classification was officially introduced in November 2011, the Financial Stability Board (FSB) had identified Credit Suisse and UBS as global systemically important banks (G-SIBs). Going forward, the acquisition of Credit Suisse by UBS will lead to an increase in the combined bank's global systemic importance according to the FSB's methodology.

Overall, the Swiss banking sector is distinguished by its large aggregate size and its high level of international integration. Total banking sector assets stood at roughly CHF 3,600 billion as at end-2022. This is equivalent to around 470% of Swiss GDP – a high ratio by international standards. To put these figures into perspective, the banking sectors of the UK and the US account for around 380% and 110% of GDP, respectively. Switzerland's largest neighbours rank between these two.

The systemically important banks contribute substantially to the large size of the Swiss banking sector (cf. chart 18). This is particularly true of the globally active banks – Credit Suisse and UBS – considered here as separate

<sup>1</sup> According to SNB data, between 2005 and 2022, domestic employment decreased slightly from approximately 110,000 to approximately 108,000 on a consolidated basis. Data are only available from 2005 onwards.

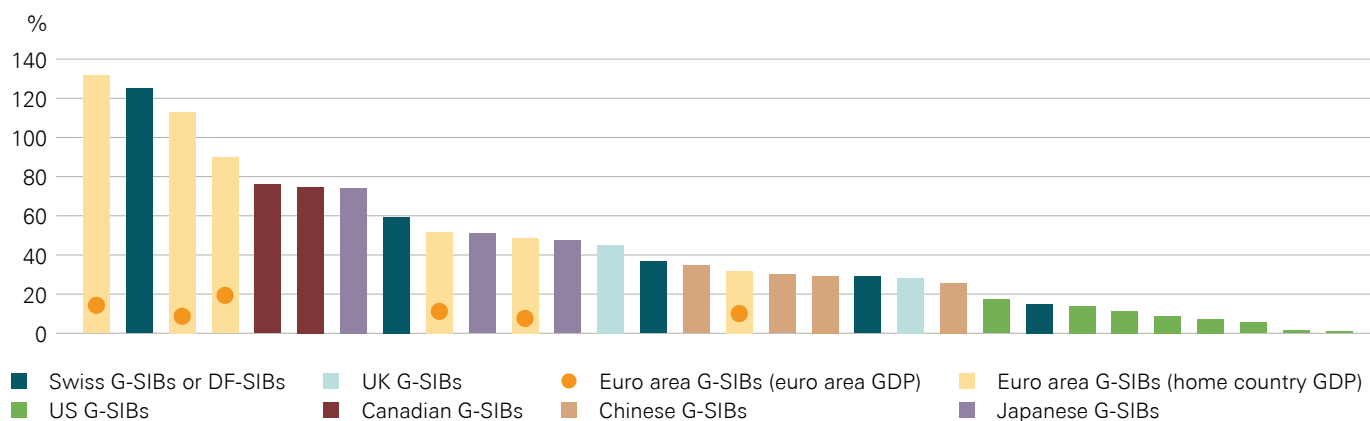
<sup>2</sup> Banks with a share of domestic loans to total assets exceeding 50% or which play a prominent role in the domestic deposit market.

<sup>3</sup> These special requirements include higher capital and liquidity requirements as well as specific requirements for resolvability in a crisis (cf. art. 9 Banking Act).  
<sup>4</sup> Cf. arts. 7 and 8 Banking Act.

#### SIZE OF INDIVIDUAL BANKS RELATIVE TO GDP, BY JURISDICTION<sup>1</sup>

G-SIBs and Swiss DF-SIBs, leverage ratio exposure to GDP

Chart 18



<sup>1</sup> GDP data for 2022 except for euro area where 2021 data were used instead. Bank exposures as at Q4 2022.

Source(s): Bank disclosures, IMF, SNB calculations

entities. Their leverage ratio exposure,<sup>5</sup> as a measure of bank size, is 60% and 125% of Swiss GDP, respectively, as at Q4 2022. Furthermore, the three domestically focused systemically important banks (DF-SIBs) are also large by international comparison. Relative to the Swiss economy, their respective exposures range between 15% and 37% of GDP.

Although the Swiss banking sector is still large, it became substantially smaller after the global financial crisis of 2007–2008. Since then, both globally active banks have scaled back their exposures abroad, which also explains the overall shrinkage of the sector (cf. chart 19). These banks still account for a considerable share of foreign asset holdings, which sets them apart from most other banks headquartered in Switzerland. This large foreign assets share stems from their global business operations, which are conducted either from within Switzerland or through affiliates abroad. As at end-2022, the two globally active banks held an average of around 66% of their total assets vis-à-vis foreign counterparties, while that share only reached 5% for domestically focused banks. In the case of the ‘Other banks’, a little more than half of their assets were held against foreign counterparties, mainly reflecting the international customer base of these specialised banks.

The structure of the banks’ balance sheets in terms of currencies also varies considerably by bank category. For the domestically focused banks, the Swiss franc clearly dominates on both sides of their consolidated balance sheets (cf. chart 20). For the globally active Swiss banks, the Swiss franc plays a much less important role. On the assets side, only 36% of their total assets were denominated

in Swiss francs as at end-2022. For these banks, the US dollar ranks first, making up around 38%, while euro-denominated assets account for less than 9%. The liabilities side of the globally active Swiss banks’ balance sheets broadly presents similar shares. Overall, the balance sheet structure of these banks mirrors the global services they offer their clients. In terms of currency ratios, the ‘Other banks’ category lies somewhere in between these two extremes. Across all bank categories, the diverse currency ratios reflect the different business models.

Given their size, the globally active banks have traditionally dominated the Swiss banking sector’s foreign exposures. The US stands out as the most important debtor country. Foreign claims on counterparties in the US accounted for around 40% of total foreign claims outside Switzerland as at end-2022. The UK is the second largest debtor country, making up about 9%. Ranking far behind in terms of single-country exposures are Germany, France and Luxembourg.

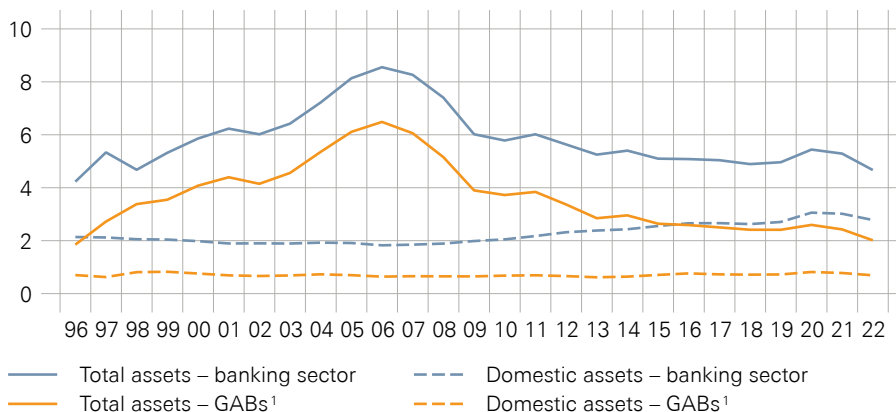
In the Swiss home market, the systemically important banks account for more than half of the traditional deposit and lending business (cf. charts 21 and 22). With the acquisition, the combined UBS/Credit Suisse entity is likely to become the single most important player, with nationwide market coverage, followed by Raiffeisen Group. In terms of aggregate market share, ZKB and PostFinance rank next although their business models differ. PostFinance has a national presence, but operates under restrictions in the lending business. ZKB, like other cantonal banks, is a dominant player in its home canton of Zurich, which stands out relative to other Swiss cantons in terms of its economic size. The other domestically focused banks jointly account for around 45% of the domestic credit market and 37% of the domestic deposit market. By contrast, the combined share of ‘Other banks’ is below 10%, as this category also captures affiliates of foreign banks which are specialised in other types of banking business.

<sup>5</sup> Leverage ratio exposure is the sum of on and off-balance-sheet positions as defined in the Basel III leverage ratio framework. A comparison of euro area banks to euro area GDP (cf. orange dots in chart 18) serves as a useful alternative benchmark since these banks have access to centralised funding and recapitalisation schemes (cf. [www.srb.europa.eu/en/content/srb-banking-union](http://www.srb.europa.eu/en/content/srb-banking-union)).

## SIZE OF SWISS BANKING SECTOR RELATIVE TO GDP

Ratio of consolidated assets to GDP

Chart 19



<sup>1</sup> Globally active banks.

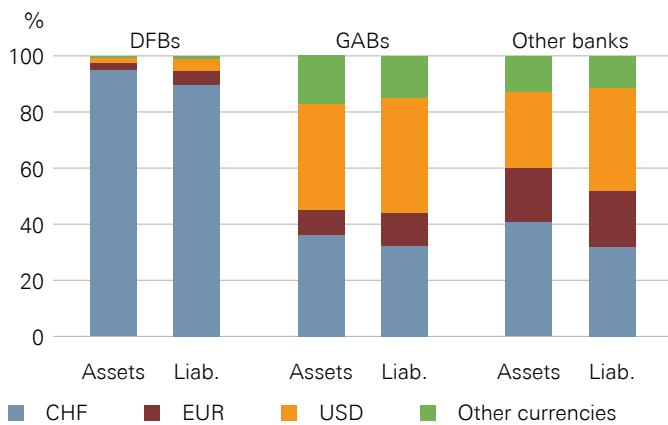
Source(s): SNB

The different business models and geographical exposures are also reflected in the diverse revenue structures of the three Swiss bank categories. Generally speaking, globally active banks are universal banks with a diversified revenue structure. They put special emphasis on international wealth management, but they also have investment banking and domestic retail operations. Hence, the largest share of their revenues comes from fee and commission income, mainly generated by their wealth management divisions (cf. chart 23). By contrast, net interest income is the prevailing source of revenue for domestically focused banks. They concentrate on the domestic deposit and lending business, with a special focus on mortgages. In the ‘Other banks’ category, most of the institutions focus on wealth management. Accordingly, net fee and commissions make up more than 60% of their total income.

The Financial Stability Report concentrates on those banks that are primarily responsible for providing systemically important functions to the Swiss economy. These are the globally active banks and the domestically focused banks. These two categories of banks are discussed in separate chapters. The three DF-SIBs, PostFinance, Raiffeisen Group and ZKB, are analysed jointly with the other domestically focused banks. However, due to their particular importance for financial stability, they are also discussed separately, where appropriate. The Financial Stability Report does not further elaborate on the ‘Other banks’ category, because these banks are less relevant for the domestic deposit and lending business.

### CURRENCY BREAKDOWN OF SWISS BANKS' BALANCE SHEETS

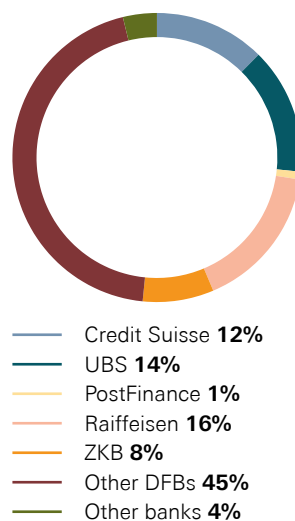
2022 Chart 20



Source(s): SNB

### MARKET SHARE DOMESTIC LOANS

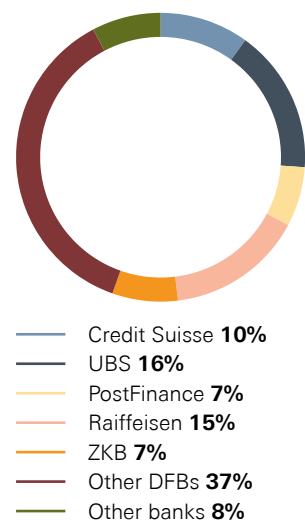
2022 Chart 21



Source(s): SNB

### MARKET SHARE DOMESTIC DEPOSITS

2022 Chart 22

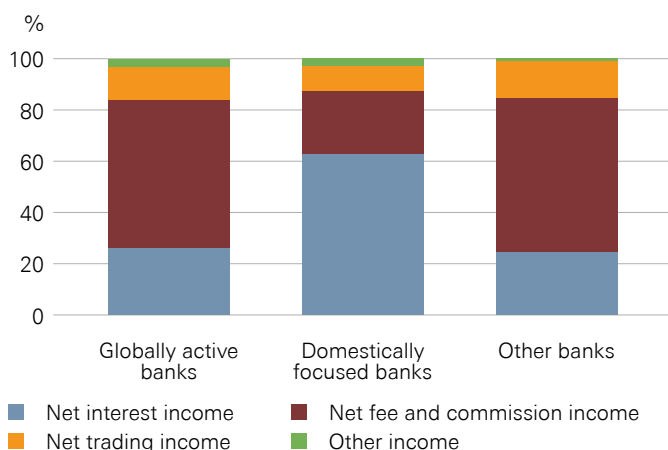


In Q1 2023, shares in the domestic deposit market started to shift when Credit Suisse experienced substantial outflows in its retail business operations.

Source(s): SNB

### REVENUE STRUCTURE

As a percentage of total revenue, 2022 Chart 23



Source(s): SNB



On 19 March 2023, the authorities announced the acquisition of Credit Suisse by UBS. This had been preceded by a crisis at Credit Suisse that had been escalating over a period of months (cf. box ‘Credit Suisse – chronology of events since last Financial Stability Report’).

The cause of the crisis at Credit Suisse was not a macroeconomic shock such as assumed under the SNB’s stress scenarios. Rather, the crisis was the result of repeated incidents at the bank itself, primarily triggered by breaches of legal and supervisory obligations and shortcomings in risk management. Large fines, a number of supervisory enforcement actions and financial losses (as in the case of the default of the US hedge fund Archegos Capital Management (‘Archegos’) in 2021) resulted from these incidents. Credit Suisse reported losses over several quarters. These developments led to an increasingly critical assessment of the bank by its clients, market participants and rating agencies.

At the beginning of October 2022, growing uncertainty surrounding the bank’s outlook and rumours of impending insolvency resulted in considerable outflows of deposits and assets under management. A CHF 4 billion capital increase and a strategic reorientation involving a significant downsizing of the investment banking business and a focus on wealth management, asset management and the Swiss business were announced at the end of October 2022, but were not sufficient to restore confidence on a sustainable basis. This was reflected in further outflows, rating downgrades and a significant deterioration in market-based indicators, such as credit default swap (CDS) premia and the share price, until the end of the year. The bank closed the 2022 financial year with a loss of over CHF 7 billion – a result of both poor operating performance and extraordinary items linked to the bank’s strategic reorientation.

The crisis of confidence in Credit Suisse came to a head in mid-March 2023. Following the failure of Silicon Valley Bank and Signature Bank in the US, the market’s perception of Credit Suisse deteriorated further. Despite the fact that its exposure to these US banks was immaterial, Credit Suisse’s share price fell by more than 30% in the subsequent days, while its CDS premia<sup>1</sup> peaked at more than 1,000 basis points on 15 March. These market events, combined with the delay in the publication of its 2022

Annual Report<sup>2</sup> and the fact that a major shareholder publicly ruled out recapitalising the bank, triggered a massive loss of confidence in Credit Suisse. The bank’s liquidity was under immediate threat, as clients in both wealth management and the Swiss business withdrew deposits at a rapid rate and on a massive scale, and counterparties cut their credit limits, while payment agencies and clearing institutions requested substantial prepositioning of liquidity. Although Credit Suisse met the regulatory capital and liquidity requirements, it became increasingly unlikely that the bank would be able to stabilise its situation through its own efforts.

A package of measures under emergency law was announced on 19 March, centring around the acquisition by UBS and ample liquidity support, and this rapidly stabilised the situation at Credit Suisse. Crucial to this stabilisation were the market’s perception of UBS as a strong and solid bank and the measures implemented by the authorities to support the acquisition.

To ensure that Credit Suisse was able to meet its financial obligations, both during the pressing phase before the public announcement of the package of measures and after, the SNB provided ample liquidity assistance in Swiss francs and foreign currency from 16 March 2023, as applied for by the bank. The initial liquidity provision served to create the necessary time window until a comprehensive solution to the crisis of confidence could be worked out. After the announcement of the acquisition of Credit Suisse by UBS on 19 March, the SNB made ample liquidity available for the execution phase of the acquisition.

This liquidity assistance was granted on three levels. First, Credit Suisse and UBS have unrestricted access to the SNB’s long-established liquidity facilities. They can obtain liquidity against high-quality securities under the liquidity-shortage financing facility (LSFF). Furthermore, the SNB provides emergency liquidity assistance (ELA). ELA loans are covered by Swiss mortgage collateral transferred to the SNB or by pledged securities. Second, Credit Suisse and UBS have access to additional emergency liquidity assistance (ELA+) based on an Emergency Ordinance issued by the Federal Council on 16 March 2023. This new instrument created the crucial time needed for the package of measures to be finalised. The Emergency Ordinance allows for emergency liquidity assistance of up to CHF 100 billion without collateral being delivered. However, the claim is secured by means of preferential rights in bankruptcy proceedings. Third, and likewise based on the Emergency Ordinance, Credit Suisse can access liquidity assistance of up to CHF 100 billion under a public liquidity backstop (PLB). This SNB liquidity assistance also has preferential rights in bankruptcy proceedings and the claim is additionally secured by a federal default guarantee.

1 Premia for credit protection (five-year senior).

2 Cf. Credit Suisse press release of 9 March 2023.

The federal government strengthened confidence in a successful implementation of this acquisition by providing UBS with a loss protection guarantee of up to CHF 9 billion for a specific portfolio of difficult-to-assess Credit Suisse assets.<sup>3</sup> The Swiss Financial Market Supervisory Authority (FINMA) ordered Credit Suisse to write down specific debt instruments (additional Tier 1 or AT1 instruments) in the amount of about CHF 15 billion.<sup>4</sup> This led to a substantial increase in the bank's Common Equity Tier 1 (CET1) capital.

On 12 June, UBS completed the acquisition of Credit Suisse and the combined entity started operating as a consolidated banking group.<sup>5</sup> As previously announced, UBS intends to continue the downsizing of the investment banking business already initiated by Credit Suisse, and to maintain its own strong focus on wealth management. In line with the current 'too big to fail' (TBTF) regulations, and following a transition period starting from end-2025 and ending in 2030 at the latest,<sup>6</sup> the combined bank will have to comply with capital requirements that reflect the change in its systemic importance.

The following subchapters describe the development of the two globally active banks over the past four quarters as independent banks, focusing on Credit Suisse. Where possible, information on the combined bank will be included. Specific reflections and observations on the crisis at Credit Suisse in terms of its capital and resilience, as well as its liquidity, are explained in separate boxes.<sup>7</sup> These reflections are not exhaustive, but should serve as input for a more in-depth discussion in the context of the planned review of the TBTF regulations.

## Credit Suisse – chronology of events since last Financial Stability Report

### Management changes, net operating losses and negative market rumours

On 8 June 2022, in a trading update, Credit Suisse cites challenging market conditions in April and May affecting the performance of its investment bank and cautions that it will likely post a net loss in Q2 2022.

On 27 July, Credit Suisse posts a net loss attributable to shareholders of CHF 1.6 billion for Q2 2022. It announces the appointment of Ulrich Körner as new Group CEO, replacing Thomas Gottstein from 1 August. The bank also says it will conduct a comprehensive strategic review by the next earnings release.

On 1 August, Moody's downgrades Credit Suisse's ratings at group and bank level by 1 notch (to Baa2 and A2, respectively). On 4 August, Fitch also downgrades Credit Suisse's ratings at group and bank level by 1 notch (to BBB and BBB+, respectively). Both agencies cite profitability concerns and the execution risks of the new strategy yet to be announced.

On the first weekend of October, the bank experiences a surge in negative social media and press coverage. The pressure remains high in the first two weeks of October. Until the end of the month, market participants' uncertainty remains elevated, fuelled by speculation about the extent of the restructuring and potential further losses.

### New strategy announcement and capital increase

On 27 October 2022, Credit Suisse reports a net loss attributable to shareholders of CHF 4.0 billion for Q3 2022. The bank announces its new strategy and transformation plan, aiming to create a more integrated business model building on its wealth management and Swiss bank franchises by 2025. The plan entails a radical restructuring of the investment bank, an accelerated cost reduction, and strengthened and reallocated capital. In particular, it involves:

- exits from various investment banking businesses and substantial exposure reductions. This includes the sale of a significant part of the bank's securitised products (SP) business to an investor group led by Apollo Global Management. The international capital markets and advisory business will transition to a newly created entity called CS First Boston. Non-strategic businesses and assets will be moved to the newly created non-core unit (NCU) and run down;
- a significant reduction in costs by 2025;
- a capital increase and a significant reduction in risk-weighted assets (RWA) and exposure. In terms of capital, the bank is targeting a group Common Equity Tier 1 (CET1) ratio of at least 13% throughout the transformation and of more than 13.5% by the end of 2025 (from 12.6% at the time of the announcement).

3 This guarantee will take effect only if UBS actually incurs losses arising from the realisation of these assets and the losses in question exceed CHF 5 billion. Cf. Federal Council press release of 9 June 2023.

4 Cf. FINMA press release of 23 March 2023. FINMA ordered that Credit Suisse's outstanding amount of AT1 capital notes of a nominal value of approximately CHF 16 billion and a fair value of approximately CHF 15 billion be written down to zero.

5 Cf. UBS press release of 12 June 2023.

6 Cf. FINMA press release of 12 June 2023.

7 Cf. boxes 'Reflections on the crisis at Credit Suisse – capital and resilience' and 'Reflections on the crisis at Credit Suisse – liquidity'.

On 1 November, S&P downgrades Credit Suisse's long-term ratings at group and bank level as well as its short-term ratings at bank level by 1 notch (to BBB-, A- and A-2, respectively), whereas Fitch keeps its ratings unchanged. Simultaneously, Moody's downgrades by 1 notch Credit Suisse's long-term debt and deposit ratings at bank level, as well as all the short-term ratings (to A3 and Prime-2, respectively). The ratings at group level are maintained. Both agencies cite the uncertainty around the execution of the plan and lack of clarity about the profitability outlook as reasons for their decision. The bank reports that these downgrades increase its borrowing costs and limit its ability to renew maturing short-term funding and to access short-term funding markets, while also affecting its ability to engage in business transactions and retain its clients.

On 23 November, Credit Suisse holds an extraordinary general meeting to approve two capital increases, consisting of a share placement followed by a rights offering on 9 December. The capital increases will result in gross proceeds for the group of CHF 4.0 billion. Furthermore, the bank issues another profit warning for Q4 2022.

#### **Deposit outflows and execution of the plan weigh on the bank's results**

On 9 February 2023, Credit Suisse reports a net loss attributable to shareholders of CHF 1.4 billion for Q4 2022 and of CHF 7.3 billion for 2022 as a whole. Besides the challenging economic and financial environment, the bank notes that significant outflows of deposits and assets under management and the execution of its strategic actions have affected its results. In particular, it reports:

- group net outflows of assets under management in Q4 2022 amounting to CHF 111 billion, approximately two-thirds of which occurred in October;
- progress on the implementation of its strategy, including progress on the sale of the SP business to Apollo, accelerated deleveraging of its NCU and higher-than-planned cost reductions.

#### **US bank failures and market stress precipitate Credit Suisse's downfall in second half of March**

On 9 March 2023, Credit Suisse announces a delay in the publication of its 2022 annual report, following a request from the US Securities and Exchange Commission concerning issues identified in previous accounting statements (2021 annual report) as well as related controls.

On 15 March, a major shareholder (Saudi National Bank) rules out further capital injections. Credit Suisse's share price slides by more than 30% and its five-year credit default swap (CDS) premia surge to more than 1,000 basis points. On the same day,

in a joint statement, the SNB announces that it will provide liquidity to the globally active banks if necessary, while the Swiss Financial Market Supervisory Authority (FINMA) reaffirms that Credit Suisse remains compliant with all regulatory capital and liquidity requirements.

On 16 March, Credit Suisse confirms its intention to access emergency liquidity support from the SNB for up to CHF 50 billion. The SNB provides CHF 38 billion in liquidity under emergency liquidity assistance (ELA) and CHF 10 billion under the liquidity-shortage financing facility (LSFF). After an initial positive reaction, Credit Suisse's CDS premia and share price weaken again until the end of the week, continuing to reflect high uncertainty about the bank's future.

On 17 March, the SNB provides additional emergency liquidity assistance (ELA+) of CHF 20 billion.

On Sunday, 19 March, Swiss authorities announce the acquisition by UBS and additional liquidity assistance granted by the SNB. The deal restores market confidence and, in the following days, Credit Suisse's CDS premia gradually begin to converge with those of UBS. Rating agencies announce they are considering a potential upgrade of Credit Suisse in the near future.

On 20 March, the SNB provides CHF 30 billion in ELA+ and CHF 70 billion in liquidity assistance under the public liquidity backstop (PLB).

As at 31 May, net borrowings under the PLB are fully repaid by Credit Suisse. Outstanding net borrowings from the SNB amount to CHF 88 billion, consisting of CHF 38 billion under ELA and CHF 50 billion under ELA+.

On 12 June, UBS announces the completion of the acquisition of Credit Suisse and, correspondingly, the de-listing of Credit Suisse shares from SIX Swiss Exchange and the New York Stock Exchange. On the same day, all three rating agencies announce the upgrade and subsequent withdrawal of Credit Suisse Group's ratings, following the transfer of the debt to UBS Group. Rating actions on Credit Suisse's operating companies vary across agencies. Fitch upgrades the long-term ratings of Credit Suisse AG to A+ (from BBB+), i.e. to the level of UBS AG. Meanwhile, S&P upgrades Credit Suisse AG's long-term ratings to A (from A-), i.e. 1 notch below UBS AG. Moody's keeps the ratings of Credit Suisse AG unchanged for the time being.

## 4.1 RESILIENCE

The assessment of the two globally active banks' resilience comprises two elements: profitability and capitalisation. Sustainable profits constitute the first line of defence for absorbing losses in a stress event, and they help to restore capital – the second line of defence – following such an event.

### 4.1.1 PROFITABILITY

#### UBS maintains strong position, Credit Suisse's losses widen

UBS's return on assets<sup>8,9</sup> in the past four quarters (Q2 2022 to Q1 2023) was slightly lower than in the previous reporting period, but remains among the highest it has achieved in the past two decades. Its return on assets remained between that of its European and US peers (cf. chart 24).<sup>10,11</sup> By contrast, Credit Suisse's return on assets collapsed during the same period, as losses in the investment banking and wealth management businesses compounded with extraordinary items linked to the bank's strategic reorientation and with the considerable deposit outflows in October 2022 and March 2023. While Credit Suisse's operating profitability was still negative in Q1 2023, it reported a profit due to a CHF 15 billion

8 Return on assets is defined as pre-tax profit as a percentage of total assets.

9 From a financial stability perspective, profitability metrics that relate profits to the size of the balance sheet are particularly relevant. Return on assets is such a metric that is widely used and available for a long time period. Profits relative to equity (return on equity) is a popular metric among investors but has less relevance from a financial stability point of view.

10 For the international comparison of profitability, the sample is limited to other global systemically important banks (G-SIBs) with a business model that resembles that of the globally active Swiss banks. Specifically, the sample includes, besides Credit Suisse and UBS, the following banks: JP Morgan Chase, Bank of America, Citigroup, Morgan Stanley, Goldman Sachs, Barclays, HSBC, Deutsche Bank, Société Générale and BNP Paribas.

11 The picture is similar when adjustments are made for the differing methods of calculating balance sheet size under the various accounting standards. Banks which calculate according to US GAAP tend to have smaller balance sheets and thus a higher return on assets due to more generous netting options. This applies, for example, to the US banks and to Credit Suisse. The leverage ratio exposure adjusts for these differences and yields a similar picture to the simple balance sheet totals used here.

gain related to the write-down of its AT1 instruments ordered by FINMA.

The two globally active Swiss banks generally derive a major part of their revenues from their wealth management operations, resulting in a large share of non-interest income (in particular fee and commission income) by international comparison. This also implies that they stand to gain less from an environment of rising interest rates compared to their peers. US and European peers benefited from rising interest rates, reporting significantly higher net interest income than in the previous period (cf. chart 25). Meanwhile, UBS's net interest income remained broadly unchanged. Compared to the previous year, higher interest rate margins in its domestic division and in wealth management were partly offset by lower net interest income from the investment bank. Credit Suisse benefited from a higher interest rate margin on deposits, but this effect was broadly offset by lower deposit and lending volumes and higher risk premia on its market funding.

#### Declining investment banking revenues, challenges for wealth management, and stable revenues in the Swiss business

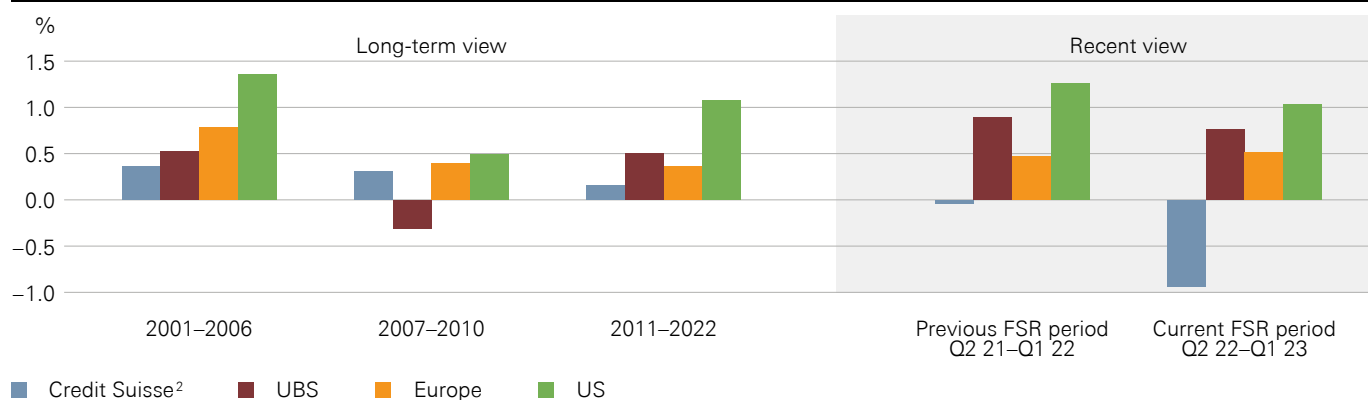
The past four quarters proved challenging for investment banking revenues, particularly for the capital markets businesses. Accordingly, UBS reported a decline in investment banking profits in line with that of its peers. Credit Suisse's investment banking unit recorded a significant drop in revenues, reflecting adverse market conditions, business exits (e.g. the wind-down of its prime brokerage business following the default of Archegos) and the bank's damaged reputation.

The environment for wealth management was mixed. Declining equity and bond markets led to lower valuations of assets under management, contributing to a fall in recurring fees. In addition, clients' heightened risk aversion resulted in significantly lower transaction-based income.

## RETURN ON ASSETS

Reported pre-tax profit as a percentage of assets<sup>1</sup>

Chart 24



1 Average balance sheet size per year.

2 Excluding the CHF 15 billion gain from the write-down of AT1 instruments in Q1 2023.

Source(s): Bloomberg, SNB calculations

UBS was able to attract client assets and benefited from higher net interest income, helping it offset the decline in revenues. By contrast, Credit Suisse’s wealth management revenues dropped sharply in light of the large client asset outflows.

The environment for the Swiss business was favourable. Accordingly, these units contributed positively to the globally active banks’ profitability. The Swiss business at UBS benefited from higher net interest income. At Credit Suisse, the Swiss business remained profitable, albeit less so than in the previous year.

**Cost-cutting efforts help offset declining revenues for UBS**

Both investment banking and wealth management are resource and cost-intensive businesses (i.e. typically exhibiting high cost-to-income ratios) and therefore sensitive to declining revenues. UBS’s cost reductions helped it partly offset its declining revenues between Q2 2022 and Q1 2023. Credit Suisse’s cost-cutting efforts were outweighed by the sharp fall in revenues, accentuated by the large client asset outflows. Furthermore, the bank had to recognise additional costs linked to its restructuring.

**4.1.2 CAPITALISATION**

**CET1 ratios of Credit Suisse significantly improved due to write-down of AT1 capital instruments**

Despite substantial losses (cf. subchapter 4.1.1), Credit Suisse’s CET1 ratios increased significantly from 13.8% to 20.3% (risk-weighted) and from 4.3% to 7.6% (leverage ratio) between Q1 2022 and Q1 2023 (cf. table 1). This improvement is due to two factors. First, risk-weighted assets (RWA) and the leverage ratio exposure have significantly decreased since Q1 2022 (cf. subchapter 4.2). Second, its CET1 capital increased as a result of the capital issuance of CHF 4 billion in Q4 2022, and due to the write-down of AT1 capital instruments in the amount of about CHF 15 billion by Credit Suisse, as ordered by

FINMA.<sup>12</sup> The bank’s look-through<sup>13</sup> going-concern ratios improved to a lesser extent than the CET1 ratios, as the write-down of AT1 capital improved the quality but not the quantity of going-concern capital.<sup>14</sup>

Throughout the period under review, and even at the peak of the crisis of confidence in mid-March 2023, Credit Suisse’s regulatory capital ratios at group level exceeded the look-through capital requirements of the Swiss TBTF regulations. Yet, this capitalisation level proved insufficient to stabilise the situation (cf. box ‘Reflections on the crisis at Credit Suisse – capital and resilience’).

**Capital requirements of combined bank will increase after transition period due to higher systemic importance**

UBS’s capital position remained roughly stable overall and above regulatory requirements. Its risk-weighted CET1 and going-concern ratios declined slightly due to a decrease in AT1 capital and slightly higher RWA. The bank’s CET1 and going-concern leverage ratios, however, improved somewhat as a result of the reduction in leverage ratio exposure (cf. table 1). For the combined bank, UBS

12 Cf. FINMA press release of 23 March 2023. FINMA ordered that Credit Suisse’s outstanding amount of AT1 capital notes of a nominal value of approximately CHF 16 billion and a fair value of approximately CHF 15 billion be written down to zero.

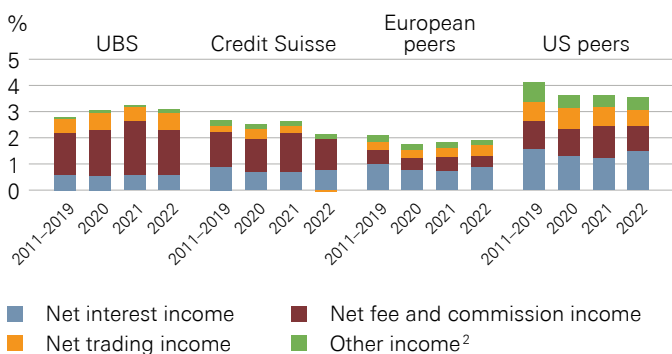
13 The analysis in this report focuses on the look-through perspective. In this perspective, eligible going-concern instruments are defined according to the final capital quality requirements of the Swiss TBTF regulations, i.e. after expiry of all transitional provisions. Going-concern capital in the look-through perspective is made up of CET1 capital and high-trigger contingent capital instruments that qualify as AT1 capital. By contrast, in their disclosures the two globally active banks use a grandfathering perspective. In the grandfathering perspective, eligible going-concern instruments are defined according to the regulations currently in force. These allow the temporary inclusion of instruments that are not eligible as going-concern capital under the final TBTF requirements. Specifically, the banks can use low-trigger contingent capital instruments with AT1 capital quality up to their first call date in order to comply with the going-concern requirements currently applicable. As of March 2023, Credit Suisse no longer has such instruments outstanding due to the write-down ordered by FINMA, while UBS can benefit from this grandfathering perspective until 2025.

14 The write-down of AT1 capital led to a corresponding increase in CET1 capital. The total amount of going-concern capital, however, remained constant.

**REVENUE BY TYPE**

As a percentage of assets<sup>1</sup>

Chart 25



1 Average balance sheet size per year.  
 2 Other income includes, in particular, non-interest income from off-balance-sheet operations, such as trust income or income arising from securitisation transactions.

Source(s): Moody’s, SNB calculations

expects its CET1 capital ratio throughout 2023 to be around 14%.<sup>15</sup>

In an international comparison, Credit Suisse's and UBS's Basel III risk-weighted capital and leverage ratios are above the average for G-SIBs (cf. chart 26). This finding is likely to hold also for the combined bank.

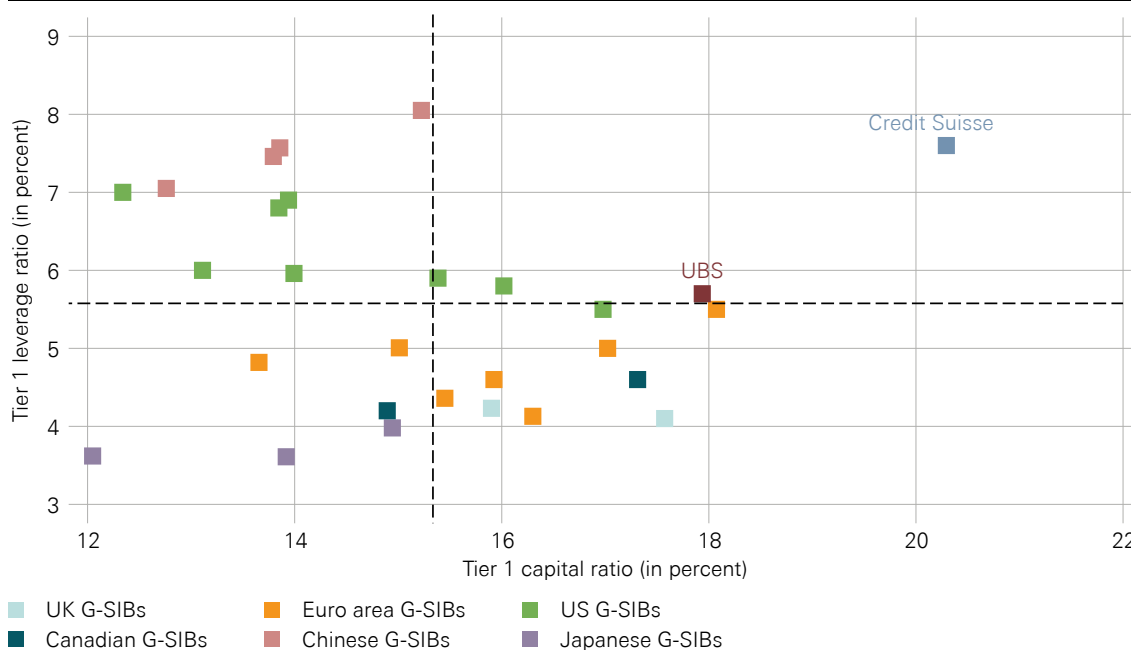
The Swiss TBTF capital requirements are progressive and depend on market share and size. The larger a systemically important bank's market share and/or size measured by its leverage ratio exposure, the higher the bank's capital requirements. Accordingly, UBS's capital requirements will increase to take account of the higher systemic importance of the combined bank. The combined bank has been granted a transition period starting from end-2025 and ending in 2030 at the latest to comply with these requirements.<sup>16</sup>

<sup>15</sup> Cf. UBS press release of 12 June 2023.  
<sup>16</sup> Cf. FINMA press release of 12 June 2023.

## INTERNATIONAL COMPARISON OF TIER 1 CAPITAL<sup>1</sup>

G-SIBs, Q1 2023

Chart 26



<sup>1</sup> The dashed lines depict the (unweighted) averages.

Source(s): Bank disclosures

## GOING-CONCERN CAPITAL RATIOS AND REQUIREMENTS

Table 1

	Credit Suisse			UBS		
	Q1 2022	Q1 2023	Require- ment <sup>1</sup>	Q1 2022	Q1 2023	Require- ment <sup>1</sup>
<b>TBTF CET1 ratios (in percent)</b>						
TBTF CET1 capital ratio	13.8	20.3	9.3	14.3	13.9	10.0
TBTF CET1 leverage ratio	4.3	7.6	3.3	4.2	4.4	3.5
<b>TBTF going-concern ratios (look-through, in percent)<sup>2</sup></b>						
TBTF going-concern capital ratio	17.9	20.3	13.6	18.8	17.6	14.3
TBTF going-concern leverage ratio	5.6	7.6	4.8	5.5	5.6	5.0
<b>TBTF going-concern ratios (with grandfathering, in percent)<sup>3</sup></b>						
TBTF going-concern capital ratio	19.4	20.3	13.6	19.2	17.9	14.3
TBTF going-concern leverage ratio	6.1	7.6	4.8	5.6	5.7	5.0
<b>Basel III ratios (in percent)<sup>4</sup></b>						
Basel III CET1 capital ratio	13.8	20.3	8.0	14.3	13.9	8.0
Basel III Tier 1 capital ratio	19.5	20.3	9.5	19.2	17.9	9.5
Basel III Tier 1 leverage ratio	6.1	7.6	3.5	5.6	5.7	3.5
<b>Capital levels (in CHF billions)</b>						
TBTF CET 1 capital	37.7	49.4	–	41.2	40.8	–
TBTF going-concern capital (look-through)	48.8	49.4	–	54.3	51.7	–
TBTF going-concern capital (with grandfathering)	53.2	49.4	–	55.5	52.8	–
<b>Exposure levels (look-through, in CHF billions)</b>						
TBTF RWA	274	244	–	288	295	–
Of which RWA for credit risk	186	160	–	203	206	–
Of which RWA for market risk	17	11	–	13	14	–
Of which RWA for operational risk	70	73	–	74	75	–
TBTF leverage ratio exposure	878	653	–	991	929	–

1 The requirements do not include a countercyclical buffer requirement. The Swiss requirements do not take into account bank-specific Pillar 2 surcharges. The requirements are as of Q1 2023.

2 The ratios are calculated based on the final requirements – i.e. the requirements after expiry of grandfathering and all other transitional provisions. As such, going-concern capital consists of CET1 capital and high-trigger AT1 capital instruments.

3 The ratios are calculated taking into account the grandfathering clause applicable from January 2020: Low-trigger AT1 capital instruments with a first call date after 1 January 2020 are counted as going-concern capital.

4 The requirement for the Basel III CET1 capital ratio comprises the minimum of 4.5%, the capital conservation buffer of 2.5% and the surcharge for global systemically important banks of 1% for both banks. The requirement for the Basel III Tier 1 capital ratio comprises, in addition, a minimum of 1.5% to be met with capital of at least AT1 capital quality. The leverage ratio requirement comprises the minimum of 3% and the surcharge for global systemically important banks of 0.5% for both banks.

Source(s): Bank disclosures, SNB calculations

## Reflections on the crisis at Credit Suisse – capital and resilience

Credit Suisse was compliant with the Swiss ‘too big to fail’ (TBTF) capital requirements throughout the crisis and it had initiated substantial de-risking measures. Still, clients, market participants and rating agencies were increasingly casting doubt on the bank’s resilience and they finally lost confidence in its capacity to implement its transformation plan. This box discusses three preliminary takeaways regarding capital and resilience.

### Broad perspective in the assessment of resilience

The crisis at Credit Suisse has shown that meeting capital requirements is necessary but not sufficient to ensure market confidence. Regulatory capital ratios reflect a bank’s capital position at a given point in time. The concept of a bank’s resilience takes a broader, forward-looking perspective. A bank’s profitability outlook, its loss potential in case of adverse shocks, and its ability to raise capital and issue debt are also important aspects of a bank’s resilience. In general, these forward-looking elements are more difficult to assess than a bank’s capital ratio at a given point in time. Moreover, they are strongly interrelated or even self-reinforcing, which may lead to rapid changes in the overall assessment of a bank’s resilience.

In October 2022, Credit Suisse unveiled a new strategy and transformation plan that should have eventually returned the bank to profitability by restoring clients’ trust and cutting costs. However, its damaged reputation and the challenging market environment increasingly weighed on the bank’s profitability outlook, further increasing the execution risk of an already complex and protracted restructuring of the investment bank. At the same time, the low market capitalisation and the prevailing high risk premia

limited the bank’s ability to raise capital and to issue debt at competitive terms. All these factors reinforced the negative assessment of clients, market participants and rating agencies, leading to a further erosion of confidence.

Excessive reliance on regulatory capital ratios can thus lead to an underestimation of the need and the urgency of corrective action.

### Loss-absorbing capacity of AT1 capital instruments in a going concern

Under the TBTF regulations – and also according to international standards – regulatory going-concern capital includes Common Equity Tier 1 (CET1) capital as well as additional Tier 1 (AT1) instruments. The latter are similar to perpetual bonds, i.e. they have no maturity, and contain features that should enable a bank to absorb losses in a going concern. First, the bank has full discretion at all times to cancel interest payments.<sup>17</sup> Second, AT1 debt instruments generate CET1 capital through a contractual loss-absorption mechanism – either a write-down mechanism or a conversion to common shares – when a bank’s risk-weighted CET1 capital ratio falls below a quantitative threshold (7% in the case of the Swiss TBTF regulations).<sup>18</sup> The contractual terms include further trigger events for this loss-absorption mechanism relating to government support and non-viability.

In the case of Credit Suisse, AT1 instruments absorbed losses only as the point of non-viability was imminent and state intervention became necessary. At this late

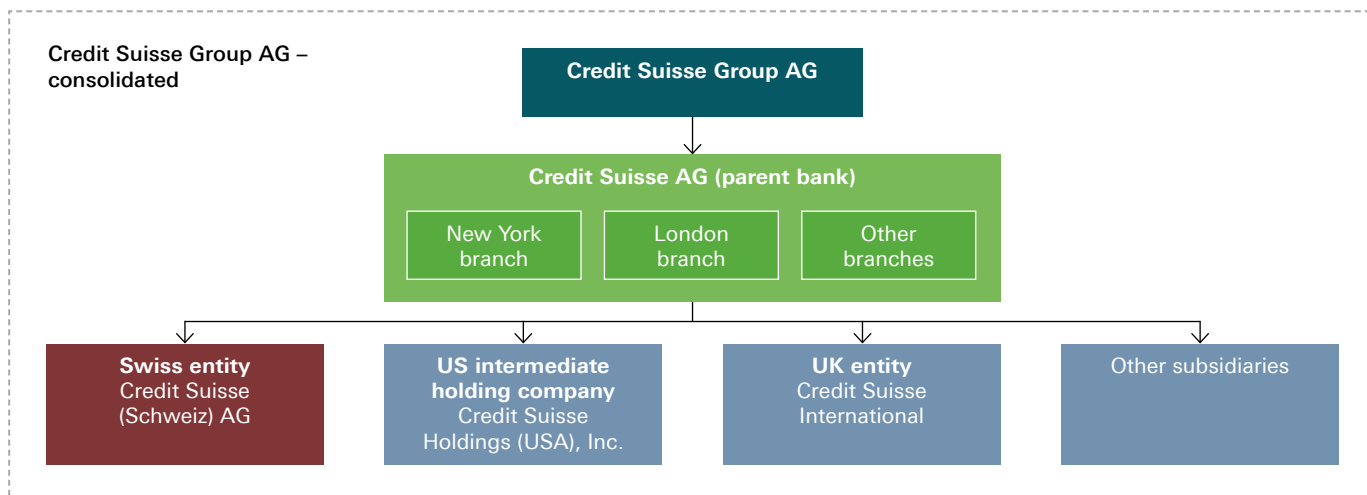
<sup>17</sup> The cancellation of interest payments may impose restrictions on the bank in relation to distributions to shareholders.

<sup>18</sup> The Basel minimum standard stipulates that the instruments must be written down or converted at the latest when the threshold of 5.125% has been reached.

## SIMPLIFIED LEGAL STRUCTURE OF CREDIT SUISSE (PRE-ACQUISITION)

Credit Suisse AG operates as a holding company and as a bank

Chart B1



Source(s): SNB



stage in the crisis, AT1 played an important role in the package of measures. Yet, the AT1 features designed for early loss absorption in a going concern were not effective. First, while Credit Suisse incurred losses over a prolonged period of time and was facing an uncertain profit outlook, it neither cancelled interest payments nor did it deviate from the market practice of redeeming AT1 instruments on their first call date.<sup>19</sup> Cancelling interest payments would have provided immediate financial relief.<sup>20</sup> At the same time, however, the bank would have exposed itself to the risk of negative market reactions – and thus also to the risk that refinancing could have become even more difficult and expensive.<sup>21</sup>

Second, the quantitative trigger for an automatic write-down was below the level of capitalisation that market participants and rating agencies viewed as necessary to ensure resilience and confidence. Despite reporting a 14% CET1 ratio, Credit Suisse was a negative outlier based on market indicators, and its rating outlook was predominantly negative. As market confidence vanished, the authorities had to intervene well above the 7% trigger level. Since government support was granted, the contractual conditions for the write-down of the AT1 instruments were met. Finally, based on the contractual agreements and the Emergency Ordinance, the Swiss Financial Market Supervisory Authority (FINMA) instructed Credit Suisse to write down the AT1 bonds.<sup>22</sup>

### Prudent determination of CET1 capital

The credibility of CET1 capital as a measure of financial strength relies on a prudent valuation of assets. A bank's restructuring options will be limited if difficult-to-assess financial assets cannot be sold without incurring substantial losses or if the bank cannot exit businesses without impairing participations or non-financial assets.

In this regard, banks already have to make adjustments to accounting capital when calculating CET1 under Basel III rules; these adjustments reflect the lessons from the global financial crisis.<sup>23</sup> Still, the observations made in the case of the crisis at Credit Suisse suggest that the current definition of CET1 has some vulnerabilities, especially in the case of a bank's restructuring.

Under the current rules, which are in line with international standards, Credit Suisse was able to include assets in the group's regulatory capital that subsequently lost in value as the bank's profitability turned negative and radical strategic changes became necessary. In particular, the consolidated group had to substantially revise the value of its deferred tax assets – which depleted about half of its then announced recapitalisation plan of CHF 4 billion in October 2022.<sup>24</sup> At the same time, Credit Suisse announced that, due to the new strategy, impairments on software investments were to be expected. These would negatively impact the regulatory capital of the consolidated group over time.<sup>25</sup>

Within the group, the negative capital effects related to the strategy adjustment particularly affected the parent bank, i.e. the legal entity Credit Suisse AG viewed as a stand-alone operating bank (cf. chart B1 for a simplified legal structure of Credit Suisse Group). The capital ratio of the parent bank decreased significantly in Q3 2022, mainly because the new strategy for the investment bank necessitated impairments on foreign participations.<sup>26</sup> Under Swiss capital rules, these participations are subject to a risk-weighting approach and they are not deducted from capital. The deduction approach would have provided better protection for the parent bank's CET1 capital against such impairments.

19 In June 2022, Credit Suisse issued a USD-denominated replacement AT1 instrument, with a coupon of 9.75%.

20 A cancellation of interest payments on all AT1 instruments would have led to an annual expense reduction of approximately CHF 1 billion. In this case, Credit Suisse would have been prohibited from paying dividends to its shareholders.

21 Market stigma is often mentioned as the key factor deterring banks from cancelling interest payments. Cf., for example, European Central Bank, 'ECB response to the European Commission's call for advice on the review of the EU macroprudential framework', March 2022: "Market intelligence and bank-specific anecdotal evidence suggest a widespread perception among market participants that cancelling coupon payments on AT1 instruments is expected only as a last resort when the bank is already likely to fail."

22 Cf. FINMA press release of 23 March 2023.

23 Examples of such adjustments in the calculation of regulatory capital are the deduction of goodwill and intangibles (cf., for example, SNB, Financial Stability Report 2011, box 3).

24 Credit Suisse Group had to book a valuation allowance relating to deferred tax assets of CHF 3.7 billion in Q3 2022, which led to a reduction in CET1 capital of approximately CHF 2.0 billion.

25 Credit Suisse, Q3 2022 results: "The Group estimates restructuring charges, software and real estate impairments in connection with the transformation of CHF 2.9 billion over a period from 4Q22 to 2024." In the EU, the rules for deducting software investments from regulatory capital are in practice often stricter than under Swiss regulations.

26 The parent bank, Credit Suisse AG, is an operating bank with its own capital requirements and several subsidiaries (cf. chart B1). In a stand-alone perspective, these subsidiaries appear as participations on the assets side of Credit Suisse AG's stand-alone balance sheet. The parent bank's CET1 capital ratio fell from 11.4% in Q2 2022 to 9.7% in Q3 2022, mainly due to a CHF 8.6 billion impairment of foreign participations in connection with the announced strategy adjustment at the investment bank.

## 4.2 RISK

The two globally active Swiss banks are exposed to four main categories of risk: credit risk, market risk, operational risk and business risk. Interest rate risks are limited at the globally active Swiss banks and were not the cause of Credit Suisse's problems. Instead, business risk played a particularly important role in the crisis at Credit Suisse. The following sections describe these different risk categories for the globally active banks.

Stress analysis enables a forward-looking assessment of a bank's resilience. As the consolidated information required for such an analysis is currently not available for the combined bank resulting from the acquisition of Credit Suisse by UBS, this year's Financial Stability Report does not present stress test results for the combined bank. In past reports, the global recession scenario was the most relevant scenario for these banks. The SNB will continue to conduct regular stress analyses for the Swiss banking sector, including UBS.

### Credit quality not affected by current environment

Credit risk is the risk of loss due to a client or counterparty failing to make contractually agreed payments. At 68%, credit risk makes up the largest share of the globally active Swiss banks' total RWA (cf. chart 27). The banks' credit exposures arise not only from loans on their balance sheets, but also from off-balance-sheet positions and counterparty exposures from derivatives or securities financing transactions. All these exposure categories together represent 66% of the globally active banks' leverage ratio exposure (cf. chart 28).

Table 2 gives an overview of the credit portfolios of the two globally active banks, broken down by counterparty type. The retail portfolio, consisting chiefly of domestic mortgages and Lombard loans,<sup>27</sup> is the largest in terms of exposure for both banks. In a risk-weighted perspective, credit exposures to corporate clients, arising from global investment banking and Swiss corporate banking, are more material. The higher average risk weight of corporate credit exposures reflects, in particular, their lower degree of collateralisation.

Since Q1 2022, RWA for credit risk have decreased by 14% at Credit Suisse, while remaining roughly constant at UBS (cf. table 1). The challenging macroeconomic environment (cf. subchapter 2.1) had only a small effect on credit quality at the globally active banks. The share of credit-impaired exposures remained low at both banks.<sup>28</sup> Provisions for specific and general default risks over the past four quarters were CHF 209 million at Credit Suisse and USD 49 million at UBS. These amounts are small compared to the provisions the globally active banks made during the coronavirus crisis.<sup>29</sup>

### Market risk stays relevant despite low RWA contribution

Market risk is the risk of loss arising from movements in market prices. For the two globally active Swiss banks, market risk arises in the context of trading assets and derivatives. Although these positions in the trading book

27 Lombard loans are secured loans or credit lines mainly to private clients in the wealth management segment. They are typically collateralised by security portfolios.

28 At Credit Suisse, the ratio of impaired loans to gross loans was 1.3% in Q4 2022. At UBS, the ratio of credit-impaired exposures to gross loans was 0.5% in Q4 2022.

29 In 2020, provisions for specific and general default risks were CHF 1.1 billion at Credit Suisse and USD 0.7 billion at UBS.

### BREAKDOWN OF RWA

Globally active banks as at Q1 2023, weighted average Chart 27

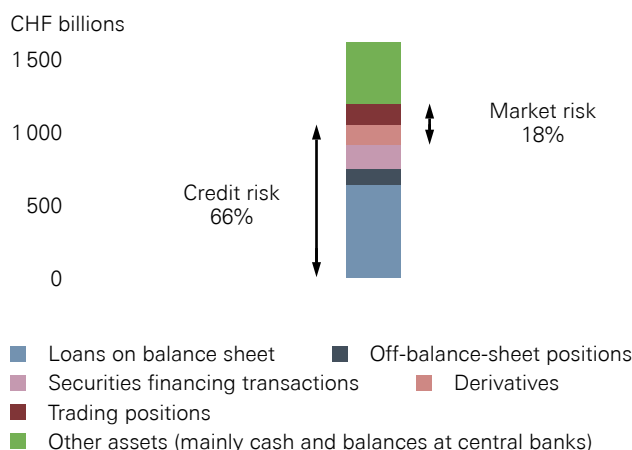


- Credit risk **68%**
- Market risk **5%**
- Operational risk **27%**

Source(s): Bank disclosures, SNB calculations

### BREAKDOWN OF LEVERAGE RATIO EXPOSURE

Globally active banks as at Q1 2023 Chart 28



Source(s): Bank disclosures, SNB calculations

represent 18% of both banks' leverage ratio exposure (cf. chart 28), their contribution to total RWA is rather limited. At 5%, market risk accounts for a much smaller share of RWA than credit risk (cf. chart 27). The underlying reason is that positions in the trading book are often hedged, which reduces their RWA contribution.<sup>30</sup> Since Q1 2022, Credit Suisse has reduced its market risk RWA by 35%, mainly through active exposure reductions at its investment bank. Over the same period, UBS's market risk RWA have slightly increased (cf. table 1).

Despite its small contribution to RWA, market risk is an important risk category for the globally active banks for two reasons. First, the applied hedging strategies in the trading book may not fully protect against very large market shocks and volatility.<sup>31</sup> To better address market risks observed during stress periods, the Basel Committee on Banking Supervision (BCBS) has recalibrated the regulatory market risk framework for the trading book, which will be implemented as part of the final Basel III reform package. Second, not all types of market risk exposures are actually covered by the regulatory market risk framework. An example in this context are equity investments in the banking book, such as Credit Suisse's investment in Allfunds Group. On this single investment, the bank suffered a loss of CHF 0.6 billion in 2022 before it sold the investment in October 2022.

30 Value at risk (VaR), a statistical measure for the short-term loss potential in the trading book and one of the inputs for calculating market risk RWA, is relatively small at both banks due to the hedging of the different trading book positions. At the end of 2022, regulatory VaR (10-day time horizon and 99% confidence level) was CHF 79 million at Credit Suisse, and USD 53 million at UBS (cf. banks' Pillar 3 reports).

31 The mutual hedging of derivatives and trading positions may be impaired by very large market shocks. Previously strongly correlated risk factors may suddenly behave differently in a stress scenario (basis risk). Furthermore, the risk profile of non-linear derivatives may change substantially under such a scenario.

### Operational risk stands out in international comparison

Operational risk is the risk of loss due to inadequate procedures, fraud, failed internal systems, or external events. It also includes legal risk, cyber risk and events such as a power shortage. Operational risk is material at the globally active Swiss banks and accounts for 27% of their total RWA (cf. chart 27). This is high by international comparison<sup>32</sup> and reflects, in particular, the complexity of their international business activities as well as their operational loss history, which at both banks includes several costly litigations.

Operational risk is an important risk category for globally active banks and should continue to be underpinned by adequate capital requirements, reflecting banks' risk profiles. Under the new Basel III standardised approach, capital requirements for operational risks are proportional to an internal loss multiplier, which depends on a bank's loss history over the past ten years. This multiplier is essential for the risk sensitivity of the new approach and incentivises banks to reduce and properly manage operational risks. The SNB supports the implementation of this new standardised approach in Switzerland in its default form, i.e. without exercising the national discretion to set the internal loss multiplier equal to one. Since Q1 2022, RWA for operational risk have remained roughly constant at both banks (cf. table 1).

32 At the end of June 2022, operational risk as a share of G-SIBs' minimum required capital averaged around 13% (cf. BCBS, 'Basel III Monitoring Report', February 2023).

## CREDIT PORTFOLIOS OF THE GLOBALLY ACTIVE BANKS

Q4 2022, in CHF billions

Table 2

	Credit Suisse			UBS		
	Exposure	RWA	Average risk weight	Exposure	RWA	Average risk weight
Sovereign exposures	74	2	3%	219	4	2%
Exposures to banks and institutions	25	6	24%	57	16	29%
Corporate exposures	137	74	54%	166	88	53%
Retail exposures	177	31	17%	368	62	17%
Of which residential mortgages	113	19	16%	162	36	22%
Other exposures <sup>1</sup>	15	17	114%	12	12	95%
<b>Total</b>	<b>429</b>	<b>130</b>	<b>30%</b>	<b>821</b>	<b>183</b>	<b>22%</b>

1 Excludes exposures to central counterparties.

Source(s): Q4 2022 Pillar 3 reports

## Business risks played important role in crisis at Credit Suisse

Business risk refers to the risk of reduced revenues, in particular due to a drop in business volume or client activity. While there is no specific RWA requirement for business risk, it plays an important role for the globally active Swiss banks due to their wealth management and investment banking activities. In 2022, net fee and commission income dropped by 20% year-on-year for the globally active banks in aggregate. The reduction was much more pronounced for Credit Suisse than for UBS.<sup>33</sup> The decrease in the capital markets business of investment banking was particularly strong (–72% in aggregate). In the wealth management business, transaction-based income fell by 21% and recurring fee income by 6% in aggregate.

The materialisation of business risk was the main reason for the loss that Credit Suisse incurred in 2022. This was driven by three factors. First, the adverse market conditions had a particularly strong effect on Credit Suisse, as its revenues in the investment bank and in wealth management are, to a relatively large extent, transaction-based.<sup>34</sup> Second, the idiosyncratic effects of business exits, the reputational issues and the related outflows of deposits and assets under management exacerbated the drop in revenues. In total, the bank’s adjusted net revenues dropped by CHF 7.4 billion in 2022, mainly due to these two factors. Third, the bank’s ability to reduce its costs in the short term was limited. Adjusted operating expenses, including compensation and benefits, remained broadly

unchanged in 2022. The stickiness of variable compensation was related to staff attrition risk and to the fact that 75% of the total variable compensation expense in 2022 was a deferred compensation expense from prior-year awards.

## Limited exposure to interest rate risk

Interest rate risk in the banking book results from a mismatch between the maturities of a bank’s assets and liabilities. Banks typically use short-term liabilities (i.e. deposits) to refinance long-term assets (i.e. loans).

The globally active Swiss banks’ exposure to interest rate risk in the banking book is fairly limited for two reasons. First, given their diversified revenue structure, the share of net interest income to total revenues is relatively small (cf. subchapter 4.1.1). Second, the globally active banks actively manage and limit the interest rate risk arising from the maturity transformation between loans and deposits through the use of derivatives. The globally active banks’ regulatory disclosure of the relevant interest rate risk metrics shows that their exposure is in line with their European peers and lower than that of domestically focused Swiss banks.<sup>35</sup> A detailed discussion of interest rate risk for the domestically focused banks is given in subchapter 5.2.2.

## UBS plans to continue de-risking Credit Suisse’s investment bank

Following the Archegos default in Q1 2021, Credit Suisse initiated a further reduction of its investment bank division.<sup>36</sup> The business reductions included the prime services business, in which the Archegos loss occurred at

33 In the 2022 financial year, the decrease in net fee and commission income was 34% for Credit Suisse. For UBS, the decrease was approximately 12% if calculated based on CHF figures (based on the reported USD figures, it amounted to 15%).

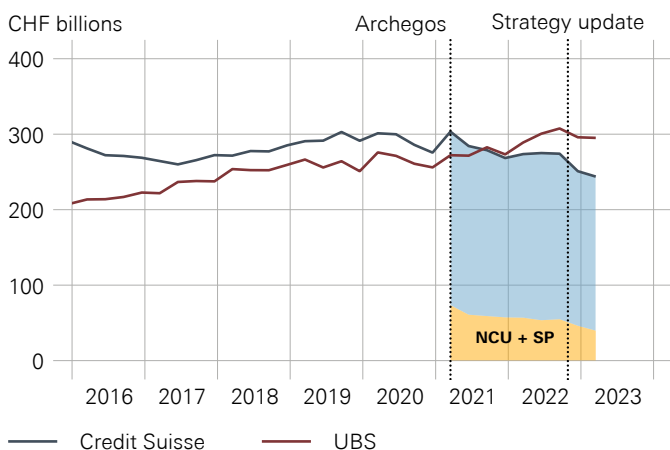
34 In 2021, 58% of Credit Suisse’s non-interest income (total revenues excluding net interest income and other income) in wealth management was transaction and performance-based, compared to only 26% transaction-based non-interest income at UBS. In the investment bank, 36% of the 2021 revenues was from the capital markets business at Credit Suisse, as against 23% at UBS.

35 In the ‘regulatory outlier test’ as at 31 December 2022, the net present value of banking book positions would decline by 5.8% of Tier 1 capital for the globally active banks, in line with 5.5% for their European peers. The worst interest rate scenario in this test is the ‘parallel up’ scenario, in which interest rates increase by 150 basis points for the Swiss franc and by 200 basis points for the euro and the US dollar, according to FINMA rules.

36 In Q4 2015, Credit Suisse already initiated a reduction of its investment bank by creating a strategic resolution unit with CHF 62 billion in RWA and CHF 138 billion in leverage ratio exposure.

## RISK-WEIGHTED ASSETS

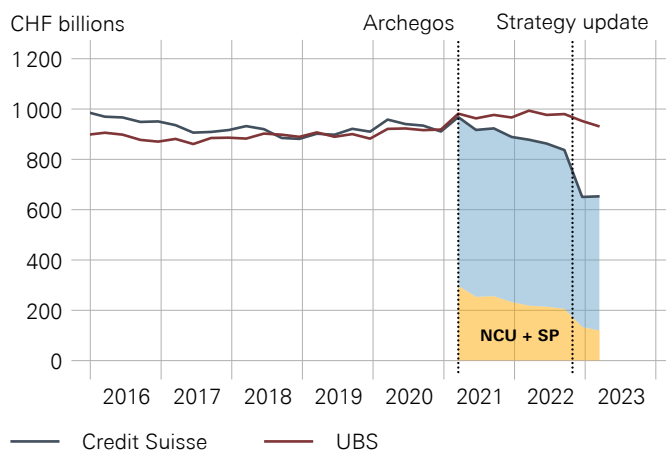
Look-through Chart 29



Source(s): Bank disclosures, SNB calculations

## LEVERAGE RATIO EXPOSURE

Look-through Chart 30



Source(s): Bank disclosures, SNB calculations

the end of March 2021. By Q3 2022, Credit Suisse's RWA had dropped by CHF 29 billion and its leverage ratio exposure by CHF 131 billion, while these exposure measures had increased or remained roughly constant at UBS (cf. charts 29 and 30).

Together with its Q3 2022 results, Credit Suisse announced its plan to further de-risk its investment bank by approximately 40%. The de-risking strategy consisted of a sale of the bank's securitised products (SP) business, and a wind-down of non-strategic business activities, such as the remainder of prime services and the emerging markets lending business, in a non-core unit (NCU). As at Q1 2023, CHF 40 billion in RWA and CHF 120 billion in leverage ratio exposure were remaining within the NCU and the SP business. In the SP business, Credit Suisse achieved a 65% reduction of asset-equivalent exposure between Q3 2022 and Q1 2023, mainly through the sale of

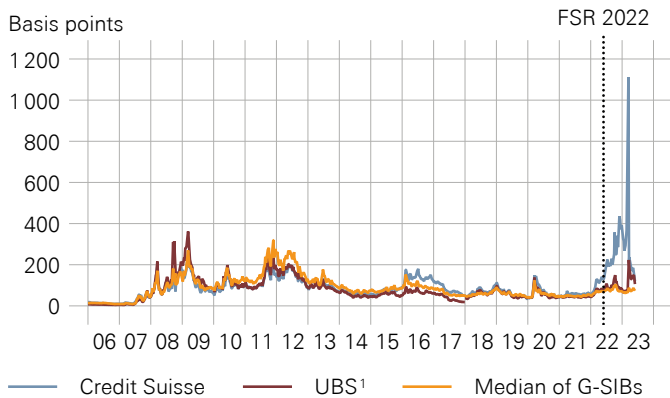
assets to Apollo Global Management and to other third parties. In the NCU, the wind-down of positions is taking more time. In Q3 2022, Credit Suisse targeted an exposure reduction in the NCU of approximately 60% by the end of 2025. Charts 29 and 30 show the development of these exposures since the Archegos default at the end of Q1 2021, as published by the bank in Q1 2023.

The rapid drop in Credit Suisse's leverage ratio exposure in Q4 2022 mainly reflects the reduced stock of liquid assets, which was driven by deposit outflows (cf. box 'Reflections on the crisis at Credit Suisse – liquidity'). In Q1 2023, deposit outflows continued, leading to a further reduction in liquid assets. In March 2023, the stock of liquid assets was replenished through liquidity assistance loans provided by the SNB. Therefore, the leverage ratio exposure of Credit Suisse remained roughly unchanged in Q1 2023 (cf. chart 30).

UBS has announced that it will continue to work out Credit Suisse's legacy positions after legal completion of the acquisition. The bank stated that according to a pro-forma calculation, i.e. excluding an initial estimate of assets and liabilities that UBS defines as non-core, the investment bank RWA will amount to approximately 25% of the combined bank RWA.<sup>37</sup> This fraction is lower than the 29% of RWA that UBS reported for its investment bank in Q1 2023 and the previous strategic cap of one-third. For a specific portfolio of difficult-to-assess Credit Suisse assets, the federal government provided a loss guarantee of a maximum of CHF 9 billion. However, this will take effect only if UBS actually incurs losses arising from the realisation of these assets and the losses in question exceed CHF 5 billion.<sup>38</sup>

### INTERNATIONAL COMPARISON OF CDS PREMIA

Premia for credit protection (five-year senior) Chart 31



1 Up to end-2017, at operating company level (UBS AG); from 2018, at holding company level (UBS Group AG).

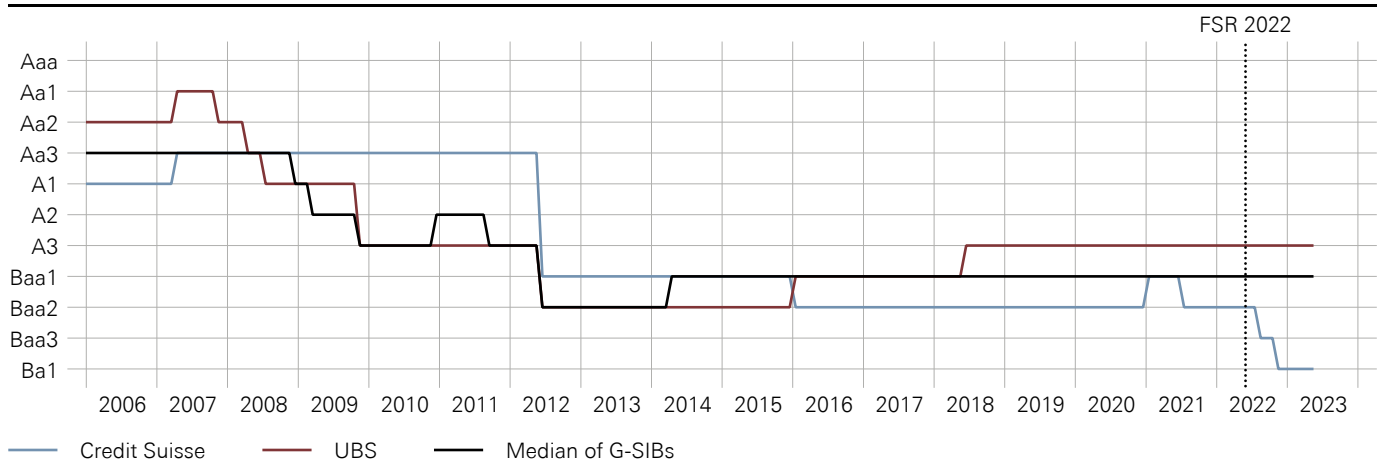
Source(s): Bloomberg, Refinitiv

37 Cf. UBS Q1 2023 financial results presentation, 25 April 2023.

38 Cf. Federal Council press release of 9 June 2023.

### INTERNATIONAL COMPARISON OF STAND-ALONE RATINGS

Moody's, baseline credit assessment Chart 32



Source(s): Bloomberg, Moody's

### 4.3 MARKET ASSESSMENT

#### Market assessment of Credit Suisse deteriorated significantly

While Credit Suisse was compliant with its regulatory capital requirements, market-based indicators were increasingly casting doubt on the bank's resilience. When stress emerged in the US banking sector during the first half of March, the market assessment of Credit Suisse further deteriorated.

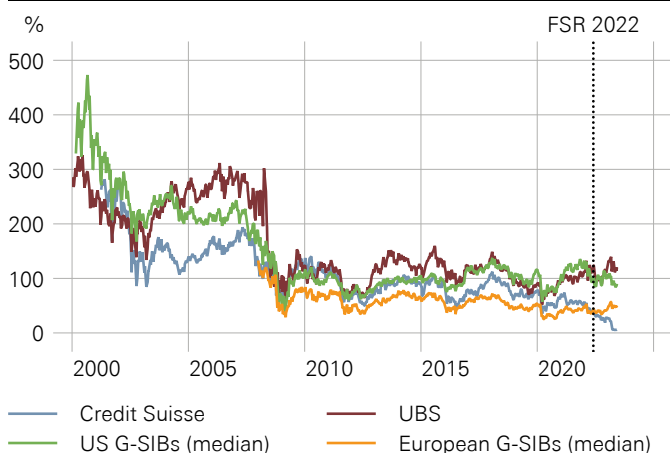
CDS premia reflect the market's assessment of an issuer's creditworthiness. As with bond spreads, the greater the perceived credit risk, the higher the premium.<sup>39</sup> At times, however, the market for single name CDS is shallow and relatively illiquid, which could give rise to misleading signals. Yet, as market commentators and bank clients closely followed the unfolding crisis in early March, the trading volumes of Credit Suisse's five-year CDS rose significantly, with CDS spreads and bond spreads on secondary markets moving in parallel.

In line with those of other G-SIBs, the CDS premia of UBS were largely unchanged throughout 2022 (cf. chart 31), but increased by around 25 basis points in 2023. Meanwhile, Credit Suisse's CDS increased in October and November 2022 (from an already elevated level) and accelerated to unprecedented highs in March 2023. They came down rapidly after the announcement of the acquisition and converged with those of UBS.

Banks' creditworthiness is also reflected in the stand-alone ratings of the three major rating agencies, Moody's, S&P and Fitch. These evaluate the intrinsic financial strength of

#### MARKET CAPITALISATION OVER TOTAL EQUITY

G-SIBs Chart 33



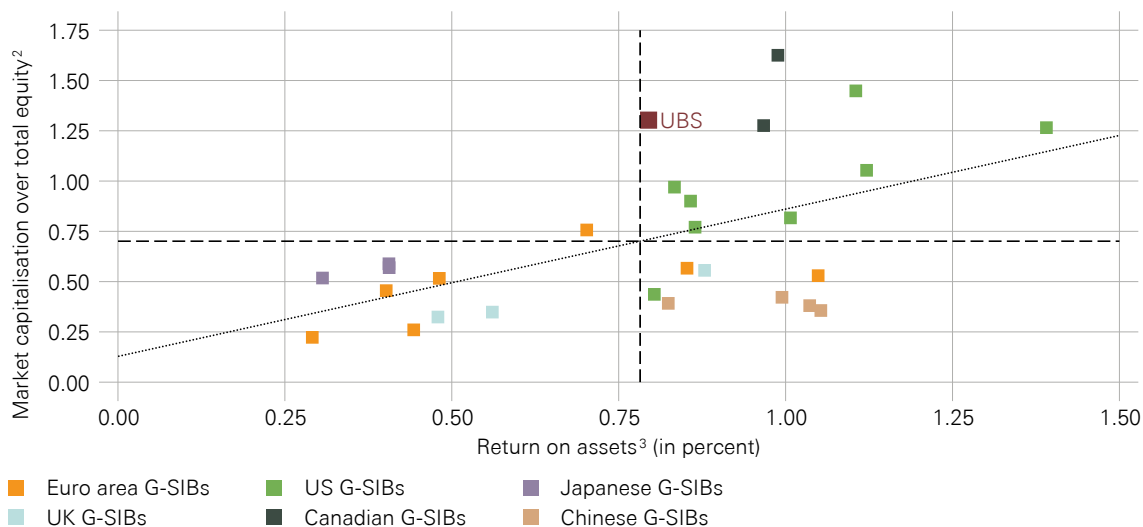
Source(s): Bloomberg

<sup>39</sup> It is important to note, however, that market prices include market expectations of government support in a crisis (TBTF issue). CDS premia thus reflect the market's view of the likelihood that the underlying credit will be repaid. It is irrelevant whether the investment is repaid by the bank or by a third party such as the government.

#### INTERNATIONAL COMPARISON OF MARKET CAPITALISATION OVER TOTAL EQUITY WITH RETURN ON ASSETS<sup>1</sup>

G-SIBs, Q1 2023

Chart 34



<sup>1</sup> The dashed lines show the (unweighted) averages. The dotted line represents the regression of 'market capitalisation over total equity' on 'return on assets'. The correlation between the two series is 0.56. Excluding Credit Suisse, as the bank's market capitalisation is now closely tied to the share price of UBS, given the agreed purchase agreement.

<sup>2</sup> Market capitalisation measured as at Q1 2023; total equity as at Q1 2023.

<sup>3</sup> Return on assets defined as pre-tax profit of last four quarters as a percentage of total assets as at Q1 2023.

Source(s): Bloomberg

the banks.<sup>40</sup> Before the acquisition, the three rating agencies had downgraded Credit Suisse at least once since the last Financial Stability Report. The stand-alone rating of UBS was slightly above the G-SIB median, while that of Credit Suisse was well below (cf. chart 32 for an international comparison based on Moody's stand-alone ratings). Following the completion of the acquisition, all three rating agencies withdrew their ratings for Credit Suisse Group. Credit Suisse AG's bank ratings were upgraded by Fitch (to the level of UBS AG) and by S&P (to 1 notch below the rating of UBS AG), while they were being kept unchanged by Moody's for the time being. The ratings of UBS at both group and bank level were downgraded by 1 notch by Fitch, while S&P and Moody's left them unchanged.

The ratio of market capitalisation over book value of total equity is an indicator for expected future profitability (cf. chart 33). UBS's ratio is well above the average ratio of other G-SIBs and has improved since the last Financial Stability Report. Meanwhile, Credit Suisse's ratio declined further to the bottom of this G-SIB group in the lead-up to the acquisition. Between the announcement of the acquisition and the de-listing of its shares, the market capitalisation of Credit Suisse reflected the agreed conversion rate between Credit Suisse and UBS shares.

The observed differences in stock market valuation between UBS and other G-SIBs primarily reflect differences in expected profitability. Chart 34 plots the metric for stock market valuation (market capitalisation over book value of total equity, y-axis) against a metric for profitability (return on assets, x-axis).<sup>41</sup>

#### 4.4 RESOLUTION

If a globally active Swiss bank gets into financial distress and recovery measures prove unsuccessful, the Swiss TBTF regulations stipulate that an orderly resolution must be possible. FINMA is responsible for the planning and operational implementation of Credit Suisse's and UBS's resolution. To this end, it draws up a resolution plan for both banks. FINMA's primary resolution strategy is to restructure these banks via a 'single point of entry' bail-in. This means that FINMA would intervene at the level of the group holding company and convert bail-in-able creditors' claims into equity, which would help to restore the bank's capital base. Such bail-in-able claims usually consist of specific debt instruments known as 'bail-in bonds'.<sup>42</sup>

40 In addition to stand-alone ratings, the agencies issue long-term credit ratings, which explicitly factor in the possibility of extraordinary government support ('government support uplift') in the event of a crisis. At holding company level, the three major rating agencies removed this government support uplift a few years ago. At the operating company level, S&P and Fitch have also removed the government support uplift, while Moody's continues to assume that the globally active Swiss banks – alongside most other G-SIBs in Europe and the US – benefit from a 'moderate probability of government support' resulting in a 1-notch rating uplift on their deposits and senior unsecured debt.

41 A similar picture emerges if the ratio of market capitalisation to CET1 capital is used as a measure of stock market valuation, and return on leverage ratio exposure is used as a measure of profitability.

42 Cf. FINMA Resolution Report 2020, p. 20.

If FINMA's primary resolution strategy were to fail, the banks' Swiss emergency plans would serve as a fallback for safeguarding systemically important functions in Switzerland.<sup>43</sup> In their plans, the two globally active Swiss banks have to demonstrate how they would maintain systemically important functions for Switzerland independently of the rest of the group if the group was at risk of insolvency. FINMA views the Swiss emergency plans of Credit Suisse and UBS as ready to implement.<sup>44</sup>

The instruments envisaged by the TBTF resolution framework were not applied to address the severe crisis faced by Credit Suisse in Q1 2023. In this specific situation, both a bail-in and the activation of the Swiss emergency plan were deemed less appropriate than the acquisition of Credit Suisse by UBS. According to the Federal Council's dispatch, client confidence in Credit Suisse had been eroded to such an extent that it was uncertain whether the resolution measures would have restored market confidence.<sup>45</sup> Furthermore, in the authorities' view, the resolution of a G-SIB and a bail-in would likely have created massive turmoil in the market environment from March 2023. This could not only have jeopardised a successful resolution of Credit Suisse, but it would have increased the risk of contagion for other banks, thereby endangering financial stability in Switzerland and worldwide.

#### Federal Council implemented public liquidity backstop based on emergency law

As a prerequisite for the success of an orderly resolution, a bank needs an appropriate level of gone-concern loss-absorbing capacity to allow for recapitalisation by means of a bail-in in the event of impending insolvency. Furthermore, a bank needs sufficient liquidity to implement the resolution strategy ('funding in resolution'). Both prerequisites have to be fulfilled at group level as well as at the level of the individual group entities. Regarding gone-concern loss-absorbing capacity, Credit Suisse and UBS meet the current requirements.

Regarding funding in resolution, the amendments to the Liquidity Ordinance entered into force on 1 July 2022. They are intended to ensure that systemically important banks hold sufficient liquidity to cover their needs in times of liquidity stress and even in the event of a resolution.<sup>46</sup> The banks have a transition period of 18 months in which to comply with the new requirements. The revised requirements address some of the weaknesses that materialised during the crisis (cf. box 'Reflections on the crisis at Credit Suisse – liquidity'). For example, they explicitly account for the operational need for liquidity. The Federal Council plans to review the Swiss TBTF

43 The systemically important functions comprise, in particular, domestic deposit and lending business as well as domestic payment transactions.

44 Cf. FINMA Resolution Report 2023.

45 Federal Council, 'Botschaft über den Nachtrag Ia zum Voranschlag 2023' (dispatch on addendum Ia to the 2023 budget) of 29 March 2023, pp. 17–18.

46 Cf. Federal Department of Finance press release of 3 June 2022.

regulations in line with art. 52 of the Banking Act within a year.<sup>47</sup>

To secure the liquidity of Credit Suisse and to ensure the successful implementation of the acquisition by UBS, the Federal Council decided on 19 March 2023 to activate a public liquidity backstop (PLB) on the basis of emergency law and to give the SNB a federal default guarantee for liquidity assistance.<sup>48</sup> The Federal Council had already announced, in March 2022, its intention to introduce a statutory PLB in Switzerland.<sup>49</sup> Such a PLB is intended to provide additional liquidity if the liquid assets of the banks and their collateral for the emergency liquidity assistance by the SNB<sup>50</sup> are not sufficient. According to the key parameters defined by the Federal Council, liquidity assistance for a systemically important bank would be provided by the SNB in the form of a state-guaranteed loan. The PLB would have privileged creditor status in bankruptcy in order to avoid potential losses for the Confederation. On 25 May 2023, the Federal Council initiated the consultation on the revision of the Banking Act to provide a proper legal basis for the PLB activated on the basis of emergency law in March of the same year.<sup>51</sup> The SNB was involved in developing the PLB concept and supports anchoring it in the Banking Act.

47 Cf. Federal Council press release of 17 May 2023.

48 Cf. Federal Council press release of 19 March 2023.

49 Cf. Federal Council press release of 11 March 2022.

50 In its function as lender of last resort, the SNB can provide additional liquidity against sufficient collateral. Cf. SNB, 'Guidelines of the Swiss National Bank on monetary policy instruments' of 25 March 2004 (as at 5 May 2023).

51 Cf. Federal Council press release of 25 May 2023.

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## Reflections on the crisis at Credit Suisse – liquidity

This box contains initial reflections on the crisis at Credit Suisse regarding liquidity levels, deposit outflows, and the respective role of liquidity requirements and liquidity support.

### Buffers required by liquidity regulations

The liquidity buffers for globally active Swiss banks are determined by the liquidity coverage ratio (LCR)<sup>52</sup> and additional liquidity requirements set by the Swiss Financial Market Supervisory Authority (FINMA) and foreign regulators. Amendments to the Liquidity Ordinance entered into force on 1 July 2022.<sup>53</sup> The banks have a transition period of 18 months in which to comply with the new requirements. During a period of stress, banks are expected to use their pool of liquid assets, thereby temporarily falling below the minimum requirement of a 100% LCR.

The systemically important banks are required to submit a recovery plan to FINMA once a year. This plan must show what the bank would do to stabilise its situation and continue operating in the event of a crisis without government intervention. The recovery plan must be approved by FINMA.<sup>54</sup> Moreover, all banks need to establish an emergency concept which contains effective strategies to address liquidity shortages.<sup>55</sup> Finally, in the resolution plan, FINMA sets out how it would restructure or liquidate a systemically important bank if needed.<sup>56</sup> This includes a resolution funding plan setting out the strategy, key actions and measures that would be employed to address liquidity stress in resolution.<sup>57</sup>

### Credit Suisse faced two episodes with considerable liquidity outflows

In early October 2022 and in mid-March 2023, Credit Suisse experienced two episodes with considerable and exceptionally rapid deposit outflows. Several factors explain the scale and pace of the outflows. Before October 2022, the bank was already an outlier in terms of market assessment and there was uncertainty about its new transformation plan. This made the bank vulnerable to rumours and negative news flows. In March 2023, as the failure of two US banks increased stress in the global banking sector, the market perception of Credit Suisse deteriorated further. Against this backdrop, the announcement by a major shareholder that it would not recapitalise the bank was probably the ultimate trigger of a massive

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52 The minimum LCR is designed to ensure that banks hold sufficient unencumbered high-quality liquid assets (HQLA) that can be converted into cash easily and immediately in private markets to meet their liquidity needs over a 30-day time horizon under a stress scenario defined by assumptions concerning inflows and outflows. Cf. BCBS, 'Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools'.

53 Cf. Federal Department of Finance press release of 3 June 2022.

54 Cf. FINMA website, 'Banks' recovery and resolution planning'.

55 Cf. art. 10 Liquidity Ordinance.

56 Cf. FINMA website, 'Banks' recovery and resolution planning'.

57 Cf. FSB, 'Funding Strategy Elements of an Implementable Resolution Plan', 21 June 2018.



loss of confidence. In this context, digitalisation acted as a catalyst – clients have immediate access to new information and they can rapidly transfer funds to other bank accounts.

#### **Liquidity buffers only partially effective**

The liquidity buffers enabled Credit Suisse to cover the considerable outflows in October 2022. In mid-March 2023, Credit Suisse's liquidity levels were insufficient to cover the second episode of considerable and exceptionally rapid outflows, making central bank support necessary.

The liquidity buffers were only partially effective for two main reasons:

First, at a legal entity level, a large part of the liquidity buffers held to fulfil the LCR requirement served to cover operational liquidity needs including additional repositioning requirements imposed by payment agencies and clearing institutions. The LCR does not capture this additional dimension of liquidity risk. The operational liquidity needs are typically higher in a crisis because the distressed bank tries to settle payments early to send a positive signal, whereas counterparties withhold their payments due to the loss of confidence. Potential outflows are also more difficult to predict. Against this backdrop, supervisory and market scrutiny further limited the usability of liquidity buffers.

Second, due to the loss of confidence, Credit Suisse was confronted with deposit outflows, in particular by wealth management clients, which were more severe than assumed under the liquidity regulations.<sup>58</sup> At a legal entity level, the outflows during a ten business day period around the time the acquisition was announced were about as high as those assumed under the LCR for one month.

#### **The SNB provided ample liquidity support, partially based on emergency law**

The SNB provided liquidity assistance to Credit Suisse in March 2023 through four different channels. Besides the existing liquidity-shortage financing facility (LSFF) and emergency liquidity assistance (ELA), two new instruments – additional emergency liquidity assistance (ELA+) and a public liquidity backstop (PLB) – were introduced by the Federal Council under emergency law.

To address the massive loss of confidence in the bank, the SNB and the Federal Council calibrated the potential liquidity assistance in such a way that, together with the bank's liquidity buffers, it could cover virtually all short-term liabilities of the bank. The bank's liquidity buffers and the collateral prepared for central bank facilities<sup>59</sup> were not sufficient to cover the massive liquidity outflows and the higher repositioning requirements imposed by payment agencies and clearing institutions. The combination of ELA and ELA+, the latter secured by means of preferential rights in bankruptcy proceedings, served to create the necessary time window until a comprehensive solution to the crisis of confidence could be worked out. In the SNB's view, one lesson is that banks should be required to prepare a minimum amount of assets that can be pledged at central banks.

Finally, as Credit Suisse's access to the foreign exchange swap market had become limited due to the loss of confidence, the SNB prepared and provided a large part of the liquidity assistance in foreign currency. The SNB can source foreign currencies by accessing foreign exchange markets or through the monetisation of its foreign currency reserves, the network of swap lines among central banks,<sup>60</sup> and the repurchase agreement facility for foreign and international monetary authorities (FIMA Repo Facility) established by the Federal Reserve.<sup>61</sup>

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<sup>58</sup> Under the LCR, the expected outflow rates of private client deposits over a 30-day time horizon amount to 5–20% depending on the type of deposit (cf. annex 2 to art. 16 para. 3 Liquidity Ordinance). In line with FINMA's circular on the liquidity risks at banks, the expected outflow rate amounts to 3% for deposits in foreign entities covered by particularly secure deposit insurance systems (cf. FINMA Circular 2015/2 'Liquidity risks – banks', margin no. 188).

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<sup>59</sup> In order to be eligible as ELA collateral, the bank's assets must be transferable from a legal and operational perspective.

<sup>60</sup> Cf. SNB press release of 19 March 2023.

<sup>61</sup> Cf. Federal Reserve website, 'Foreign and International Monetary Authorities (FIMA) Repo Facility'.

# 5 Domestically focused banks

## 5.1 RESILIENCE

The assessment of the domestically focused Swiss banks' resilience comprises two elements: profitability and capitalisation. Sustainable profits constitute the first line of defence for absorbing losses in a stress event, and they help to restore capital – the second line of defence – following such an event.

### 5.1.1 PROFITABILITY

#### Banks' profitability improves at low levels

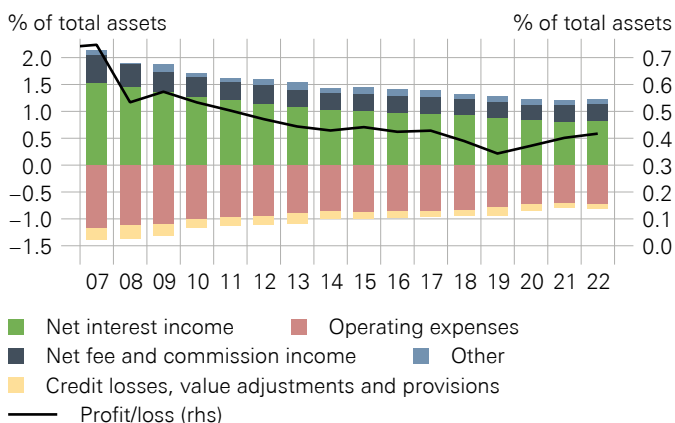
Against the background of rising interest rates, domestically focused banks' profitability – measured as the return on assets<sup>1</sup> – increased slightly in 2022, reaching 0.42% (cf. chart 35). The observed change in return on assets was driven by the positive contributions from net interest income and trading income.<sup>2</sup> Despite this improvement, domestically focused banks' profitability remains low by historical comparison.

Profitability also improved in 2022 for two of the three domestically focused systemically important banks (DF-SIBs). The return on assets at Raiffeisen Group increased year-on-year from 0.38% to 0.42% and at Zürcher Kantonalbank (ZKB) from 0.49% to 0.53%,

1 Return on assets is defined as post-tax profit as a percentage of total assets.  
2 Trading income is included in the 'Other' category in chart 35.

### RETURN ON ASSETS OF DOMESTICALLY FOCUSED BANKS

Chart 35



Source(s): FINMA, SNB

driven by higher net interest income. PostFinance's return on assets remained broadly constant (0.18% in 2021; 0.17% in 2022).

#### Banks' net interest margins gradually improve

Overall, banks' net interest margins on outstanding positions improved in 2022, rising by 3 basis points to 0.90%. This improvement follows a continuous decline in the banks' net interest margins since 2008 (cf. chart 36).<sup>3</sup> The net interest margin increase was driven by gradually higher interest rates on the assets side, coupled with broadly stable funding costs.

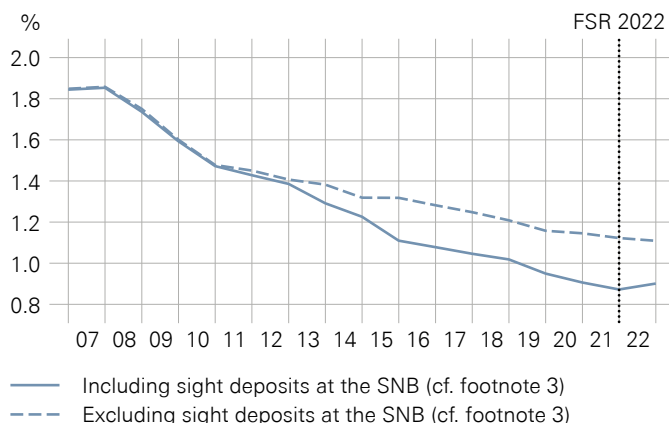
On the assets side, the average interest rate on new mortgage loans increased from 0.93% (end-2021) to 1.52% (end-2022). In 2022, interest rates on new loans exceeded the interest rate on outstanding volumes, pushing up the average interest rate on outstanding mortgage loans from 1.19% (end-2021) to 1.33% (end-2022). This reversed a negative trend that had lasted for almost 15 years. In addition, banks' sight deposits at the SNB, which were subject to negative interest rates until September 2022, became interest-bearing. As a result, the interest earned on these sight deposits accounted for approximately 20% of the year-on-year increase in interest income in 2022, contributing materially to the higher net interest margin.

On the liabilities side, retail deposit interest rates have remained close to zero even as the interest rate curve

3 Net interest margins are approximated as net interest income divided by interest-bearing assets. Interest-bearing assets are approximated as the sum of mortgage claims, claims against customers, financial claims, and banks' sight deposits at the SNB. An alternative definition of interest-bearing assets excludes banks' sight deposits at the SNB. Historically, the latter were not interest-bearing (although this was technically possible). During the period of negative interest rates, the negative interest on excess holdings was negligible. However, with the return to positive interest rates, the interest paid on sight deposits at the SNB makes a significant contribution to net interest income. Given that, in 2022, net interest income grew at 5% year-on-year, the interest-bearing assets definitions explain the subtly different dynamics in chart 36. Interest-bearing assets grew at 1.7% or 6%, depending on whether banks' sight deposits at the SNB are included or not.

### NET INTEREST MARGIN OF DOMESTICALLY FOCUSED BANKS

Chart 36



Source(s): FINMA, SNB

shifted upwards. The volume-weighted interest rate on retail deposits increased to 0.19% at the end of 2022 (from 0.09% at end-2021). The limited pass-through of the interest rate curve shift to retail deposit rates enabled banks to begin restoring their liability margins. These had been significantly compressed – and even negative – during the prolonged period of very low interest rates. This compression was due to the fact that a large share of banks’ retail deposit interest rates remained close to or at zero, even as market interest rates moved into negative territory.

Going forward, assuming that the general level of interest rates remains stable, banks’ net interest margins will continue to improve as maturing loans are renewed at higher interest rates.<sup>4</sup> By contrast, the impact of a further upwards shift in the interest rate curve on these banks’ profitability would likely be negative. First, as liability margins are restored, funding costs should increase faster than interest income, i.e. banks’ interest rate risk from maturity transformation would materialise (cf. subchapter 5.2.2). Second, higher interest rates imply a higher debt burden for borrowers, potentially leading to more defaults on bank loans, i.e. a materialisation of banks’ credit risk (indirect interest rate risk, cf. subchapter 5.2.1).

### 5.1.2 CAPITALISATION

#### Large capital buffers ensure significant loss-absorbing and lending capacity

In 2022, the domestically focused banks’ capitalisation remained broadly stable at a high level (cf. chart 37).<sup>5</sup> While capital ratios decreased slightly, these banks’ total

loss-absorbing capacity grew further, as they retained a significant share of their earnings. As a result, domestically focused banks’ capital buffers are substantial. These buffers are reserves that banks can use to cover losses from their exposures and continue lending without breaching regulatory minimum requirements.<sup>6</sup>

At the end of 2022, buffers above minimum requirements typically represented 7.5–12.5% of the banks’ risk-weighted assets (RWA) (cf. chart 38) and 1–6% of their leverage ratio exposure (cf. chart 39). In aggregate, their capital buffers in excess of the regulatory minima amounted to approximately CHF 56 billion (2021: CHF 55 billion) or 3.8% of their total balance sheet. Around 60% of these buffers (CHF 34 billion) are held voluntarily by the domestically focused banks as surpluses above all regulatory minimum and buffer requirements.<sup>7</sup>

The reactivation of the sectoral countercyclical capital buffer (CCyB) at 2.5% of risk-weighted exposures secured by residential property in Switzerland, which became effective on 30 September 2022, implies an increase in capital requirements of around CHF 6 billion for the domestically focused banks and CHF 7.5 billion at the banking sector level, thereby contributing to the sector’s resilience.<sup>8</sup> The CCyB was reactivated against the background of persisting vulnerabilities on the mortgage and residential real estate markets. As envisaged in the Basel Committee on Banking Supervision’s framework,

4 For more details regarding non-linear effects of interest rate shocks on net interest income, cf. SNB, Financial Stability Report 2016, pp. 26–30.

5 For the aggregate analysis in this section, a phase-in perspective is used for DF-SIBs’ going-concern capital ratios. Furthermore, since January 2020, participants in the definitive small banks regime have been exempted from certain regulatory requirements (cf. [www.finma.ch/en/supervision/banks-and-securities-firms/kat-4-und-5-kleinbankenregime/](http://www.finma.ch/en/supervision/banks-and-securities-firms/kat-4-und-5-kleinbankenregime/)). In this section, these banks are included only in aggregate leverage ratio figures and are excluded from risk-weighted ratios.

6 Cf. Capital Adequacy Ordinance.

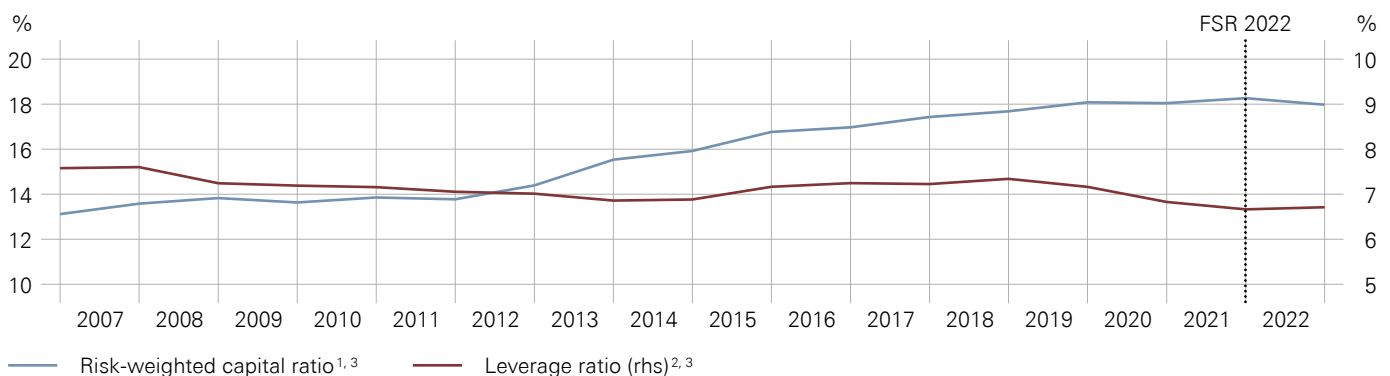
7 These include the capital buffer target levels set according to supervisory category (cf. Capital Adequacy Ordinance), as well as the bank-specific capital buffer requirements applying to systemically important banks. These requirements go beyond the Basel III requirements for all banks, except those pertaining to supervisory category 5, which includes the smallest banks and the banks with the lowest risk exposure. Some banks have Pillar 2 capital surcharges for specific risks; these are not taken into account here.

8 Cf. SNB, ‘Basel III countercyclical capital buffer, Stance of the Basel III countercyclical capital buffer in Switzerland’, 21 February 2023, ([www.snb.ch/en/mmr/reference/ccb\\_20230221\\_basel\\_III\\_countercyclical\\_capital\\_buffer/source/ccb\\_20230221\\_basel\\_III\\_countercyclical\\_capital\\_buffer.en.pdf](http://www.snb.ch/en/mmr/reference/ccb_20230221_basel_III_countercyclical_capital_buffer/source/ccb_20230221_basel_III_countercyclical_capital_buffer.en.pdf)).

## CAPITAL RATIOS OF DOMESTICALLY FOCUSED BANKS

Risk-weighted Tier 1 capital ratio and Tier 1 leverage ratio

Chart 37



1 From 2020, excluding members of small banks regime.

2 Total assets are used in the denominator before the implementation of the leverage ratio exposure measure.

3 A phase-in perspective is used for DF-SIBs’ going-concern capital ratios.

Source(s): FINMA, SNB

## GOING-CONCERN CAPITAL RATIOS AND REQUIREMENTS

Look-through and phase-in

Table 3

	PostFinance			Raiffeisen Group			ZKB		
	2021	2022	Requirement 2022 <sup>3</sup>	2021	2022	Requirement 2022 <sup>3</sup>	2021	2022	Requirement 2022 <sup>3</sup>
<b>TBTF ratios (look-through, in percent)<sup>1</sup></b>									
TBTF going-concern capital ratio	17.8	17.3	13.0	19.1	18.8	14.7	17.5	17.1	13.8
TBTF going-concern leverage ratio	4.5	4.5	4.5	6.0	6.2	4.6	5.9	5.8	4.5
<b>TBTF ratios (phase-in, in percent)<sup>2</sup></b>									
TBTF going-concern capital ratio	18.7	19.1	13.0	21.7	18.8	14.7	18.5	18.2	13.8
TBTF going-concern leverage ratio	4.7	5.0	4.5	6.8	6.2	4.6	6.2	6.2	4.5
<b>Levels (in CHF billions)</b>									
Tier 1 capital TBTF (look-through)	5.5	5.2	–	17.4	17.5	–	12.5	13.0	–
Tier 1 capital TBTF (phase-in)	5.8	5.7	–	19.8	17.5	–	13.3	13.9	–
TBTF RWA	31.0	29.9	–	91.2	92.9	–	71.6	76.1	–
TBTF leverage ratio exposure	122.8	114.6	–	289.4	282.8	–	212.4	223.1	–

1 The ratios are calculated based on the final requirements, i.e. no transitional provisions are taken into account.

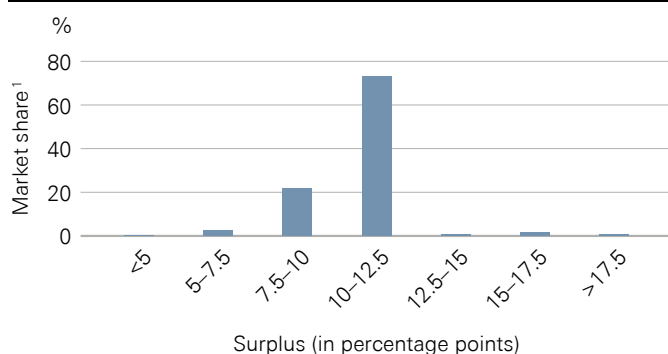
2 The ratios and levels are calculated based on the phase-in requirements as at end-2021 (for 2021 figures) and as at end-2022 (for 2022 figures).

3 Including the Swiss sectoral countercyclical capital buffer (CCyB). Excluding bank-specific Pillar 2 surcharges for specific risks.

Source(s): DF-SIBs' regulatory disclosures

### RISK-WEIGHTED SURPLUS CAPITAL OF DOMESTICALLY FOCUSED BANKS

Capital surplus with respect to 8% minimum requirement for risk-weighted total capital ratios, as at end-2022 Chart 38

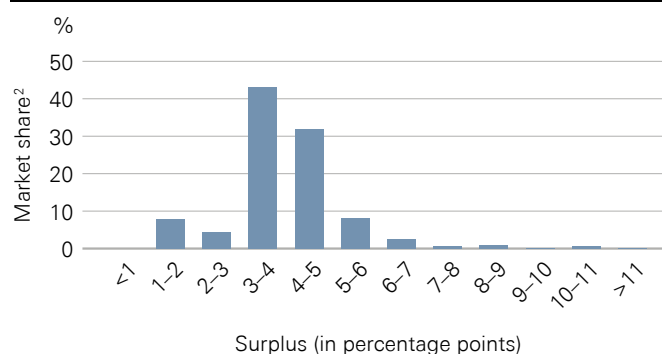


1 Share of domestically focused banks' total Basel III leverage ratio exposure. Excluding members of small banks regime.

Source(s): FINMA, SNB

### LEVERAGE RATIO SURPLUS CAPITAL OF DOMESTICALLY FOCUSED BANKS

Capital surplus with respect to 3% minimum requirement for leverage ratios, <sup>1</sup> as at end-2022 Chart 39



1 Total Basel III leverage ratio exposure includes central bank reserves.

2 Share of domestically focused banks' total Basel III leverage ratio exposure.

Source(s): FINMA, SNB

the CCyB would be made available in the event of a materialisation of risks on the mortgage and real estate markets to absorb losses and sustain lending.

### Heterogeneous capital situation for DF-SIBs

The capital situation of the three DF-SIBs did not evolve significantly in 2022 and remains heterogeneous.<sup>9</sup>

At Raiffeisen Group and ZKB, capital ratios remain significantly above regulatory requirements.<sup>10</sup> At PostFinance, risk-weighted capital ratios are significantly above regulatory requirements, while its leverage ratio is lower than at Raiffeisen Group and ZKB, remaining close to requirements (cf. table 3).

## 5.2 RISK

Domestically focused banks are mainly exposed to domestic credit risk, interest rate risk, operational risk and business risk. This subchapter discusses credit risk and interest rate risk in detail, and operational risk in qualitative terms. Furthermore, stress scenario analysis provides a complementary and broader assessment of these banks' risks, including business risk.

### 5.2.1 CREDIT RISK

Credit risk is the risk of loss due to a client or counterparty failing to make contractually agreed payments.

#### Large exposure to domestic real estate market

At the end of 2022, domestic credit accounted, on average, for around two-thirds of the aggregate balance sheet of the domestically focused banks. By sector, credit to households made up two-thirds of total credit, and

corporate loans to the real sector around one-quarter (cf. table 4).

Due to the composition of their balance sheets, domestically focused banks are particularly exposed to developments affecting the Swiss real estate market. First, around 90% of the credit volume is mortgage loans secured by domestic real estate. Second, around 15% of the credit volume is extended to real estate companies,<sup>11</sup> i.e. firms whose purpose is to build up, manage and operate property portfolios. Both these companies and the collateral securing their loans are particularly vulnerable to a price correction on the domestic real estate market.

#### Credit losses remain low by historical comparison

Throughout 2022 and to date, credit losses for domestically focused banks have remained low by historical comparison. In particular, concerns regarding credit quality deteriorating as a consequence of the pandemic have not materialised. Backward-looking indicators such as the level of specific provisions or the share of non-performing loans, as well as more forward-looking indicators such as the level of impaired claims, have remained stable at low levels. Meanwhile, corporate bankruptcies (both in absolute terms as well as relative to the number of companies), previously at very low levels thanks to pandemic support measures, have been increasing since the end of 2021. They remain below pre-pandemic levels, however.

Looking ahead, a further strong increase in interest rates, coupled with a deterioration in economic activity and declining real estate prices, constitutes the highest risk to the quality of domestically focused banks' credit portfolios (cf. interest rate shock scenario in subchapter 5.2.4).

<sup>9</sup> DF-SIBs are subject to the additional going-concern and gone-concern requirements defined in the Swiss 'too big to fail' (TBTF) regulations.

<sup>10</sup> For Raiffeisen Group, the phase-in risk-weighted capital ratio decreased due to a reclassification of excess Common Equity Tier 1 (CET1) capital to fulfil gone-concern requirements applicable from 2026 (including emergency plan requirements).

<sup>11</sup> As proxied by the real estate activities sector.

## DOMESTIC BANK CREDIT BY TYPE OF BORROWER AND LOAN

Domestically focused banks, figures at end-2022<sup>1</sup>

Table 4

	Households	Non-financial corporations	Financial corporations	Public corporations	All sectors
<b>Domestic bank credit (in CHF billions)</b>	<b>610</b>	<b>255</b>	<b>43</b>	<b>23</b>	<b>931</b>
<b>Domestic bank credit (in percent)</b>	<b>65.5</b>	<b>27.4</b>	<b>4.6</b>	<b>2.4</b>	<b>100.0</b>
Of which mortgages	63.8	22.9	2.6	0.2	89.5
Of which other loans: secured	0.8	1.8	0.9	0.2	3.7
Of which other loans: unsecured	0.8	2.8	1.1	2.0	6.8

<sup>1</sup> Reporting entity: domestic bank offices; positions are vis-à-vis domestic non-banks (all currencies).

Source(s): SNB

## Mortgage growth broadly unchanged despite rise in interest rates

Although mortgage rates started to rise in 2022, mortgage growth remained broadly unchanged at a rate of 3.5% at end-2022 (3.3% at end-2021). Mortgage growth at domestically focused banks was significantly stronger than at globally active banks, continuing a trend observed since 2007. It accelerated from 4.2% (end-2021) to 4.9% (end-2022), while mortgage growth at globally active banks declined from 0.8% to -0.1% during the same period.<sup>12</sup>

12 As at Q1 2023, mortgage growth was 3.3% in the banking sector, 4.9% at domestically focused banks, and -0.9% at globally active banks.

## LTI ratios for new mortgage loans increase ...

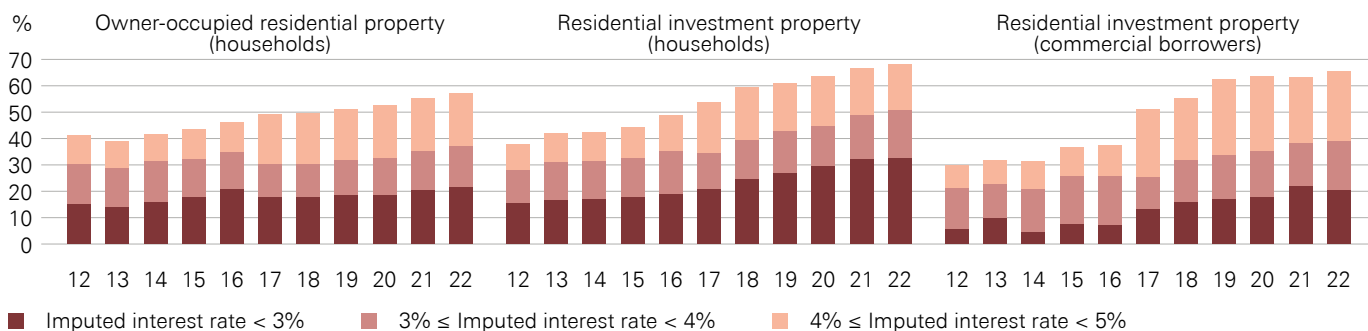
Affordability risks as measured by the loan-to-income (LTI)<sup>13</sup> ratio of new mortgage loans<sup>14</sup> increased further in 2022, continuing a trend observed in recent years. An increase in the share of new mortgage loans with LTI ratios exceeding specific thresholds was apparent in all residential segments and at most thresholds considered

13 The LTI is the ratio between the credit limit approved by the bank (loan) and the income. For the owner-occupied residential property segment, a standardised definition of income is used, which consists of the borrower's net employment or pension income. Other elements that have a positive impact on affordability (e.g. bonuses, investment income and financial wealth), as well as those with a negative impact (e.g. leasing or interest payments on other bank loans), are not taken into consideration. For the residential investment property segment, income consists of net rents from the property.

14 The SNB's survey on new mortgages – with a cumulative share of the domestic mortgage market of almost 90% – covers the 28 largest banks (including the two globally active banks). New mortgage loans comprise both newly granted loans for the purchase or construction of real estate and refinancing of an existing mortgage from another lender. The volumes refer to the total of new credit limits extended during 2022.

## LOAN-TO-INCOME OF NEW MORTGAGE LOANS<sup>1</sup>

Proportion where imputed costs exceed rents (inv. prop.) or one-third of income (owner-occ.) at an imputed interest rate of up to 5%<sup>2</sup> Chart 40



1 From 2017 on, data from the SNB's revised survey on new mortgages are shown.

2 The dark red shaded area shows the proportion where imputed costs exceed rents or one-third of income at an imputed interest rate of up to 3%. The red shaded area shows the additional proportion for an imputed interest rate of between 3% and 4%. The pale red shaded area shows the additional proportion for an imputed interest rate of between 4% and 5%. Besides the imputed interest rate (5%, 4%, 3%), the imputed costs comprise maintenance and amortisation costs (1% each).

In the residential investment segments, the thresholds correspond to LTI ratios over 20 (dark red), between 16.7 and 20 (red), and between 14.3 and 16.7 (pale red).

Source(s): SNB

## REPRICING MATURITY OF NEW MORTGAGE LOANS

Proportion with a short average repricing maturity<sup>1</sup>

Chart 41



1 The volume-weighted average repricing maturity of all tranches is calculated per mortgage loan.

Source(s): SNB

(cf. chart 40). Depending on the segment, between 20% and 33% of newly granted mortgages had LTIs that exceeded the critical threshold at an imputed interest rate of up to 3%. This share of mortgages most vulnerable to rising interest rates has gradually increased in recent years. For instance, in the residential investment property segment held by commercial borrowers, the share of loans exceeding this critical threshold grew from 13% in 2017 to 20% in 2022 (dark red shaded area in chart 40). This critical threshold is equivalent to an LTI of over 20.<sup>15</sup> A borrower with an LTI of 20 has to put an additional 20% of rental income aside for every percentage point increase in interest rates in order to service loan obligations.

These figures, however, do not mean that loan defaults of the same magnitude will actually occur at higher interest rates. The calculation applied here is conservative because it considers certain income streams only, and does not take the borrower's general financial situation into account. In particular, for residential investment property held by households, only rental income from the corresponding property is included, but not labour income, as no data on the latter are available. Tax data for households in the canton of Berne, while confirming that affordability risks have risen, suggest that households' financial resilience is higher and has deteriorated less than LTI figures suggest (cf. SNB Financial Stability Report 2022, pp. 35–36). No comparable data are available for commercial borrowers' financial resilience, though.

### ... while repricing maturity falls significantly

In 2022, the proportion of new mortgages with a short repricing maturity<sup>16</sup> increased strongly. This mainly reflects the fact that mortgages linked to SARON (Swiss Average Rate Overnight) became comparatively more attractive. While rates for fixed-rate mortgages started to increase from the beginning of 2022, rates on SARON mortgages did not change in the first three quarters. It was only after SARON turned positive at the end of September that banks started to increase SARON-linked mortgage rates. By end-2022, the rise in SARON-linked mortgage rates amounted to 60 basis points, while the annual increase for five or ten-year fixed-rate mortgages amounted to 180 basis points.

As a consequence, the proportion of loans with a short repricing maturity reached a high in all segments (cf. chart 41). In the segment of residential investment property held by commercial borrowers, the share of loans with an average repricing maturity of less than six months increased from 44% in 2021 to 60% in 2022.<sup>17</sup> In the segment of residential investment property held by households and in the owner-occupied residential segment, the corresponding shares increased from 26% to 42% and from 16% to 29%, respectively.

Moreover, borrowers with a higher LTI ratio also demanded mortgage products with a short repricing maturity. In particular, in both residential investment property segments, 15% of new loans were characterised by both a short repricing maturity (less than six months) and a high LTI (above 20). In the absence of financial buffers, such borrowers are particularly vulnerable to rising interest rates.

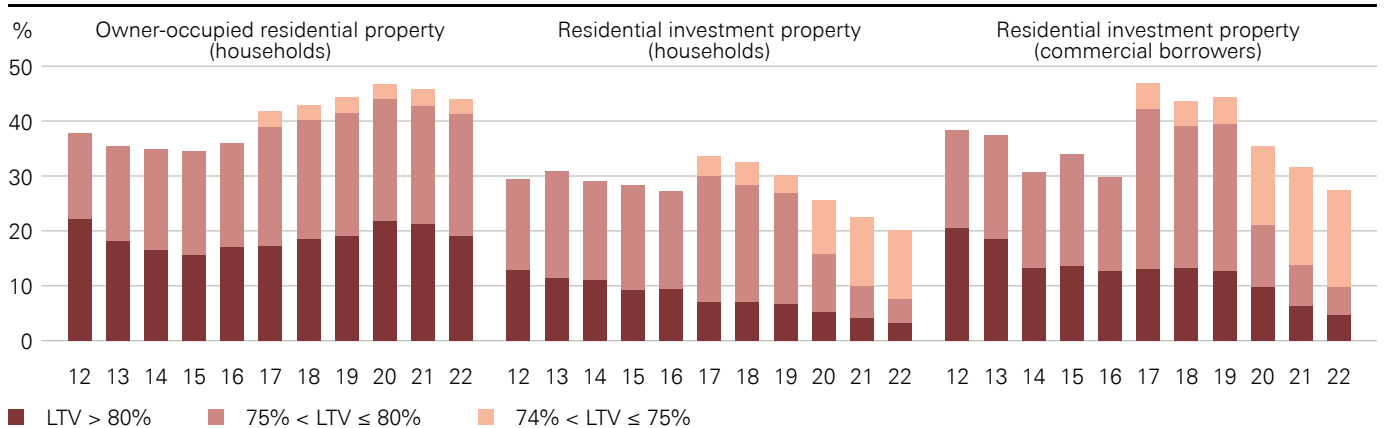
15 In terms of imputed interest rates, an LTI above 20 means that debt service costs are no longer covered by net rents at an interest rate of 3%, assuming that maintenance and amortisation costs are equivalent to 1% of the mortgage limit amount each. The imputed costs of 5% of the credit limit must be covered by 100% of the net rents, or  $100/5 = 20$ .

16 Repricing maturity refers to the time period before the interest rate on an interest-bearing asset or liability position is reset.  
17 While before 2020 these proportions mainly consist of mortgages linked to Libor (London Interbank Offered Rate), they include increasingly more SARON-linked mortgages thereafter. The interest rate maturity of SARON is overnight, but in practice SARON-linked mortgages are repriced every three months.

## LOAN-TO-VALUE OF NEW MORTGAGE LOANS

Proportion of new loans with LTV over 74%, 75% and 80%<sup>1</sup>

Chart 42



1 Measurement of the 74–75% share has only been possible since 2017 (start of the SNB's revised survey on new mortgages).

Source(s): SNB

### LTV ratios of new mortgage loans decline

In 2022, the share of new mortgage loans with high loan-to-value (LTV)<sup>18</sup> ratios continued to decline in all residential segments. In the owner-occupied segment, the share of new mortgage loans with an LTV of more than 75% fell by 2 percentage points to 41% (cf. chart 42). In both residential investment property segments, it also decreased at significantly lower levels, reaching 7% (households) and 10% (commercial borrowers). The reason for these lower shares is the revised self-regulation of the Swiss Bankers Association, which became effective in 2020. For the investment property segment, it stipulates a minimum down payment of 25% of the lending value (previously 10%).

### 5.2.2 INTEREST RATE RISK

Interest rate risk results from a mismatch between the repricing maturities of a bank's assets and liabilities. Banks typically use short-term liabilities (i.e. deposits with potentially short, but contractually undefined, repricing maturities) to refinance long-term assets (i.e. loans with relatively long, but contractually defined, repricing maturities). The result of such maturity transformation, which is a key economic function of banking, is that interest rates on assets are locked in for longer than interest rates on liabilities. This exposes banks to upward shocks in interest rates.

The domestically focused banks' balance sheets feature predominantly hold-to-maturity asset and liability positions. As a result, effects of interest rate changes on banks will materialise gradually through the effect on banks' net interest income. The SNB's stress scenario analysis (cf. subchapter 5.2.4) captures this earnings approach.

18 The LTV reported here is the ratio between the credit limit and the market value of the pledged property. At most banks, the market value differs only slightly from banks' internal valuations of the pledged property.

By contrast, the net present value approach described in this section focuses on evaluating a mark-to-market valuation of banks' assets and liabilities.<sup>19</sup> The net present value metric measures the effect of interest rate changes on the discounted value of future cash flows associated with banks' assets and liabilities. As such, this metric complements the earnings approach.

### Domestically focused banks' exposure to sudden and large upward interest rate shocks is substantial

Banks' exposure to interest rate risk from maturity transformation is substantial. The domestically focused banks' net present value would decline, on average, by 10% (cf. chart 43, upper point cloud) to 17% (lower point cloud) of their Tier 1 capital in response to an interest rate increase of 200 basis points, depending on the assumptions made regarding the interest rate sensitivity of sight and savings deposits.

The exposure to interest rate risk varies significantly across banks, reflecting differences in the composition of their assets and liabilities as well as in hedging behaviour. As can be seen in chart 43, assuming that the transmission to sight deposits rates unfolds gradually over a ten-month period, the mark-to-market impact of a 200 basis point shock would typically amount to between 10% and 20% of banks' Tier 1 capital (cf. lower point cloud in chart 43). For some banks, however, the impact would be significantly higher, reaching up to 50%. This may signal unduly high exposure to interest rate risk.<sup>20</sup>

19 The net present value approach is also referred to as the economic value of equity approach. Interest rate risk hedging is accounted for in the net present value approach.

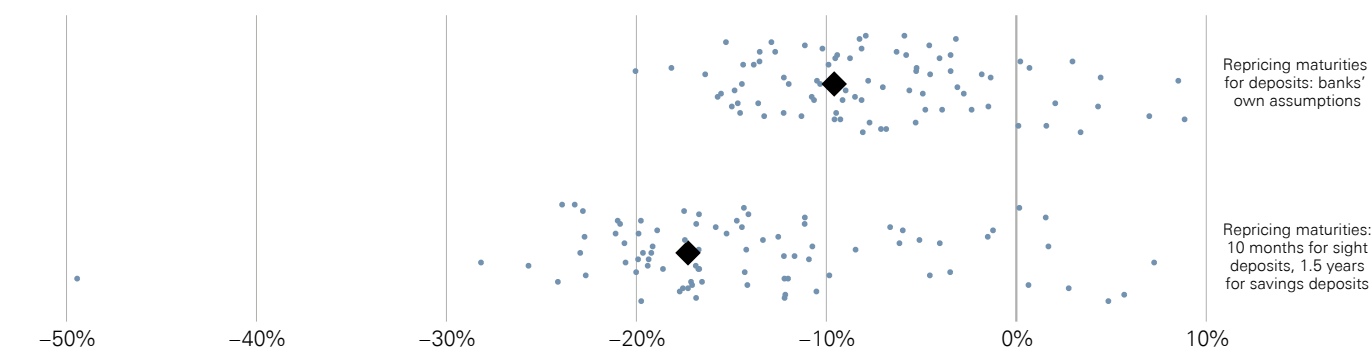
20 The fixed assumptions are repricing assumptions for positions with no contractually defined maturity that are constant over time and that are the same for all banks.

## INTEREST RATE RISK OF DOMESTICALLY FOCUSED BANKS

Impact of a 200 bp interest rate shock according to different assumptions for the repricing maturities<sup>1</sup> of deposits (net present value impact in percent of Tier 1 capital, as at end-2022)

Chart 43

Diamond = average of domestically focused banks



1 Repricing maturity refers to the time period before the interest rate on an interest-bearing asset or liability position is reset.

Source(s): FINMA, SNB



### Exposure to interest rate risk has increased

Banks' exposure to interest rate risk has increased compared to 2021. In the recent past, the domestically focused banks have benefited from the increase in the general interest rate level (cf. subchapter 5.1.1). Retail deposit interest rates have remained close to zero even as the interest rate curve shifted upwards by around 200 basis points. This zero lower bound effect has muted their exposure to interest rate risk. Going forward, however, the interest rate sensitivity of sight and savings deposits should normalise. Hence, funding costs will increase faster than interest income in response to a further increase in interest rates, leading to a materialisation of interest rate risk (cf. subchapter 5.2.4).<sup>21</sup>

The uncertainty regarding depositor behaviour in response to further interest rate shifts is particularly high. Compared to the period before 2009, when interest rates on sight and savings deposits last were significantly above zero, new competitors have emerged, mobile banking has become ubiquitous and a new generation of customers with potentially different behaviours has entered the market.<sup>22</sup> Banks should thus adopt conservative assumptions in their assessment of interest rate risk, in particular regarding the repricing maturity of sight deposits.

### 5.2.3 OPERATIONAL RISK

Operational risk is the risk of loss due to inadequate procedures, fraud, failed internal systems, or external events. It also includes legal risk, cyber risk and events such as a power shortage. The materialisation of operational risk is largely independent of the underlying economic scenario and is not covered by the SNB's stress scenario analysis for domestically focused banks.

Over recent years, cyber risk has become a growing concern for the domestically focused banks. A cyberattack that severely impairs the operational capability of a systemically important bank or group of banks could spill over to other financial institutions; such spillovers could result from banks' interconnectedness, but also due to a mere loss of confidence in the financial system. In addition, a cyberattack on a technology company that provides services to many financial institutions simultaneously – or on their downstream service providers – could spread to the financial system.

### 5.2.4 IMPACT OF STRESS SCENARIOS

The analysis of stress scenarios allows the assessment of banks' resilience to adverse macroeconomic and financial conditions. It therefore constitutes a forward-looking economic assessment of the capital adequacy of banks

based on their ability to absorb losses and complements the regulatory capital figures discussed in subchapter 5.1.2.

### Stress losses could be significant, but capital buffers should ensure adequate resilience

Two of the scenarios discussed in subchapter 2.4 are of particular relevance for domestically focused banks: the interest rate shock scenario and the protracted euro area recession scenario. The interest rate shock scenario allows banks' exposure to interest rate risk to be assessed in the earnings perspective, thus complementing the assessment provided by the net present value approach discussed in subchapter 5.2.2.<sup>23</sup>

Under the interest rate shock scenario, almost all domestically focused banks would experience substantial losses. The losses would mainly be driven by higher mortgage interest rates, leading to a materialisation of affordability risks, and by a pronounced drop in real estate prices, exposing a proportion of the banks' mortgage portfolios to under-collateralisation. Consequently, borrower defaults would lead to a surge in write-downs on domestic mortgages. Moreover, due to their high level of maturity transformation, banks would suffer a decline in net interest income under this scenario. This decline reflects the materialisation of interest rate risk for these banks' earnings. As interest rates rise, funding costs increase faster than interest earnings due to the shorter interest rates resetting maturity on the liabilities side of the banks' balance sheets.

Under the protracted euro area recession scenario, around half of the domestically focused banks are projected to incur losses. Losses on corporate loans and mortgages would increase markedly, driven by lower corporate earnings, higher unemployment and falling real estate prices. Moreover, net interest income would decline as maturing loans would be renewed at lower rates, while the pass-through on funding costs would be limited by the zero lower bound on some liability positions. Banks' net fee and commission income as well as their trading income would also decrease due to the stress on financial markets. Overall, however, domestically focused banks' aggregate losses would be substantially lower under this scenario than under the interest rate shock scenario.

Consequently, while both scenarios would lead to losses and hence a deterioration of the banks' capital situation, the impact would be more significant under the interest rate shock scenario. Under this scenario, many banks would fall below the specific capital buffer target levels set by the Capital Adequacy Ordinance. Moreover, in the absence of counteracting measures, some of these banks,

<sup>21</sup> As interest rates have moved higher, the net present value metric no longer overestimates banks' risk exposure (cf. SNB, Financial Stability Report 2016, pp. 26–30).

<sup>22</sup> If interest rates rise, a substantial portion of funds could quickly migrate into longer-term liabilities with typically higher interest rates, or other forms of investment. As a result, banks may need to reprice client deposits faster than currently anticipated to retain the client deposits as a source of funding. Cf. SNB, Financial Stability Report 2013, pp. 18–19 for a discussion of fixed and banks' own internal repricing assumptions.

<sup>23</sup> The earnings approach allows the measurement of banks' interest rate risk on hold-to-maturity positions, such as mortgages or securities (i.e. bonds). It measures the impact of an interest rate shock scenario on banks' future net interest income over a given time horizon, considering a wide set of dynamic effects. Cf. SNB, Financial Stability Report 2016, pp. 26–30 for a detailed discussion.

representing a significant cumulative market share, would approach, or fall below, regulatory minima.

Overall, though, the results suggest that the domestically focused banks' capital buffers should ensure adequate resilience. Thanks to the substantial capital buffers currently available, most domestically focused banks should be able to absorb the losses under such a stress scenario while continuing to fulfil their role as credit providers to households and companies.

In the current environment (cf. subchapter 2.2), it is essential that banks continuously reassess, and potentially adjust, their exposure and resilience to an interest rate shock scenario coupled with a real estate price correction. In doing so, banks should, in particular, adopt conservative assumptions in their evaluation of interest rate risk (cf. subchapter 5.2.2).

### 5.3 RESOLUTION

If a DF-SIB gets into financial distress and recovery measures prove unsuccessful, the Swiss TBTF regulations stipulate that an orderly resolution must be possible. In order to alleviate the TBTF issue, systemically important banks must meet additional gone-concern loss-absorbing requirements and emergency planning requirements. Moreover, these banks need sufficient liquidity to implement their resolution strategy. The current status of gone-concern loss-absorbing requirements and emergency planning requirements at the DF-SIBs is discussed below.

Given that the instruments envisaged by the TBTF resolution framework were not applied to Credit Suisse (cf. subchapter 4.4), the emergency plans of the three DF-SIBs should be re-evaluated. The domestic focus of the three DF-SIBs should render their resolution much less complex than that of a global systemically important bank (G-SIB), though.

#### **Gone-concern loss-absorbing capacity varies across DF-SIBs**

Gone-concern requirements for DF-SIBs entered into force in 2019 and are being phased in by 2026.<sup>24</sup> Eligible instruments for covering gone-concern requirements include contingent capital and bail-in instruments, excess Tier 1 capital, cantonal/state guarantees and similar mechanisms.<sup>25</sup> The extent of additional loss-absorbing capacity build-up resulting from these requirements will vary across banks and depends on the type of instruments used.

<sup>24</sup> Cf. Capital Adequacy Ordinance.

<sup>25</sup> Excess Tier 1 capital not used to cover going-concern requirements may be used with preferential treatment for gone-concern purposes. As a result, depending on the amount of excess Tier 1 capital, the gone-concern risk-weighted and leverage ratio requirements are reduced by up to one-third of the requirement. To avoid double-counting, such capital has to be deducted from Tier 1 going-concern capital ratios. Explicit cantonal/state guarantees or similar mechanisms are eligible for covering up to half of gone-concern requirements – or even all of them, subject to additional conditions.

In a phase-in perspective, all three banks met the TBTF gone-concern risk-weighted capital and leverage ratio requirements at the end of 2022. In a look-through perspective, Raiffeisen Group and ZKB also met the requirements. At PostFinance, there was a shortfall with respect to the gone-concern requirements in a look-through perspective for the leverage ratio requirement, meaning that the bank will have to build up gone-concern instruments or adapt its leverage ratio exposure to meet these requirements by 2026.

#### **Raiffeisen Group's emergency plan ready to implement, those of ZKB and PostFinance not yet accepted by FINMA**

As part of the TBTF requirements, the three DF-SIBs must demonstrate to the Swiss Financial Market Supervisory Authority (FINMA) that they have effective emergency plans. Such emergency plans are designed to enable banks to continue to fulfil their systemically important functions in the event of imminent insolvency. In conjunction with gone-concern requirements, they ensure the safeguarding of systemically important functions in Switzerland in a crisis. By the end of 2022, Raiffeisen Group's emergency plan met the requirements for the first time. The emergency plans of ZKB and PostFinance exhibited different degrees of implementability, but neither of them had been approved by FINMA.<sup>26</sup>

<sup>26</sup> Cf. FINMA press release of 26 April 2023.



# Abbreviations

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AT1	Additional Tier 1
Basel III	International regulatory framework for banks developed by the BCBS
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CCyB	Countercyclical capital buffer
CDS	Credit default swap
CET1	Common Equity Tier 1
DFB	Domestically focused bank
DF-SIB	Domestically focused systemically important bank
ECB	European Central Bank
ELA	Emergency liquidity assistance
ELA+	Additional emergency liquidity assistance
FINMA	Swiss Financial Market Supervisory Authority
FSB	Financial Stability Board
GAB	Globally active bank
GDP	Gross domestic product
G-SIB	Global systemically important bank
HQLA	High-quality liquid assets
IMF	International Monetary Fund
ISSB	International Sustainability Standards Board
LCR	Liquidity coverage ratio
Libor	London Interbank Offered Rate
LSFF	Liquidity-shortage financing facility
LTI	Loan-to-income
LTV	Loan-to-value
NCU	Non-core unit
NGFS	Network for Greening the Financial System
OECD	Organisation for Economic Co-operation and Development
PLB	Public liquidity backstop
RWA	Risk-weighted assets
SARON	Swiss Average Rate Overnight
SECO	State Secretariat for Economic Affairs
SFSO	Swiss Federal Statistical Office
SP	Securitised product
TBTF	Too big to fail
VaR	Value at risk
ZKB	Zürcher Kantonalbank



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**Data and data sources**

The banking statistics used in this report are based on official data submitted to the SNB and on data published by individual banks. The analysis covers globally active banks and domestically focused banks. Bank data are analysed at a consolidated level. Domestically focused banks comprise banks (currently around 100) with a share of domestic loans to total assets exceeding 50% or with a prominent role in the domestic deposit market. This document is based on data as at 31 May 2023.

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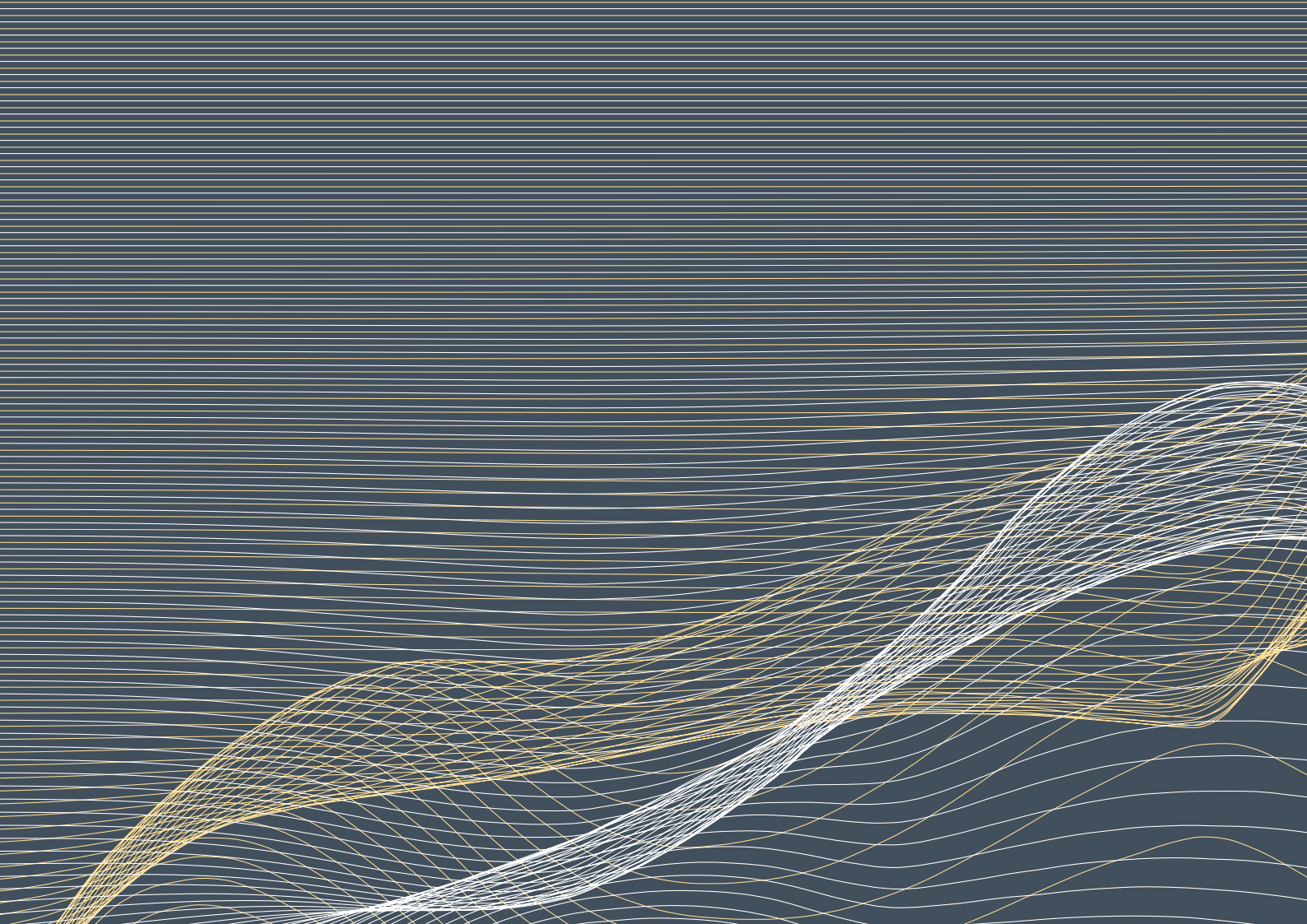
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