

Financial Stability Report 2019

SCHWEIZERISCHE NATIONALBANK
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Financial Stability Report 2019

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Foreword

In this report, the Swiss National Bank (SNB) presents its evaluation of the stability of the Swiss banking sector. The SNB is required to contribute to the stability of the financial system in accordance with the National Bank Act (art. 5 para. 2 (e) NBA). 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 and is not responsible for enforcing banking legislation. These powers lie with the Swiss Financial Market Supervisory Authority (FINMA).

This report analyses the macroeconomic environment and the Swiss banking sector in separate chapters. With respect to the macroeconomic environment (cf. chapter 2), the SNB tracks key domestic and global risks to the Swiss banking sector, focusing on credit quality, real estate and stock markets, banks' funding conditions and interest rates. With respect to the Swiss banking sector, the SNB assesses the big banks – Credit Suisse and UBS – and the domestically focused commercial banks separately (cf. chapters 3.1 and 3.2) due to the differences in their size and business models. 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.

The banking statistics used in this report are based on official data submitted and/or on data reported by individual banks. Data on the big banks are analysed on a consolidated basis. This document is based on data as at 31 May 2019.

MACROECONOMIC ENVIRONMENT

Economic and financial conditions for the Swiss banking sector have deteriorated slightly over the last 12 months. Amid a moderate slowdown in global economic growth and elevated political uncertainty in the US and Europe, global corporate credit quality has weakened somewhat. Against this backdrop, stock markets have experienced large price swings.

More generally, the prolonged period of low interest rates carries risks for global financial stability. In several countries, there are signs of stretched valuations on real estate and stock markets, as well as deteriorating lending standards. Furthermore, global non-financial sector debt relative to GDP is at historically high levels. In an environment where valuations are stretched, small changes in outlook perceptions can lead to strong market reactions, as shown by the recent price swings on stock markets. In addition, the profitability of financial institutions remains under pressure, maintaining incentives to increase risk-taking.

To capture the different sources of risk to the Swiss banking sector, the SNB considers a baseline scenario and four adverse scenarios for developments in the economic environment and in financial market conditions. The baseline scenario describes the most likely outcome given currently available information. It assumes that international and domestic economic conditions for the Swiss banking sector remain moderately positive, and that monetary policy in the advanced economies generally continues to be accommodative. By contrast, the adverse scenarios are designed to assess the resilience of the Swiss banking sector against highly unfavourable, unlikely but possible developments. The first scenario considers a protracted recession in the euro area and an extended period of negative interest rates in the euro area and Switzerland. The second assumes a severe recession in the US, which spreads to the rest of the world. The third involves a major crisis in emerging economies, comparable to those during the second half of the 1990s. The fourth analyses the impact of a global interest rate shock.

BIG BANKS

Since publication of the last *Financial Stability Report*, progress has been achieved in the areas of both resilience and resolution – the two pillars of the revised ‘too big to fail’ regulations (TBTF2). As regards resilience, the Swiss big banks Credit Suisse and UBS have slightly improved their capital situation overall, in spite of the moderate deterioration in economic and financial conditions. As at the end of Q1 2019, they are close to full compliance with the TBTF2 look-through capital requirements on a consolidated basis.¹ The loss potential analyses based on the adverse scenarios considered by the SNB, as well as historical loss experience during the last financial crisis, show that the current calibration of the Swiss TBTF2 requirements is necessary to ensure adequate resilience of the two institutions.

The market assessment of both Swiss big banks’ resilience is more or less unchanged compared to last year’s assessment. Their CDS premia have returned to roughly the same level as one year ago, after having risen in the second half of 2018. Their stand-alone ratings, which evaluate the intrinsic financial strength of the banks, assuming no extraordinary external support, remain unchanged.

In the area of resolution, the Swiss big banks have further improved their gone-concern loss-absorbing capacity. As at the end of Q1 2019, Credit Suisse and UBS already meet all look-through requirements on a consolidated basis. In addition, the Federal Council has initiated a consultation on regulations that will ensure sufficient gone-concern loss-absorbing capacity at the level of individual group entities. The SNB supports the proposed requirements.

Work is also in progress on funding in resolution, with the goal of ensuring that sufficient liquidity is available during preparations for and in the phase immediately after a bail-in. FINMA, as the home resolution authority, is drawing up resolution funding plans in cooperation with the banks, the SNB and foreign host resolution authorities. Taking account of international standards, FINMA is assessing the two big banks’ liquidity needs under possible crisis scenarios and comparing them with the currently available liquidity reserves.

Finally, both banks are finalising their Swiss emergency plans. Credit Suisse and UBS have achieved meaningful progress in resolution planning since the financial crisis. In particular, they have established Swiss bank subsidiaries to house their systemically important functions and they have set up separate service companies to improve operational independence in a crisis. In 2018, FINMA reviewed the two big banks’ emergency plans based on the criteria set out in the Banking Ordinance. According to FINMA, further efforts by the big banks are required, to

¹ Look-through requirements are the requirements that will apply once all transitional arrangements have expired.

demonstrate that systemically important functions can be maintained without interruption in a crisis. In particular, this will involve reducing financial interdependencies within the group and closing liquidity gaps in the event of a crisis. The statutory deadline for the completion of a credible and workable emergency plan is end-2019 for both banks.

In light of the objective of the TBTF2 regulations to end the ‘too big to fail’ issue in Switzerland and remove the de facto obligation by the state to rescue the big banks, full implementation of all requirements is necessary.

DOMESTICALLY FOCUSED COMMERCIAL BANKS Increase in mortgage exposure, adequate resilience at most institutions

In 2018, domestically focused banks further increased their exposure to the Swiss mortgage and real estate markets. Mortgage growth at these banks has remained strong. Affordability risks are high and have continued to rise as measured by the loan-to-income (LTI) ratio. A growing share of new mortgages in the residential investment property segment is financing properties in regions with high vacancy rates. Furthermore, the latest loan vintages in this segment appear particularly vulnerable to shocks due to the accumulation of high affordability and loan-to-value (LTV) risks. Meanwhile, interest rate risk from maturity transformation has remained high. These developments have occurred against the backdrop of persistent imbalances on the mortgage and real estate markets.

Despite the ongoing pressure on profitability exerted by low interest margins, the resilience of most domestically focused banks remains adequate. The leverage ratio and the risk-weighted ratio for these banks are significantly above the regulatory minima. Moreover, SNB stress test results suggest that most domestically focused banks’ capital surpluses, relative to the regulatory minimum requirements, are large enough to absorb the losses under the relevant adverse scenarios. Given the nature of their business, domestically focused banks would face the largest losses in the event of an interest rate shock coupled with a fall in real estate prices (interest rate shock scenario). Under this scenario, a surge in write-downs on domestic mortgages and a decline in net interest income would lead to the depletion of a sizeable proportion of domestically focused banks’ surplus capital. Most banks should be able to absorb these losses without seeing their capitalisation fall below the regulatory minima. However, a number of banks with a significant cumulative market share are projected to fall near or below the regulatory minima.

The losses under such adverse conditions and the inherent uncertainty in the output of stress tests highlight the importance of preserving the capital adequacy of the banking system going forward. With the upcoming final implementation of Basel III, capital requirements for mortgage loans, the core business of many banks in

Switzerland, will become more risk sensitive. This may lead to higher capital requirements for some banks and lower requirements for others, depending on the composition of their assets. From a financial stability perspective, it is important to preserve the level of capitalisation of the banking sector at its current, adequate level. Both regulatory requirements and the prudent stance of many banks towards capital adequacy play a key role in maintaining these surpluses.

Targeted measures are necessary for residential investment property lending

Nominal interest rates have been exceptionally low in Switzerland for a decade. Low rates have softened the impact of the global financial crisis and are necessary in the current environment to stabilise inflation. As a side-effect, low interest rates have favoured the build-up of imbalances on the mortgage and residential real estate markets. Such imbalances pose risks to financial stability that should be addressed with macroprudential policy.

Measures taken between 2012 and 2014² have helped to contain the build-up of imbalances in the owner-occupied segment. In the residential investment segment, by contrast, risks have increased further. While prices have declined slightly since the last *Financial Stability Report*, vacancy rates and affordability risks in this segment have continued to increase. Should interest rates remain low, incentives to increase risk-taking in the domestic credit and real estate markets will remain substantial for banks, commercial investors and households.

In this context, the SNB remains of the view that targeted measures are necessary for residential investment property lending. The SNB supports the Federal Council’s proposal to increase the risk weights for high-LTV loans financing residential investment property. Moreover, the SNB welcomes the Swiss Bankers Association’s readiness to consider reducing the LTV ratio and shortening the amortisation period for new loans in the investment property segment through a revision of the self-regulation guidelines. Either the revision of the guidelines or, alternatively, the regulatory amendment is expected to be implemented later this year and to take effect in early 2020.

The SNB will continue to monitor developments on the mortgage and real estate markets closely, paying particular attention to developments in the residential investment property segment and to banks’ risk-taking in mortgage lending. In parallel, the SNB will regularly reassess the need for an adjustment of the countercyclical capital buffer (CCyB).

² These measures include stricter capital requirements for high-LTV mortgage loans, revisions of the self-regulation guidelines for mortgage lending in 2012 and 2014, and the activation and subsequent increase of the CCyB.

2 Macroeconomic environment

2.1 KEY DEVELOPMENTS

Economic and financial conditions for the Swiss banking sector have deteriorated slightly over the last 12 months. Amid a moderate slowdown in global economic growth and elevated political uncertainty in the US and Europe, global corporate credit quality has weakened somewhat. Against this backdrop, stock markets have experienced large price swings.

More generally, the prolonged period of low interest rates carries risks for global financial stability. In several countries, there are signs of stretched valuations on real estate and stock markets, as well as deteriorating lending standards. Furthermore, global non-financial sector debt relative to GDP is at historically high levels. In an environment where valuations are stretched, small changes in outlook perceptions can lead to strong market reactions, as shown by the recent price swings on stock markets. In addition, the profitability of financial institutions remains under pressure, maintaining incentives to increase risk-taking.

Slowdown in economic growth: Overall, global economic growth has experienced a moderate slowdown over the last 12 months (cf. chart 1). In the euro area and Switzerland, growth has declined significantly. In emerging economies, it has fallen overall, with the

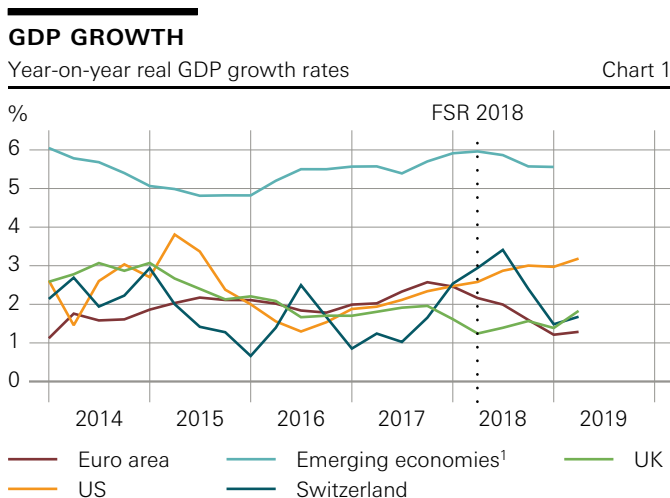
slowdown in China continuing. The UK and the US are exceptions; growth has picked up in these economies.

Slight weakening of corporate credit quality: Overall, indicators for global credit quality have deteriorated somewhat over the last 12 months, driven by developments in the corporate segment. The ratio of credit rating downgrades to total rating changes has increased slightly in both the US and Europe (cf. chart 2). Moreover, the global share of outstanding corporate bonds with the lowest investment grade relative to total investment grade corporate bonds is historically high, indicating an increase in average borrower riskiness.¹ Corporate bond spreads, however, are currently at similar levels to 12 months ago, after increasing temporarily (cf. chart 3). In the sovereign segment, the market assessment is broadly unchanged, with stable sovereign risk premia (cf. chart 4). In Italy, risk premia continue to be substantially higher than in other major advanced economies, suggesting investor concern about fiscal vulnerabilities and political uncertainty.

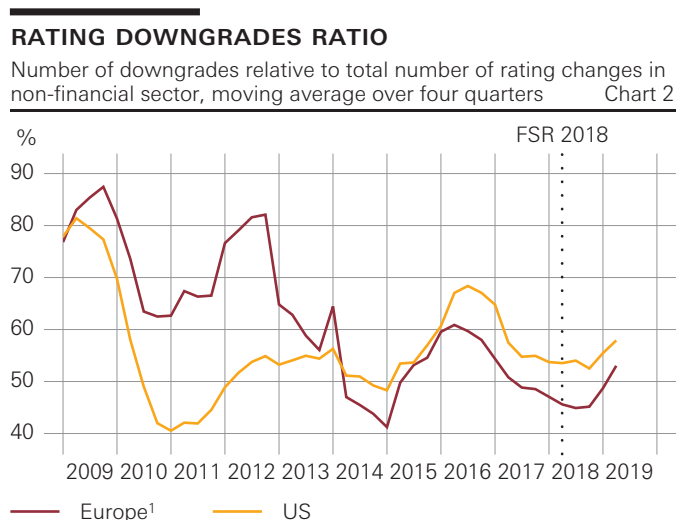
Other forward-looking indicators also point to growing vulnerabilities in global credit markets: global non-financial sector debt relative to GDP is at historically high levels.² Moreover, there are signs of deteriorating lending standards in the corporate segment in the US, in particular for leveraged loans.³ Chinese corporate leverage is also elevated.⁴

Non-performing loan ratios as backward-looking indicators, on the other hand, have improved in major markets. In the US, non-performing loan ratios have declined further and are now back to pre-crisis levels.

1 Cf. IMF, *Global Financial Stability Report*, October 2018, p. 8.
2 Cf. BIS, *Annual Economic Report*, June 2018, p. xi.
3 Cf. Board of Governors of the Federal Reserve System, *Financial Stability Report*, November 2018, p. 20.
4 Cf. IMF, *Global Financial Stability Report*, October 2018, p. 10.



¹ China, South Korea, India, Brazil and Russia.
Sources: State Secretariat for Economic Affairs (SECO), Thomson Reuters Eikon, SNB calculations



¹ EU-17 countries plus Switzerland, Norway and Iceland.
Sources: Bloomberg, Moody's

In the euro area, too, non-performing loan ratios have continued to fall, although they remain historically high in Italy and Spain.

In Switzerland, market indicators such as corporate spreads indicate a slight improvement of corporate credit quality. While non-performing loan ratios remain at historically low levels, household indebtedness relative to GDP and affordability risks in mortgage lending are high (cf. chapter 3). Both factors make households vulnerable to macroeconomic and interest rate shocks.

Large price swings on stock markets: Against a background of heightened uncertainty, stock markets have experienced large price swings over the last 12 months. Towards the end of 2018, stock prices fell abruptly and short-term volatility spiked (cf. chart 5). In 2019 so far, stock prices have recovered, but only partially in most markets. Exceptions are the US and Switzerland, where stock prices have more than recouped their losses. The cyclically

adjusted price/earnings ratio, a measure of stock valuation, is currently above its long-term average for the US and Switzerland, and close to it for the euro area.⁵

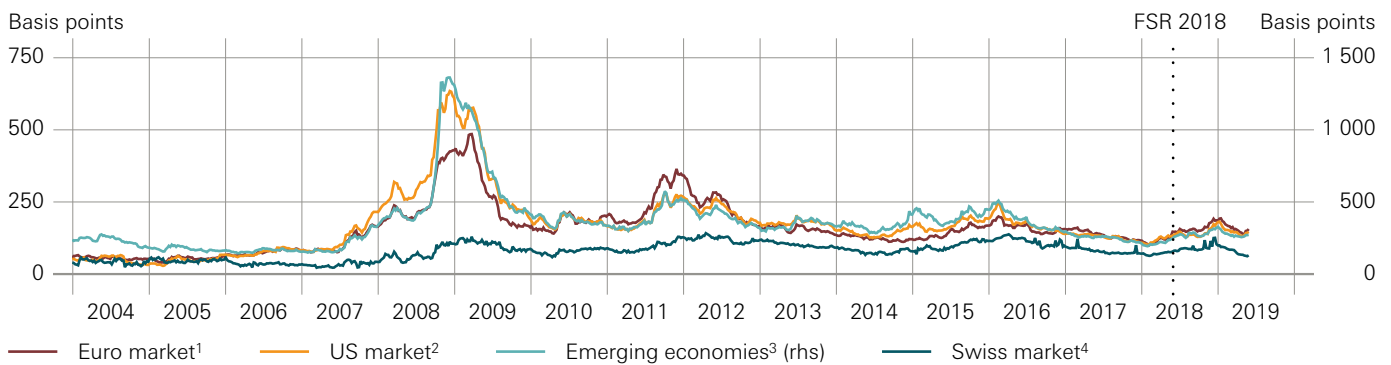
Bank stock prices under pressure globally, stable CDS premia: Bank stock prices globally have come under pressure over the last 12 months, underperforming the overall index in all major markets. By contrast, CDS premia (a market indicator of bank resilience) for the largest banks are generally at similar levels to a year ago (cf. chart 6). An exception are UK banks, where spreads have increased a little. On average, CDS premia for large banks in the euro area continue to be higher than for those in other advanced economies; this is primarily attributable to German and Italian banks.

⁵ Based on a 40-year average of the ratio. For the US, the deviation of the price/earnings ratio from its long-term average is significantly larger when long-term data covering more than 100 years are used.

BOND SPREADS

Yield spread between corporate and government bonds

Chart 3

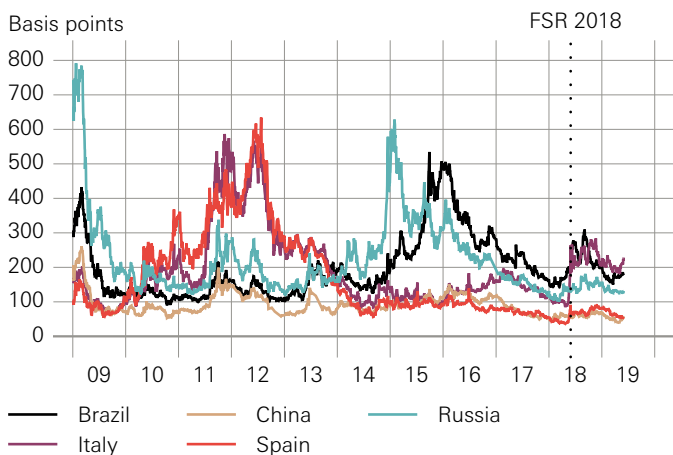


¹ Euro-Aggregate Corporate (investment grade, 7–10 year maturity, EUR-denominated) and German Government (7–10 year maturity), Bank of America Merrill Lynch.
² US Corporate (investment grade, 7–10 year maturity, USD-denominated) and US Treasury (7–10 year maturity), Bank of America Merrill Lynch.
³ Emerging Economies Corporate (USD and EUR-denominated), option-adjusted spread, Bank of America Merrill Lynch.
⁴ Yields for Swiss investment grade corporate bonds and for Swiss Confederation bonds (10-year maturity), calculated by the SNB.
 Sources: Thomson Reuters Eikon, SNB

SOVEREIGN CREDIT DEFAULT SWAP PREMIA

Premia for credit protection (five-year senior)

Chart 4

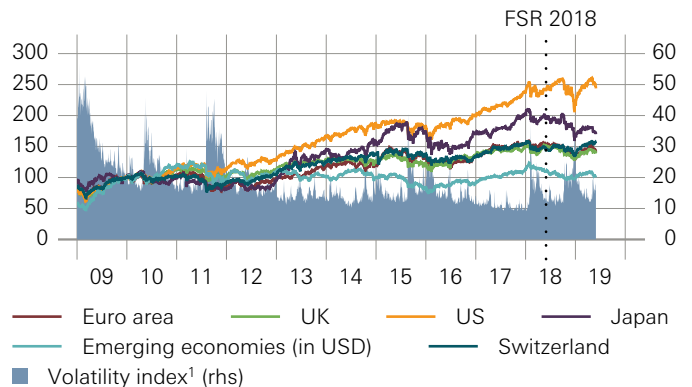


Source: Bloomberg

STOCK MARKET INDICES

Datastream global indices (indexed to 1 Jan 2010 = 100) and volatility

Chart 5



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: Thomson Reuters Eikon

Interest rates remain low: Interest rates generally lie at historically low levels and have either decreased or remained stable over the last 12 months (cf. chart 7). An exception to this are short-term interest rates in the US and the UK, which have increased somewhat, although the corresponding long-term interest rates have declined.

Imbalances on real estate markets: Imbalances persist on real estate markets in several countries. In the US, prices in the residential and investment⁶ segments have continued to rise (cf. chart 8). While residential prices have increased broadly in line with rents, investment prices have grown faster than rents. In Europe, residential real estate prices have generally risen somewhat and the price-to-rent ratio continues to signal imbalances on the residential real estate markets in the UK and France

(cf. chart 9). Moreover, there are signs of stretched valuations in some segments of the investment real estate markets in the euro area and the UK.⁷ In Switzerland, imbalances on the real estate market persist (cf. chapter 3).

2.2 SCENARIOS

To capture the different sources of risk to the Swiss banking sector, the SNB considers a baseline scenario and four adverse scenarios for developments in the economic environment and in financial market conditions. The baseline scenario describes the most likely outcome given currently available information. By contrast, the adverse scenarios are designed to assess the resilience of the Swiss banking sector against highly unfavourable, unlikely but possible developments in economic and financial

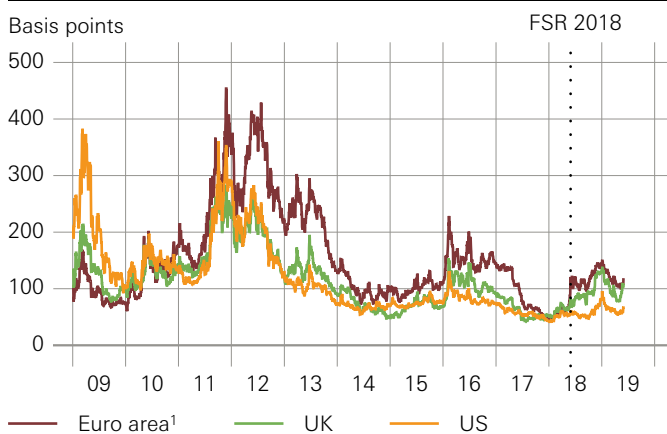
6 'Investment real estate' denotes real estate held for rental purposes. It can include both residential and commercial (i.e. office, retail, industrial) property.

7 Cf. European Central Bank, *Financial Stability Review*, May 2019, p. 43; and Bank of England, *Financial Stability Report*, June 2018, p. 28.

BANK CREDIT DEFAULT SWAP PREMIA

Average of biggest banks (five-year senior)

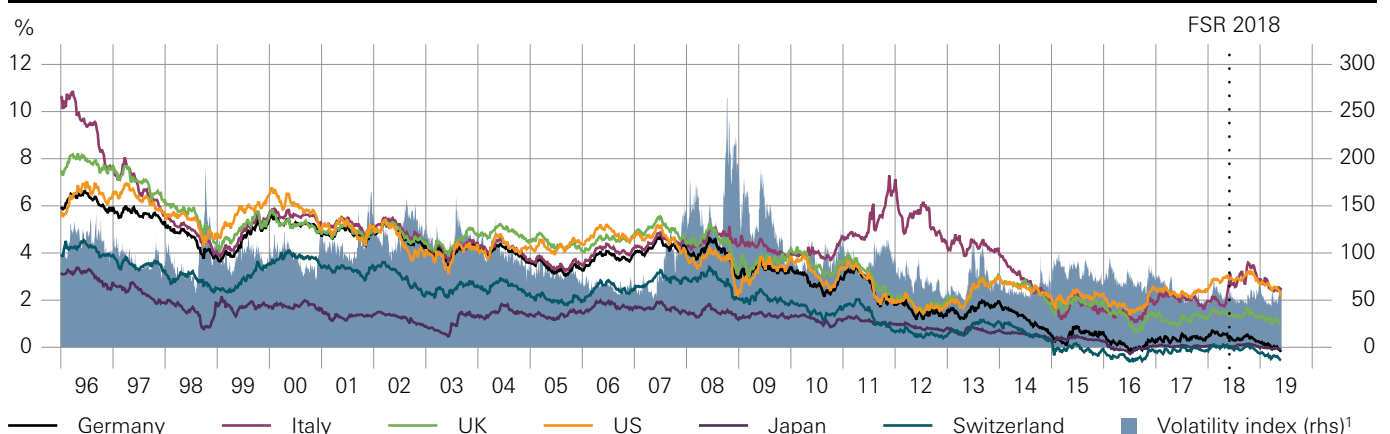
Chart 6



¹ France, Germany, Netherlands, Italy and Spain.
Sources: Bloomberg, SNB calculations

LONG-TERM INTEREST RATES: TEN-YEAR GOVERNMENT BONDS

Chart 7



¹ The index used is the MOVE Index, which measures the implied volatility of US Treasury options.
Sources: Bloomberg, Thomson Reuters Eikon

conditions. All four adverse scenarios concentrate on macroeconomic and financial risks, but exclude operational and legal risks for banks. This is because the materialisation of operational and legal risks is largely independent of the underlying economic scenario. The impact of the different scenarios on the Swiss banking sector as regards banks' loss potential and resilience is examined in chapter 3.

Baseline scenario

Under the baseline scenario, international and domestic economic conditions for the Swiss banking sector remain moderately positive. In the US and the euro area, growth is roughly in line with potential. Monetary policy in the advanced economies generally continues to be accommodative. In emerging economies, there is ongoing solid growth overall, although growth in China slows in parallel with declining potential GDP growth. In Switzerland, growth is solid and the economy operates under full employment conditions.

Adverse scenarios

Protracted euro area recession: Amid weakening economic growth and rising political uncertainty, renewed concerns emerge about the sustainability of public finances and the soundness of the banking system. There is widespread financial and banking stress, resulting in increased risk premia for euro area banks and southern member states. Confidence declines and the euro area dips into recession. The recession spills over to the US and Switzerland, triggering a fall in share prices and a widening of corporate spreads. In the euro area and Switzerland, the recession is protracted and followed by only a weak recovery. Interest rates in these jurisdictions remain negative for an extended period.

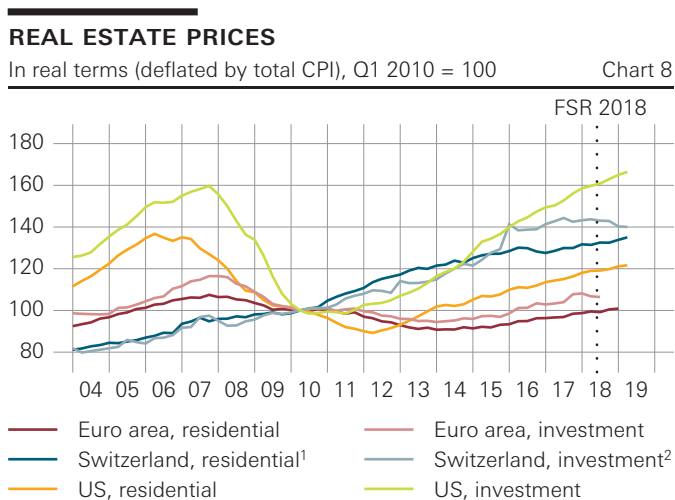
US recession: There is a severe recession in the US, which spreads to the rest of the world. US unemployment surges to historically high levels. Financial stress rises significantly, and US real estate and share prices drop

sharply. Switzerland, Europe and Japan fall into a severe recession and there is a slowdown in emerging economies. This scenario specification is similar to the 'severely adverse scenario' of the US Federal Reserve's 2019 stress test.⁸

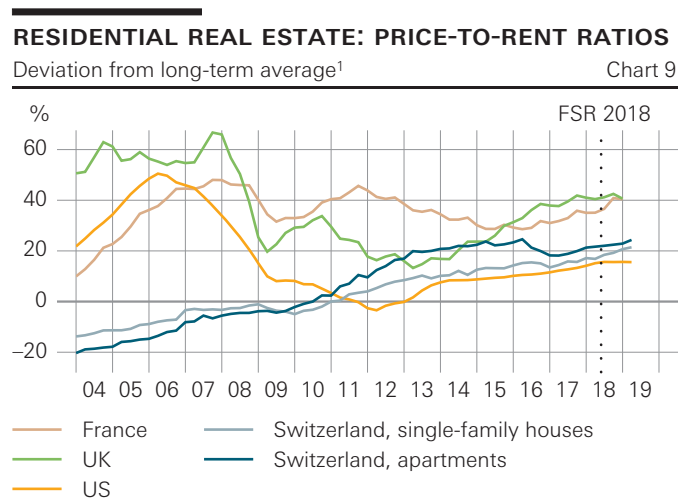
Emerging market crisis: A major crisis erupts in emerging markets, comparable to those during the second half of the 1990s. There are heavy capital outflows, emerging market bond spreads rise abruptly and stock markets collapse. The severe deterioration in financial conditions causes economic growth in these countries to decline sharply, and default rates on corporate and household debt to increase substantially, leading to a pullback in bank lending. Financial stress is transmitted to advanced economies, including Switzerland, and stock markets fall sharply. Short-term financing conditions for banks are impaired. Advanced economies experience a mild recession.

Interest rate shock: Global potential output is overestimated and inflationary pressures start to build. As firms hit capacity constraints and labour market conditions tighten, inflation expectations suddenly jump. Central banks raise interest rates quickly in an effort to reduce inflationary pressures and re-anchor inflation expectations. Longer-term interest rates overshoot as term premia surge on the back of soaring inflation risk premia. Economic growth subsequently slows significantly. Real estate prices fall due to both the interest rate hikes and the drop in income growth. While this is a severe scenario, events of a similar or even greater magnitude have been observed in the past (e.g. in the UK in the 1970s, in the Netherlands around 1980, or in Japan and Switzerland in the 1990s).

8 www.federalreserve.gov/newsevents/pressreleases/bcreg20190205b.htm.



¹ Weighted average of transaction prices for single-family houses and apartments.
² Weighted average of transaction prices for commercial and apartment buildings.
Sources: BIS, SFSO, Thomson Reuters Eikon, Wüest Partner



¹ The average is calculated over the period from 1970 to 2019, or over the period for which data are available. For Switzerland, transaction prices are used.
Sources: BIS, OECD, SFSO, Thomson Reuters Eikon, Wüest Partner

3

Assessment of the Swiss banking sector

The SNB assesses big banks and domestically focused commercial banks in separate chapters due to the differences in their size and business models. The big banks category consists of Credit Suisse and UBS, which are internationally active universal banks that engage in substantial investment banking activities and play a prominent role in the international wealth management business. Due to their international focus, roughly 70% of their balance sheet comprises foreign assets. Credit Suisse and UBS have both been identified by the Financial Stability Board (FSB) as global systemically important banks (G-SIBs). In addition to their global importance, they are also highly relevant for financial stability in Switzerland and have hence been designated as systemically important by the SNB. Each big bank has a market share in both domestic credit and deposit business of roughly 15% and a ratio of total exposure¹ to GDP of roughly 130%.

Domestically focused commercial banks are banks with a share of domestic loans to total assets exceeding 50% or with a prominent role in the domestic deposit market. The cumulative market share of these banks (of which there are currently around 100) is approximately 65% in the domestic credit market and 60% in the domestic deposit market. These banks also include the three DF-SIBs PostFinance, Raiffeisen Group and ZKB. The DF-SIBs are analysed together with the other domestically focused banks in this chapter. However, due to their particular relevance for financial stability, they are also discussed individually wherever deemed relevant and where confidentiality constraints allow.

The assessment of banks is based on a comparison of banks' capital with the loss potential estimated under the scenarios described in chapter 2.2 and, in the case of the big banks, takes into account market indicators and resolvability aspects.

3.1 BIG BANKS

Since publication of the last *Financial Stability Report*, the big banks Credit Suisse and UBS have made further progress in the areas of both resilience and resolution – the two pillars of the revised ‘too big to fail’ regulations

¹ Total exposure, as a measure of bank size, is the sum of on and off-balance-sheet positions as defined in the Basel III leverage ratio framework.

(TBTF2). As regards resilience, they are close to full compliance with the look-through going-concern capital requirements on a consolidated basis. The loss potential analyses based on the adverse scenarios considered by the SNB (cf. chapter 2.2), as well as historical loss experience during the last financial crisis, show that the current calibration of the Swiss TBTF2 capital requirements is necessary to ensure adequate resilience of the two institutions.

As regards resolution, Credit Suisse and UBS both already meet all gone-concern loss-absorbing requirements on a consolidated basis. Since the introduction of the ‘too big to fail’ regulations, the two big banks have also achieved meaningful progress in resolution planning. In particular, they have established Swiss bank subsidiaries to house their systemically important functions and they have set up separate service companies to improve operational independence in a crisis. In this area, work is in progress on funding in resolution and the emergency plan. Chapters 3.1.1 and 3.1.2 below discuss developments relating to the two TBTF pillars in more detail.

In light of the objective of the TBTF2 regulations to end the ‘too big to fail’ issue in Switzerland and remove the de facto obligation by the state to rescue the big banks, full implementation of all requirements is necessary. This is all the more important, given the size of the big banks relative to the Swiss economy.² While Credit Suisse and UBS have reduced their balance sheets significantly following the financial crisis (in aggregate by around 50% compared with end-2006), total exposure, as a measure of bank size, is still roughly 130% of Swiss GDP for each of the Swiss big banks.³

An international comparison shows that Switzerland remains in a special situation (cf. chart 10). In contrast to other jurisdictions, Switzerland is home to two G-SIBs that each have a total exposure exceeding domestic GDP. While a few European G-SIBs are also large compared to their home country's GDP, most G-SIBs are considerably smaller. This is particularly the case for the US G-SIBs, even though they are among the largest worldwide in absolute terms. If euro area banks' size is measured relative to total euro area GDP, they are at about the same level as their US peers.⁴

² The size of a bank relative to the size of the domestic economy is a common indicator of the systemic importance of an institution. Cf., for example, ‘Botschaft zur Änderung des Bankengesetzes (Stärkung der Stabilität im Finanzsektor; too big to fail)’ of 20 April 2011, and Basel Committee on Banking Supervision, ‘A framework for dealing with domestic systemically important banks’, October 2012.

³ The IMF also regularly takes into account the size of the two big banks relative to the domestic economy in its country assessments of Switzerland. Cf., for example, IMF Country Report No. 16/381, December 2016, p. 41: “The large size of their balance sheets (approximately 300 percent of Swiss GDP) and their global systemic importance necessitate strict regulation.” For an analysis of contingent liabilities from banks, cf. Serkan Arslanalp and Yin Liao (2015), ‘Contingent Liabilities from Banks: How to Track Them?’, IMF Working Paper 15/255, December 2015.

⁴ Comparing euro area banks to euro area GDP is a sensible alternative point of reference since these banks have access to centralised funding and capitalisation schemes (cf. https://srb.europa.eu/en/content/single-resolution-fund-and-www.consilium.europa.eu/media/37268/tor-backstop_041218_final_clean.pdf).

Switzerland's situation is special because it is a small economy with a large financial centre. In this context, the services provided by large, internationally active banks play an important role for the Swiss economy. The consistent implementation of TBTF2 ensures a robust capitalisation of these banks and thereby contributes to the stability of the Swiss financial centre – a key advantage in the face of international competition.

3.1.1 RESILIENCE

The resilience assessment comprises three main elements: regulatory capital, loss potential analysis, and the market's assessment. The following sections describe the assessment in more detail.

Big banks are close to full compliance with look-through capital requirements under TBTF2

Since publication of the last *Financial Stability Report*, the Swiss big banks Credit Suisse and UBS have slightly improved their capital situation overall. As at the end of Q1 2019, they are close to full compliance with the requirements for going-concern capital on a consolidated basis under TBTF2. Specifically, they already meet all requirements under the grandfathering perspective⁵ as well as all risk-weighted capital requirements under the look-through perspective, and either meet or are close to meeting the look-through leverage ratio requirements.

In the look-through perspective, eligible going-concern instruments are defined according to the final qualitative requirements set down in TBTF2, i.e. after expiry of all transitional provisions. These final quality requirements are the appropriate benchmark for assessing the banks' resilience, as they reflect the loss-absorbing capacity of the various instruments. In this perspective, going-concern capital is made up of Common Equity Tier 1 (CET1) capital

and high-trigger contingent capital instruments (HT CoCos) that qualify as additional Tier 1 (AT1) capital.

Based on this look-through perspective, between Q1 2018 and Q1 2019, Credit Suisse's going-concern leverage ratio rose slightly, from 4.6% to 4.7%, and that of UBS rose from 4.7% to 5.2% (cf. table 1). Whereas the risk-weighted going-concern capital ratio at UBS rose during the same period from 16.4% to 17.6%, at Credit Suisse it declined from 15.6% to 14.5%. The decrease in the risk-weighted going-concern ratio at Credit Suisse was mainly due to an increase in risk-weighted assets (RWA).

In the grandfathering perspective, eligible going-concern instruments are defined according to the regulations that will apply from 1 January 2020. This perspective forms the basis for the figures published by the big banks,⁶ and permits an assessment of the degree to which they will meet the quantitative requirements of 5% (leverage ratio) and 14.3% (risk-weighted) that will apply as from that date. Under the grandfathering clause applicable from the beginning of 2020, the banks can temporarily include instruments that are not eligible as going-concern capital under the final TBTF2 requirements. Specifically, the banks can use low-trigger contingent capital instruments (LT CoCos) with AT1 capital quality up to their first call date – provided this date is after 1 January 2020 – in order to comply with the going-concern capital requirements that will apply from 2020.⁷

Based on this grandfathering perspective, between Q1 2018 and Q1 2019, Credit Suisse's going-concern leverage ratio rose from 5.0% to 5.2%, and that of UBS increased from 5.0% to 5.4% (cf. table 1). The risk-weighted going-

5 The grandfathering perspective takes account of transitional provisions which permit the temporary inclusion of certain lower-quality capital instruments as going-concern capital.

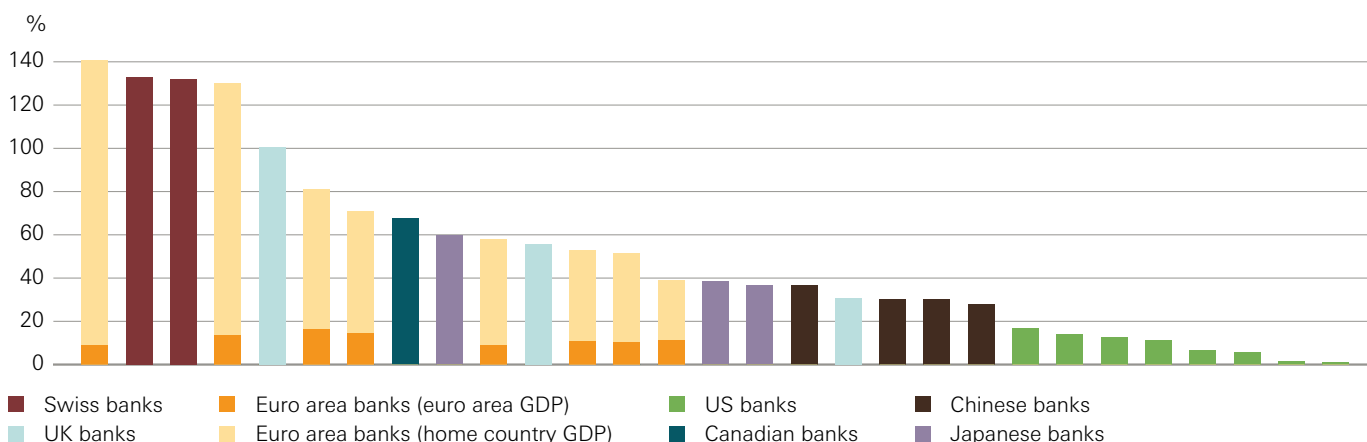
6 In their disclosure reports, the big banks use different terms when referring to the grandfathering perspective. UBS refers to 'Swiss SRB as of 1.1.20', and Credit Suisse's grandfathering perspective is called 'look-through'.

7 As at Q1 2019, the two big banks have disclosed such instruments with first call dates in 2024 (Credit Suisse) and 2025 (UBS) at the latest.

BANK SIZE TO GDP OF JURISDICTION¹

G-SIBs

Chart 10



¹ Bank size measured by total exposure as at Q4 2018; GDP as at 2017.

Sources: Bank disclosures, IMF, SNB calculations

GOING-CONCERN CAPITAL RATIOS AND REQUIREMENTS

Table 1

	Credit Suisse		UBS		Requirement ¹
	Q1 2018	Q1 2019	Q1 2018	Q1 2019	
TBTF2 ratios (look-through, in percent) ²					
TBTF2 CET1 capital ratio	12.9	12.5	13.1	13.0	10.0
TBTF2 going-concern capital ratio	15.6	14.5	16.4	17.6	14.3
TBTF2 CET1 leverage ratio	3.7	4.0	3.8	3.8	3.5
TBTF2 going-concern leverage ratio	4.6	4.7	4.7	5.2	5.0
TBTF2 ratios (with grandfathering as at 1 January 2020, in percent) ³					
TBTF2 CET1 capital ratio	12.9	12.5	13.1	13.0	10.0
TBTF2 going-concern capital ratio	17.2	16.1	17.3	18.5	14.3
TBTF2 CET1 leverage ratio	3.7	4.0	3.8	3.8	3.5
TBTF2 going-concern leverage ratio	5.0	5.2	5.0	5.4	5.0
Basel III ratios (look-through, in percent) ⁴					
Basel III CET1 capital ratio	12.9	12.6	13.1	13.0	8.0
Basel III Tier 1 capital ratio	17.4	16.2	17.3	18.5	9.5
Basel III Tier 1 leverage ratio	5.1	5.2	5.0	5.4	3.5
Levels (look-through, in CHF billions)					
TBTF CET1 capital	34.9	36.4	33.2	34.5	–
High-trigger additional Tier 1 contingent capital (HT AT1 CoCos)	7.5	5.8	8.5	12.3	–
Low-trigger additional Tier 1 contingent capital (LT AT1 CoCos) ⁵	4.4	4.7	2.3	2.4	–
TBTF RWA	272	291	254	266	–
TBTF total exposure	932	902	882	907	–

1 The requirements do not include a CCyB requirement.

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 HT CoCos with AT1 capital quality.

3 The ratios are calculated taking into account the grandfathering clause applicable from January 2020: LT CoCos with AT1 capital quality and 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 requirement for the Basel III Tier 1 leverage ratio comprises the minimum of 3% and the surcharge for global systemically important banks (applicable from January 2022) of 0.5% for both banks.

5 Qualified for grandfathering as at 1 January 2020.

Sources: Big banks' disclosures, SNB calculations

concern capital ratio at UBS rose during the same period from 17.3% to 18.5%, whereas at Credit Suisse it declined from 17.2% to 16.1%.

The two banks also meet the requirements now in force under the Basel III international capital framework. This applies to both risk-weighted and leverage ratios. In an international comparison, both big banks' risk-weighted Basel III Tier 1 capital ratios are above the average for G-SIBs, while their Basel III Tier 1 leverage ratios are still slightly below the corresponding average (cf. chart II).

Big banks' loss potential continues to be substantial

The assessment of loss potential is based on the big banks' risk exposures and on the analysis of these exposures' sensitivity to the shocks assumed in each scenario. The results are described in qualitative terms and illustrated with publicly available exposure and balance sheet data. This takes into account, in particular, the fact that risk exposures and sensitivities can be measured in a number of different ways.

The loss potential is substantial under all four of the scenarios described in chapter 2.2. The US recession scenario results in the highest loss potential. The adverse scenarios of an interest rate shock, a protracted euro area recession and an emerging market crisis all exhibit loss potentials of a similar magnitude, albeit somewhat lower than under the US recession scenario. Under all four scenarios, the loss potential stems primarily from loans in Switzerland and the US, counterparty exposure from

derivatives and securities financing transactions, and equity and bond positions. Irrespective of the scenarios considered, losses can also result from operational and legal risks.

Loans in Switzerland: A deterioration of credit quality in Switzerland, as described in the interest rate shock, US recession and protracted euro area recession scenarios, could lead to substantial losses at the two Swiss big banks, owing to write-downs and credit defaults. At end-2018, Credit Suisse and UBS had loans outstanding against domestic clients totalling CHF 317 billion, CHF 267 billion of which was in the form of mortgage loans.⁸

Loans in the US: A deterioration of credit quality in the US, as described in the US recession scenario, could lead to substantial losses for the big banks in connection with corporate loans. At end-2018, the big banks together had unsecured claims outstanding against the private sector in the US (excluding financial institutions) totalling around CHF 65 billion.⁹

Derivatives and securities financing transactions: Both the protracted euro area recession scenario and the US recession scenario could lead to substantial losses from counterparty exposures arising out of derivatives and

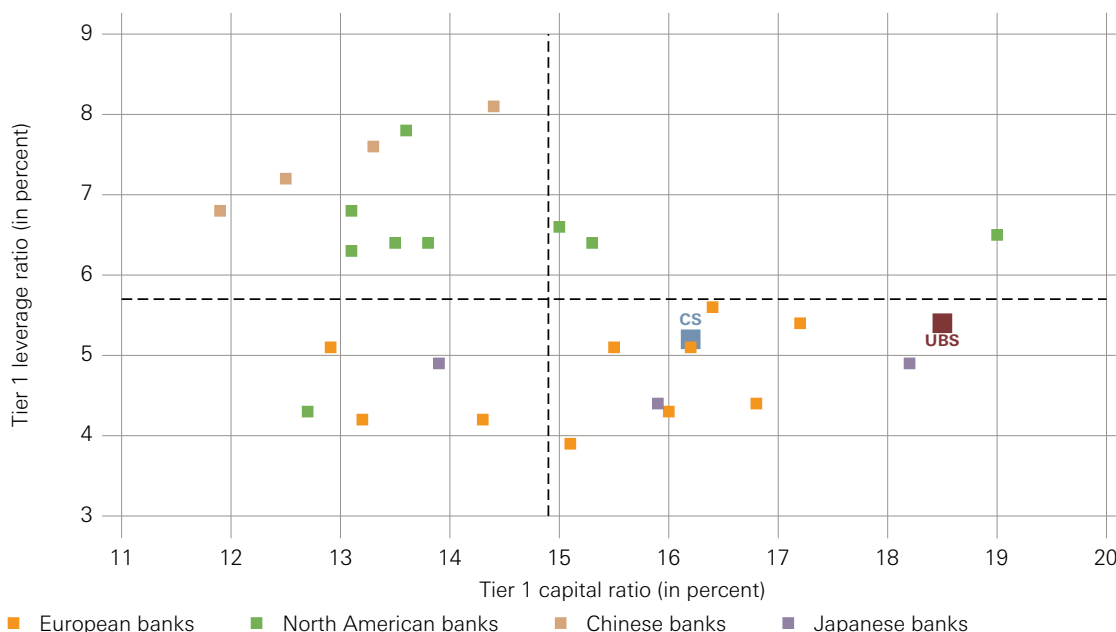
⁸ Source: SNB.

⁹ Source: SNB. Alongside claims against companies, this also includes claims against households. Unsecured claims may include trading and other liquid assets with comparatively low risk.

INTERNATIONAL COMPARISON OF TIER 1 CAPITAL¹

G-SIBs, Q1 2019

Chart 11



¹ The dashed lines depict the (unweighted) averages.

Sources: Bank disclosures

securities financing transactions, largely with financial institutions. At end-2018, the big banks' regulatory counterparty credit risk exposures amounted to CHF 164 billion.¹⁰

Equities and bonds: A sharp decrease in share prices around the world and a sharp increase in corporate bond spreads could lead to substantial losses, depending on the effectiveness of hedging. At end-2018, the big banks' gross trading portfolios in equities and corporate bonds totalled CHF 134 billion.¹¹ These holdings are partly hedged against valuation losses.

Both big banks publish their own risk assessments. However, these cannot be directly compared with the SNB's loss potential estimates, either because the big banks provide statistical measures that are not based on scenarios, or because they do not publish information on the severity of the stress scenario applied.

As regards statistical measures of loss potential, Credit Suisse reported a position risk of CHF 19 billion,¹² or CHF 29 billion if operational and other risks are included, and UBS reported risk-based capital of CHF 33 billion, including operational risks.¹³ Owing to different methodologies, these two statistical measures are not directly comparable.

Market assessment

Market prices (e.g. CDS premia¹⁴) and ratings reflect the market's or rating agencies' assessment of a bank's resilience. By end-May 2019, the CDS premia of both big banks had returned to levels similar to those at the time of last year's *Financial Stability Report*, after having risen towards the end of 2018. In an international comparison, CDS premia for the two Swiss big banks are currently around the median for large globally active banks (cf. chart 12).

The rating agencies' assessment of banks' resilience is reflected in stand-alone ratings, which evaluate the intrinsic financial strength of the banks, assuming no extraordinary external support. The resilience of the Swiss big banks is rated as unchanged compared to last year's *Financial Stability Report*. The stand-alone ratings of both Swiss big banks are comparable to those of other large globally

active banks (cf. chart 13 for an international comparison based on Moody's stand-alone ratings).

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, all three major rating agencies (Moody's, S&P and Fitch) removed the government support uplift a few years ago. At the level of the operating company, S&P and Fitch have also removed government support, while Moody's continues to assume that Credit Suisse and UBS – alongside most other G-SIBs in Europe and the US – benefit from such a rating uplift (1 notch) on their deposits and senior debt. The agencies have not ruled out the possibility of changing their assessments regarding the likelihood of government support and reintroducing an uplift in the future.¹⁵

3.1.2 RESOLUTION

The resolution assessment comprises the following elements: gone-concern loss-absorbing capacity, funding in resolution and the emergency plan. The sections below describe the assessment in more detail.

Big banks meet gone-concern loss-absorbing requirements

Since publication of the last *Financial Stability Report*, the two Swiss big banks have further improved their gone-concern loss-absorbing capacity. The improvement is due to the continued issuance of bail-in instruments. These are

¹⁵ Cf., for example, Moody's, 'FAQ: European Resolution Regime Tested by Proposed Montepaschi Bail-Out', 9 January 2017, p.1: "However, should such a bail-out be replicated, we would likely revisit our determination of the BRD [Bank Recovery and Resolution Directive] as an effective operational resolution regime, and consider whether government support for European banks could be more widespread than we currently anticipate." Historical evidence shows that rating agencies can quickly increase the uplift in periods of crisis, if they judge that the likelihood of government intervention has grown (cf. *Financial Stability Report*, 2016, for an illustration).

¹⁰ Sources: UBS, *31 December 2018 Pillar 3 report*; Credit Suisse, *Pillar 3 and regulatory disclosures 4Q18*.

¹¹ Sources: Annual reports for 2018.

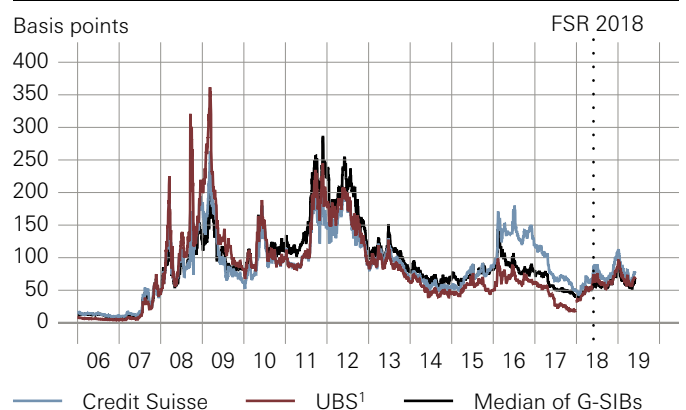
¹² Source: Credit Suisse, quarterly report for Q1 2019. Credit Suisse bases its calculation of position risk on its Economic Capital Model. The position risk figures used here correspond to the statistical loss potential over a one-year horizon. The probability that this level of losses for position risk will not be exceeded is 99.97%.

¹³ Source: UBS, *Annual Report*, 2018. UBS bases its calculation of risk-based capital on its statistical risk framework. The risk-based capital figures correspond to the statistical loss potential over a one-year horizon. The probability that this level of losses will not be exceeded is 99.90%.

¹⁴ The greater the credit risk and the lower the assessment of resilience, the higher the premium on a given CDS. However, market prices include market expectations of government support in a crisis ('too big to fail' 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 CDS PREMIA

Premia for credit protection (five-year senior) Chart 12



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

Sources: Bloomberg, Thomson Reuters Eikon

debt securities, rather than equity, and are used to recapitalise a bank in the event of impending insolvency, without recourse to government support. This is achieved by converting creditors' claims from these bail-in instruments to equity claims.

Based on the look-through perspective, between Q1 2018 and Q1 2019, Credit Suisse's gone-concern leverage ratio rose from 4.4% to 4.9%, and that of UBS from 4.3% to 4.4% (cf. table 2). Over the same period, the big banks' risk-weighted gone-concern ratios improved from 15.0% to 15.2% (Credit Suisse) and from 14.8% to 15.1% (UBS).¹⁶

As at the end of Q1 2019, both big banks met the requirements for gone-concern instruments on a consolidated basis under TBTF2. These requirements take into account reductions on the original look-through requirements of 5% (leverage ratio) and 14.3% (risk-weighted) due to rebates granted by FINMA on the basis of improvements in these banks' global resolvability. These rebates currently amount to 0.8 percentage points (leverage ratio) and 2.3 percentage points (risk-weighted). Taking the rebates into account reduces the gone-concern requirements to 4.2% (leverage ratio) and 12.0% (risk-weighted).¹⁷

Consultation on gone-concern loss-absorbing requirements for individual group entities

An effective resolution requires that gone-concern loss-absorbing capacity is sufficient not only at a consolidated

16 In the grandfathering perspective, the relevant ratios are lower than in the look-through perspective because LT CoCos with AT1 capital quality and a first call date after 1 January 2020 are eligible for inclusion as going-concern capital in the grandfathering perspective, and cannot therefore simultaneously be used to meet the requirements on gone-concern loss-absorbing capacity.

17 The TBTF2 regulations stipulate that, in the case of gone-concern requirements, FINMA can grant rebates in light of measures taken to improve overall resolvability, provided that strict conditions are met (cf. art. 133 Capital Adequacy Ordinance, CAO). Moreover, art. 132 CAO states that gone-concern requirements can be reduced if the banks meet these requirements with Tier 1 capital instruments, which include certain CoCos. However, applying these two types of reductions must not cause the gone-concern requirements to fall below international requirements. In this report, reductions due to the use of CoCos to meet these requirements are not included.

group level, but also at the level of individual group entities. From the Swiss perspective, this principle is important for subsidiaries with systemically important functions, as well as for the parent companies of the two big banks (Credit Suisse AG and UBS AG). These parent banks are domiciled in Switzerland and contain key business activities, such as investment banking or foreign wealth management. Moreover, they manage liquidity for the whole group and source a considerable portion of the group's funding from the market. Thus, both their size and their functions mean that they are of central importance for the whole group.

In line with the FSB guidelines,¹⁸ in April 2019 the Swiss Federal Council initiated a consultation on a proposal to ensure sufficient gone-concern loss-absorbing capacity, particularly in the parent banks and in the Swiss units that perform systemically important functions. The SNB supports the proposed requirements and regards them as necessary, given the high costs of recapitalisation or resolution observed in banking crises both domestically and abroad.

Funding in resolution: work is in progress

A crucial element in the successful resolution of a big bank is the availability of sufficient funding during preparations for and in the phase immediately after a bail-in, to ensure that systemically important functions can be maintained without interruption until market confidence has been fully restored.

In accordance with FSB guidelines, resolution funding plans are being developed that set out the strategy, key actions and measures that would be employed to address liquidity stress in resolution.¹⁹ FINMA, as the home

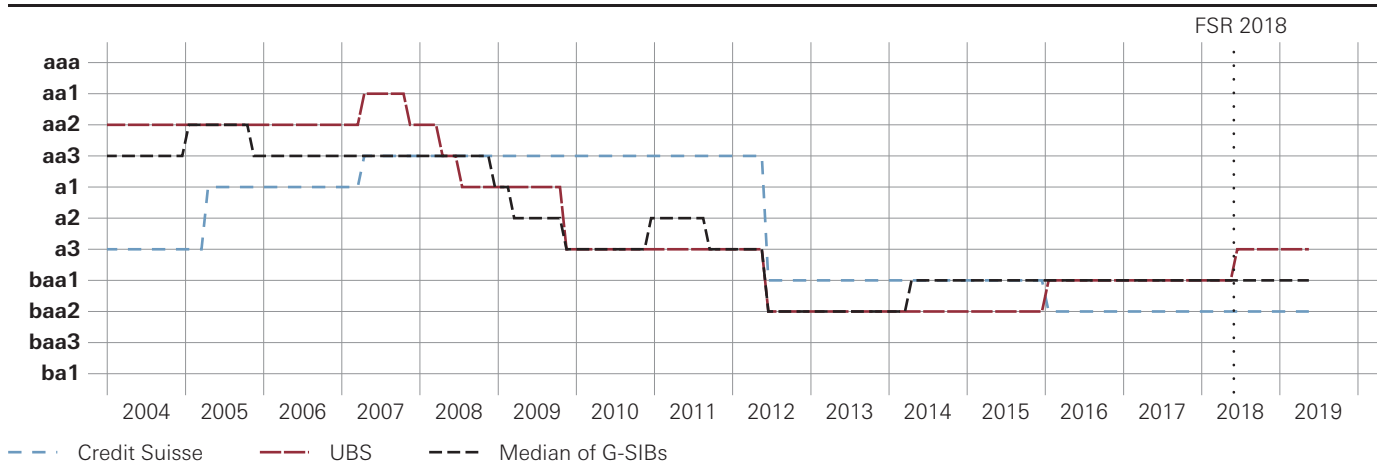
18 Cf. FSB, *Guiding Principles on the Internal Total Loss-absorbing Capacity of G-SIBs ('Internal TLAC')*, 6 July 2017.

19 Cf. FSB, *Funding Strategy Elements of an Implementable Resolution Plan*, 21 June 2018.

INTERNATIONAL COMPARISON OF STAND-ALONE RATINGS

Moody's, baseline credit assessment

Chart 13



Sources: Bloomberg, Moody's

GONE-CONCERN CAPACITY RATIOS AND REQUIREMENTS

Table 2

	Credit Suisse		UBS		Requirement ¹
	Q1 2018	Q1 2019	Q1 2018	Q1 2019	
TBTF2 ratios (look-through, in percent) ²					
TBTF2 gone-concern capacity ratio	15.0	15.2	14.8	15.1	12.0
TBTF2 gone-concern leverage ratio	4.4	4.9	4.3	4.4	4.2
TBTF2 ratios (with grandfathering as at 1 January 2020, in percent) ³					
TBTF2 gone-concern capacity ratio	13.4	13.6	13.9	14.2	12.0
TBTF2 gone-concern leverage ratio	3.9	4.4	4.0	4.2	4.2
Levels (look-through, in CHF billions)					
High-trigger Tier 2 contingent capital (HT T2 CoCos)	0.0	0.0	0.0	0.0	–
Low-trigger contingent capital (LT CoCos)	8.7	8.3	10.4	9.1	–
Of which additional Tier 1 (LT AT1 CoCos)	4.7	4.7	2.3	2.4	–
Of which Tier 2 (LT T2 CoCos)	4.0	3.5	8.1	6.8	–
Bail-in instruments ⁴	32.0	36.0	27.1	31.1	–
TBTF RWA	272	291	254	266	–
TBTF total exposure	932	902	882	907	–

1 The gone-concern requirements for the two big banks take into account rebates granted by FINMA due to banks' efforts to improve resolvability. On a look-through basis, these rebates amount to 0.8 percentage points (leverage ratio) and 2.3 percentage points (risk-weighted), relative to a requirement of 5% (leverage ratio) and 14.3% (risk-weighted). Further reductions due to the usage of LT CoCos to meet these requirements are not included.

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, gone-concern capacity consists of HT CoCos with Tier 2 capital quality, LT CoCos and bail-in instruments.

3 The ratios are calculated taking into account the grandfathering clause applicable from January 2020: LT CoCos with Tier 1 capital quality and a first call date after 1 January 2020 are counted as going-concern capital, whereas LT CoCos with Tier 1 capital quality and a first call date before 1 January 2020 and Tier 2 CoCos are counted as gone-concern instruments.

4 Including non-Basel III-compliant capital instruments of CHF 0.0 billion (Q1 2018) and CHF 0.5 billion (Q1 2019) for Credit Suisse, and CHF 0.7 billion (Q1 2018 and Q1 2019) for UBS.

Sources: Big banks' disclosures, SNB calculations

resolution authority, is leading this work, in cooperation with the banks, the SNB and foreign host resolution authorities. An important condition for a credible plan is that the funding needs in resolution are adequately estimated – for the group and for its material operating entities. Banks need to acquire the capability to monitor and report liquidity resources and funding needs in a timely manner.

Taking account of international standards, FINMA is assessing the two big banks' liquidity needs under possible crisis scenarios and comparing them with the currently available liquidity reserves.²⁰ As stated in the FSB guidelines, the assessment should consider that the environment which accompanies resolution is likely to be highly stressed. The bank itself, even once recapitalised, will likely remain under liquidity stress due to market volatility and an asymmetry of information regarding the bank's viability.

FINMA's review of the two big banks' emergency plans

The big banks have achieved meaningful progress in resolution planning since the financial crisis.²¹ In particular, both banks have established Swiss bank subsidiaries to house their systemically important functions and have set up separate service companies to improve operational independence in a crisis.

In 2018, FINMA reviewed the two big banks' emergency plans based on the criteria set out in the Banking Ordinance, and it disclosed to the banks the areas where additional improvements are necessary. According to FINMA, further efforts by the big banks are required to demonstrate that systemically important functions can be maintained without interruption.²² In particular, this

²⁰ Cf. FINMA, *Annual Report*, 2018, p. 106.

²¹ *Ibid.*, p. 103.

²² *Ibid.*, p. 107.

concerns reducing financial interdependencies within the group and closing liquidity gaps in the event of a crisis. FINMA will closely monitor the banks in their work and will review their emergency plans again in the second half of 2019.

According to the Banking Ordinance, the deadline for the completion of a credible and workable emergency plan is end-2019 for both big banks.

3.2 DOMESTICALLY FOCUSED COMMERCIAL BANKS

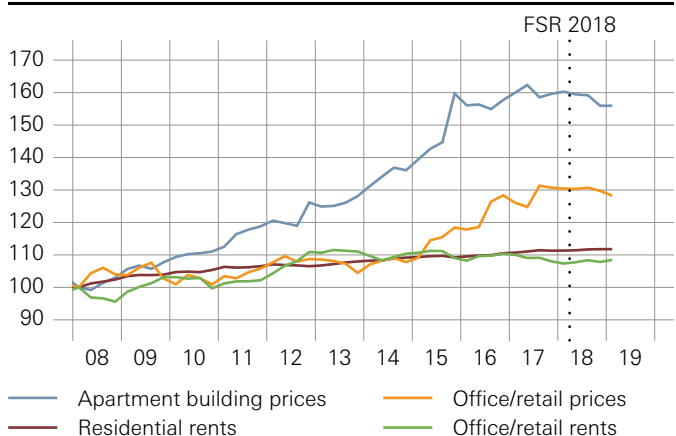
In 2018, domestically focused banks further increased their exposure to the Swiss mortgage and real estate markets. Mortgage growth at these banks has remained strong. Affordability risks are high and they have continued to rise as measured by the LTI ratio. A growing share of new mortgages in the residential investment property segment is financing properties in regions with high vacancy rates. Furthermore, the latest loan vintages in this segment appear particularly vulnerable to shocks due to the accumulation of high affordability and LTV risks. Meanwhile, interest rate risk from maturity transformation has remained high. These developments have occurred against the backdrop of persistent imbalances on the mortgage and real estate markets.

Despite the ongoing pressure on profitability exerted by low interest margins, domestically focused banks' capital situation has improved slightly and remains adequate for most banks. The leverage ratio and the risk-weighted ratio increased slightly in 2018 and are significantly above the regulatory minima.

Moreover, SNB stress test results suggest that most domestically focused banks' capital surpluses, relative to the regulatory minimum requirements, are large enough to absorb the losses under the relevant adverse scenarios. However, such adverse scenarios would lead to the depletion of a sizeable proportion of these surpluses; in

INVESTMENT REAL ESTATE: PRICES AND RENTS¹

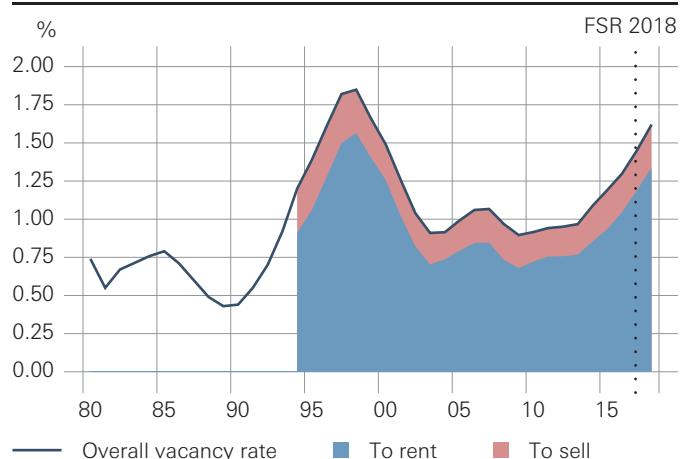
In nominal terms, Q1 2008 = 100 Chart 14



¹ Transaction prices and existing rents (residential) / asking rents (office/retail). Sources: SFSO, Wüest Partner

RESIDENTIAL VACANCY RATE

Vacant dwellings relative to total number of dwellings Chart 15



Sources: SFSO, SNB calculations

addition, there is inherent uncertainty in the output of stress tests. These capital surpluses should be preserved going forward, to help ensure that banks are able to fulfil their role as credit providers to the real economy even under adverse conditions. Both regulatory requirements and the prudent stance of many banks towards capital adequacy play a key role in maintaining these surpluses.

The next section examines the exposures of domestically focused banks and the impact of adverse scenarios. Chapter 3.2.2 provides an assessment of these banks' resilience, focusing on the development of regulatory capital figures and an appraisal of the banks' capital situation from an economic point of view. The chapter includes a separate discussion of the TBTF requirements for DF-SIBs.

3.2.1 EXPOSURES AND IMPACT OF SCENARIOS

Moderate volume growth on the mortgage market, heterogeneous price growth on the real estate market
Mortgage growth in the banking sector as a whole picked up in 2018, but remained moderate. Year-on-year mortgage growth was 3.3% at end-2018 (end-2017: 2.7%).²³ The pickup was mainly due to an increase in growth, from low levels, at the big banks.

Meanwhile, transaction prices for single-family houses and apartments suggest that momentum on the owner-occupied residential real estate market decreased slightly in 2018. Between end-2017 and end-2018, year-on-year growth in transaction prices decreased from 4.0% to 3.4% for single-family houses, and from 3.3% to 1.7% for apartments, although there is some heterogeneity across price indices. For apartments in particular, asking prices

are signalling a decline. In the residential investment segment, where there are mounting signs of overcapacity, transaction prices for apartment buildings decreased by 2.3% in 2018.

Imbalances persist on mortgage and residential real estate markets

Since the onset of the period of low interest rates in 2008, several years of strong growth in both bank credit and real estate prices have resulted in the build-up of imbalances on the mortgage and residential real estate markets.

On the mortgage market, imbalances persist. Over the last decade, mortgage growth has significantly outpaced income growth in Switzerland. As a result, the mortgage-to-GDP ratio has increased substantially, reaching high levels by both historical and international standards. In 2018, the mortgage-to-GDP ratio stabilised. By contrast, the difference between this ratio and its long-term trend, another measure of imbalances, has decreased further. This reflects moderate mortgage volume growth and robust GDP growth.

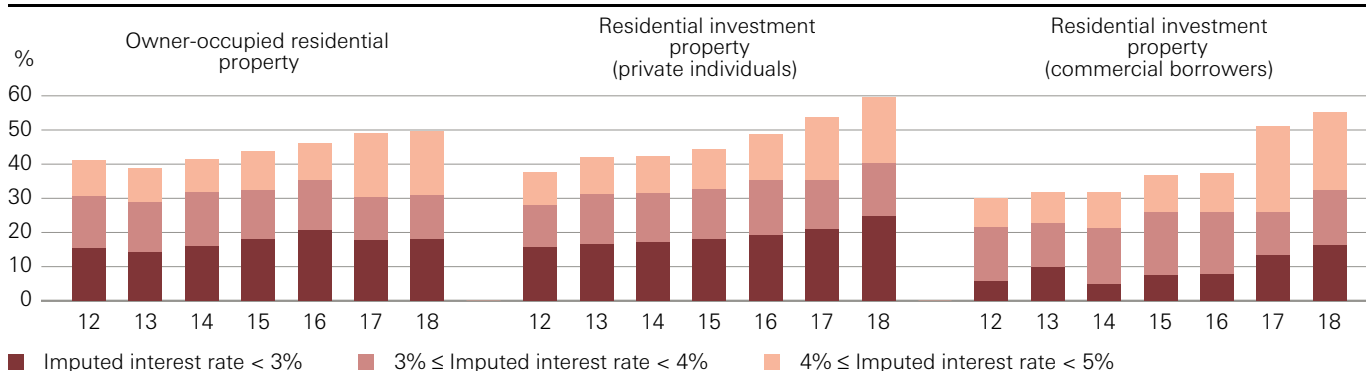
Meanwhile, on the residential real estate market, developments in the single-family house and apartment segments suggest that imbalances in the owner-occupied segment have increased slightly. While transaction prices for apartments have risen broadly in line with fundamental factors such as rents, GDP and population growth, transaction prices for single-family houses have increased faster than these factors can explain.

In the residential investment property segment, the risk of substantial price corrections in the future remains particularly high, despite the slight decrease in prices observed in 2018. Since the beginning of the period of low interest rates in 2008, transaction prices for apartment buildings have grown much more than rents (cf. chart 14),

²³ Mortgage growth at insurers (excluding reinsurers) amounted to 3.7% in 2018. At pension funds, for which the latest available figures are for the year 2017, mortgage growth was substantially higher at 16.8%. Despite the strong growth at pension funds, the overall market share of non-banks, i.e. insurers and pension funds, in the domestic mortgage market remains low, at around 4% for insurers and around 1.5% for pension funds.

LOAN-TO-INCOME OF NEW MORTGAGE LOANS¹

Proportion where imputed costs exceed rents (inv. prop) or one-third of income (owner-occ.) at an imputed interest rate of up to 5%² Chart 16



¹ From 2017 on, data from the 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 between 3% and 4%. The pale red shaded area shows the additional proportion for an imputed interest rate between 4% and 5%.

Source: SNB

resulting in historically low initial yields.²⁴ Furthermore, brisk construction activity in rental apartments over recent years has led to rising vacancy rates (cf. chart 15). The high level of vacant dwellings indicates an oversupply.

The risk of price corrections in the residential investment segment could materialise particularly if interest rates increase. In that case, investment property will only be sought at higher initial yields; growth in initial yields, in turn, is likely to result mainly from falling prices, rather than rising rents. Although rental law establishes a close link between rents and interest rates, apartment oversupply will hamper the pass-through of rising interest rates to rents. Moreover, since 2008 the pass-through of lower interest rates to rents appears to have been incomplete. This will also impede rent hikes as, according to rental law, earlier declines in interest rates have to be taken into account.

As a consequence, even a return of interest rates and yields to moderate levels could result in significant price declines in the residential investment segment. Assuming, for illustrative purposes, the extreme case of rents remaining constant, transaction prices would have to decline by about one-third in order to return initial yields for apartment buildings to the levels observed in 2008.

In the commercial investment segment, there are no conclusive signs of imbalances. Since 2008, transaction prices for office and retail space have also risen (cf. chart 14), while initial yields for commercial real estate are likewise at very low levels. As a result, there is a risk of price corrections in this segment too. However, developments in commercial investment since 2008 appear moderate compared to those in residential investment.

²⁴ The initial yield of an investment in real estate is the ratio of rental return to transaction price.

Strong mortgage growth at domestically focused banks

Mortgage growth at domestically focused banks continued to be strong and was broadly unchanged at 4.2% at end-2018 (end-2017: 4.0%). As such, it remained well above the mortgage growth of big banks and of the banking sector as a whole. Mortgage volume at domestically focused banks has been growing significantly faster than at big banks since the onset of the global financial crisis in 2007.

Increasing LTI ratios and broadly unchanged LTV ratios for new mortgages

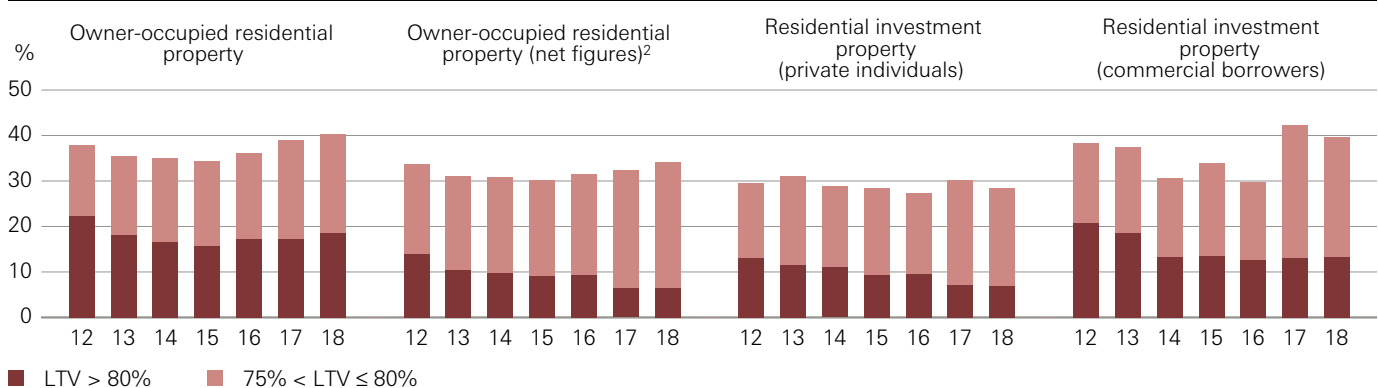
According to the 'Survey on new mortgages' conducted by the SNB,²⁵ affordability risks as measured by the LTI ratio increased in 2018, driven by developments in the residential investment property segment (cf. chart 16). The share of new mortgages with a high LTV ratio remained broadly unchanged.

²⁵ The quarterly survey covers the 26 largest banks in the mortgage market (including the two big banks), with a cumulative market share of almost 90%. Banks report information on newly approved mortgage loans financing real estate in Switzerland for three types of business transactions: (i) financing the purchase of real estate; (ii) refinancing an existing loan from another lender; or (iii) financing the construction of real estate. Information is collected at the loan level (e.g. type of borrower, type of business transaction, credit limit and usage, type of collateral, income), at the loan tranche level (e.g. interest rate product, interest rate level, interest rate and capital commitment) and at the real estate level (e.g. type, location, value, net rent). Based on these data, LTV and LTI ratios are calculated in the segments of owner-occupied residential property (2018: CHF 30.7 billion) and residential investment property held by private individuals (CHF 10.5 billion) or commercial borrowers (CHF 9.4 billion). The values shown in the chart are aggregated over the calendar year according to mortgage lending volume. This survey has been conducted since Q1 2017 as a regular SNB survey. It is based on a predecessor mortgage survey launched by the SNB in 2011. In comparison to its predecessor, the revised survey collects data on a loan-by-loan basis for a wider range of characteristics and requires banks to comply with higher data quality standards.

LOAN-TO-VALUE OF NEW MORTGAGE LOANS¹

Proportion of new loans with LTV over 80% or between 75% and 80%

Chart 17



¹ From 2017 on, data from the revised 'Survey on new mortgages' are shown.

² When calculating net figures, pledges from pillar 2 and 3a pension funds used as part of the scheme to encourage home ownership are counted as additional collateral in the LTV calculation; moreover, banks' internal valuations are used as the value of the pledged property.

Source: SNB

From 2017 to 2018, the share of new mortgages where imputed costs²⁶ would no longer be covered by net rents at an interest rate of 5% rose from 54% to 59% in the segment of residential investment property held by private individuals, and from 51% to 55% in the segment of residential investment property held by commercial borrowers. In the owner-occupied residential property segment, the share of new mortgages where imputed costs would exceed one-third of gross wage or pension income at an interest rate of 5% remained broadly unchanged at 50% (2017: 49%).

In 2018, the share of new mortgage loans with an LTV ratio²⁷ of more than 80% was similar to that in 2017 (cf. chart 17). Depending on the segment considered, this share ranged between 7% and 19%. Meanwhile, the share of new mortgages with an LTV ratio of between 75% and 80% decreased slightly to 21–28%, with more than half of the loans in this LTV bucket concentrated between 79% and 80%.

When interpreting these figures, it should be borne in mind that they apply to new mortgages and are not representative of the LTIs and LTVs for the stock of outstanding mortgages. Due to amortisation in particular, the share of outstanding mortgages with a high LTI or LTV ratio is lower. While there are no data on the exact distribution of

LTIs and LTVs for outstanding mortgages, refinanced²⁸ mortgages give an indication of these distributions within outstanding mortgages. These data suggest that the share of high-LTI mortgages (based on a 5% imputed interest rate) in the stock lay between 42% and 43% (compared to 50–59% for all new mortgages) in 2018, depending on the segment. Moreover, according to this proxy, the share of high-LTV mortgages (LTV ratio exceeding 80%) in the stock ranged between 5% and 9% (compared to 7–19% for all new mortgages).

Recent mortgage vintages in the residential investment property segment are vulnerable

The sustainability of current mortgage lending policy in the residential investment property segment is a matter of concern. Three elements play a key role in this assessment.

First, over the last few years, the increase in affordability risks in the residential investment property segment has been driven by growth in the share of mortgages with very high LTIs (cf. dark red and red shaded areas in chart 16). The share of new mortgages for which imputed costs would no longer be covered by net rents at an interest rate of up to 3% or 4% rose significantly in 2018 in this segment compared to 2017.²⁹ Consequently, the vulnerability of the most recent mortgage vintages is high. For instance, a return of interest rates to levels prevailing in 2008 could lead to a substantial increase in default rates on these vintages.

Second, a growing share of the new mortgages is financing investment properties in regions with high vacancy rates. In 2018, 31% of new mortgages (2017: 23%, cf. chart 18)

26 The imputed costs used for this estimate comprise the imputed interest rate (5%) plus maintenance and amortisation costs (1% each). The average mortgage rate between 1960 and 2008 (i.e. prior to the beginning of the low interest rate period) is almost 5%. When interpreting these figures, it should be borne in mind that they are based on a standardised definition of income and hence can deviate from a bank's internal measure of affordability risk based on its internal definitions. The standardised definition of income uses only the borrower's employment or pension income. Other elements which have a positive impact on affordability (e.g. bonuses and investment income), as well as those which have a negative impact (e.g. leasing or interest payments on other bank loans), are not taken into consideration.

27 The reported LTV is the ratio between the mortgage and the value of the pledged property. The mortgage is the credit limit approved by the bank. The value of the pledged property is the market value or – for net figures – the bank's internal valuation. At most banks, market value and internal valuation differ only slightly.

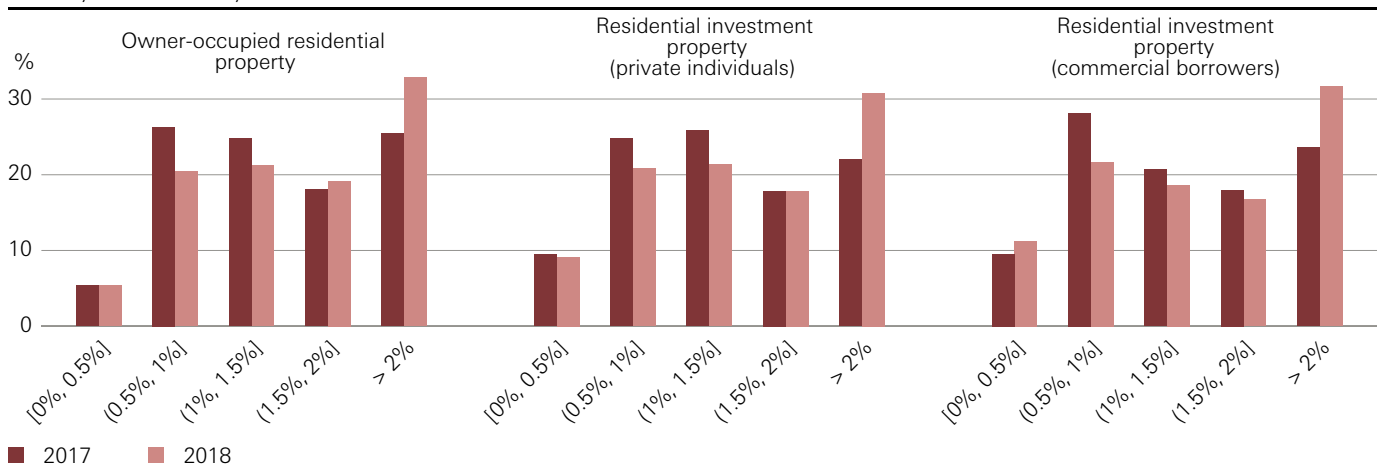
28 Refinanced mortgages denote existing loans which are refinanced by another lender. They are counted as new mortgages in the survey.

29 For instance, the share of new mortgages in the investment property segment held by private individuals for which imputed costs would no longer be covered by net rents at an interest rate of 3% or 4% increased from 21% to 25% and from 35% to 40% respectively.

DISTRIBUTION OF NEW MORTGAGES BY VACANCY RATE

Vacancy rate buckets by district

Chart 18



Sources: SFSO, SNB

were granted in districts with vacancy rates over 2%. Such vacancy rates are high by historical standards (cf. chart 19). This pattern is visible for both low and high-LTI mortgages. It reflects the further increase in the number of districts with high vacancy rates, but is also indicative of banks' growing risk tolerance.

Third, as noted in the last *Financial Stability Report* (cf. *Financial Stability Report*, 2018, pp. 27–28), around 25% of new mortgages in the residential investment segment are characterised by both high LTV and high LTI risks (cf. chart 20).³⁰ This accumulation of risks increases the likelihood that, in the event of an interest rate shock, not only the default rates but also the loss rates on these loans would be substantial. Indeed, an increase in interest rates might result in significant price declines for investment property (cf. 'Imbalances persist on mortgage and residential real estate markets' on p. 19). In that case, LTV and LTI risks will tend to materialise simultaneously.

The segment of residential investment property held by commercial borrowers, in particular, would be exposed to a change in interest rates or a drop in prices. In this segment, the share of new mortgages with an average repricing maturity shorter than 12 months is comparatively high (broadly unchanged at 42% in 2018, cf. chart 21). Moreover, in this segment, banks are more likely to demand additional collateral from borrowers (margin calls), or to include a higher risk premium in the lending rate, in the event of a drop in prices. In principle, leveraged investors in all segments of the residential real estate market may face margin calls. However, banks are more likely to adopt a strict margin call policy for commercial borrowers due to their limited liability.

Further narrowing of interest rate margin and lower return on assets

Domestically focused banks' average interest rate margin³¹ on all outstanding claims decreased by another 4 basis points (or 3.5%) to 1.17% in 2018 (cf. chart 22). This is mainly attributable to a further decline in the average interest rate on outstanding loans to 1.45% in 2018 (2017: 1.53%). Average lending rates continued to fall in 2018 as loans taken out in the past were renewed and new mortgages were granted at very low rates. Meanwhile, interest rates on sight and savings deposits of retail customers remained almost constant at levels close to zero.

Despite the decline in the interest rate margin, in 2018 domestically focused banks maintained their net interest income (NII) at similar levels to 2017. This is due to the fact that the volume of interest-bearing positions (approximated as the sum of mortgage claims, claims

against customers and financial claims) increased by around 3.5%, offsetting a decrease of similar magnitude in the interest rate margin.

In 2018, the profitability of domestically focused banks as measured by average return on assets³² decreased significantly to 0.37% (2017: 0.42%, cf. chart 23). This was primarily driven by lower trading and investment income (subsumed under the 'other' category in chart 23) as well as lower NII relative to total assets. The current level of return on assets is low by historical standards.

The return on assets at the three DF-SIBs – Zürcher Kantonalbank (ZKB), Raiffeisen Group and PostFinance – also decreased, although to varying extents. Return on assets at Raiffeisen Group and PostFinance declined substantially. For Raiffeisen, it receded to 0.24% (2018) from 0.40% (2017). This decrease reflects larger value adjustments on participations, depreciation on tangible and intangible assets, and higher loss provisions. For PostFinance, return on assets dropped to 0.06% in 2018 (2017: 0.11%), reaching its lowest level since 2013.³³ This was driven by a large fall in both the interest rate margin and the margin from investment business.³⁴ Finally, return on assets at ZKB decreased slightly to 0.47% (2018) from 0.48% (2017), mainly due to the declining interest rate margin.

Banks' margins and profitability likely to remain under pressure

Domestically focused banks' margins and profitability will remain under pressure as long as the current low interest rate environment persists. This applies,

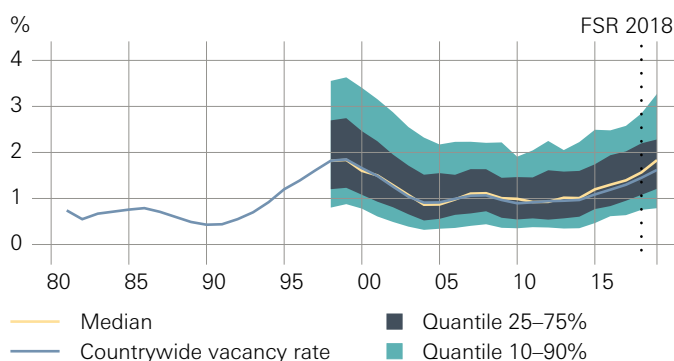
³² Annual profits or losses divided by total assets.

³³ PostFinance obtained a banking licence in 2013 and, from then on, started reporting according to the Swiss accounting rules for banks.

³⁴ Cf. income statement in PostFinance's annual report for 2018, p. 60.

DISTRIBUTION OF RESIDENTIAL VACANCY RATES BY DISTRICT¹

Vacant dwellings relative to total number of dwellings Chart 19



¹ Based on data at municipal level (not available prior to 1997). The aggregation of municipalities into districts is based on municipalities that existed in 2018; municipalities which were merged into others are not taken into account. Source: SFSO

³⁰ Loans in the residential investment property segment that are characterised by an LTV ratio above 75% (measured in net terms) and where imputed costs exceed rents at an interest rate of 5%.

³¹ Interest rate margins are approximated as net interest income divided by the sum of mortgage claims, claims against customers and financial claims.

in particular, to banks' asset margins³⁵ on new mortgages. Asset margins for new mortgages with medium to long maturities decreased further in 2018 and returned close to the level prevailing before the introduction of negative interest rates. This development is indicative of the competitive pressure – both between banks and from non-banks – in the mortgage market. The flatness of the yield curve is an additional source of pressure on banks' margins and profitability.

Moreover, assuming unchanged repricing maturities, mortgages and other loans taken out in the past will be renewed at a lower interest rate. Over the last decade, a large share of the banks' mortgage portfolio has already been rolled over at comparatively low rates. The potential for further decreases, however, remains significant. At end-2018, the average interest rate on outstanding mortgages was 1.45%. A substantial share of outstanding loans could thus still be renewed at a lower interest rate. In 2018, new mortgages were granted at an average rate of 1.21%.

Domestically focused banks exposed to large upward interest rate shocks

Interest rate risk can result from a mismatch between the repricing maturities of a bank's assets and liabilities. Banks typically use short-term liabilities to refinance long-term loans. Because of such maturity transformations, interest rates on assets are locked in for longer than interest rates on liabilities. If a bank is in this position, a rise in the interest rate level will reduce the present value of assets more substantially than the present value of liabilities, thereby reducing the net present value (NPV) of the bank.

In 2018, interest rate risk from maturity transformation – as measured by the impact of a 200 basis point upward interest rate shock on the banks' NPV relative to Tier 1 capital – remained broadly unchanged at a high level. This observation is valid irrespective of whether banks' internal assumptions for positions without contractually defined repricing maturities (non-maturity positions) or fixed assumptions are used.

Based on banks' internal assumptions for non-maturity positions, banks' NPV would have declined by 14.0% of Tier 1 capital on average if interest rates had suddenly risen by 200 basis points at the end of 2018 (2017: 14.1%; cf. chart 24, blue line). Based on time-invariant assumptions that are the same for all banks, the interest rate risk appears substantially higher (cf. chart 24, red line). The difference is largely because, on average, the repricing maturities currently applied by banks exceed the more conservative fixed assumptions for sight and savings deposits. In the current environment of low interest rates, assumptions about the behaviour of non-maturity deposits are particularly relevant and their estimation marked by high uncertainty (cf. *Financial Stability Report*, 2018, pp. 30–31).

The NPV analysis implies that the positive contribution of maturity transformation to banks' net interest income (structural margin) would decline significantly over time if interest rates increased suddenly, even turning negative in the event of a large upward shock. Nonetheless, in the current environment, banks would benefit from the restoration of liability margins³⁶ when interest rates rise, something that is not fully accounted for in the NPV analysis (cf. *Financial Stability Report*, 2016, pp. 26–30). In the case of a large upward shock, the reduction in the structural margin would outweigh the impact of the

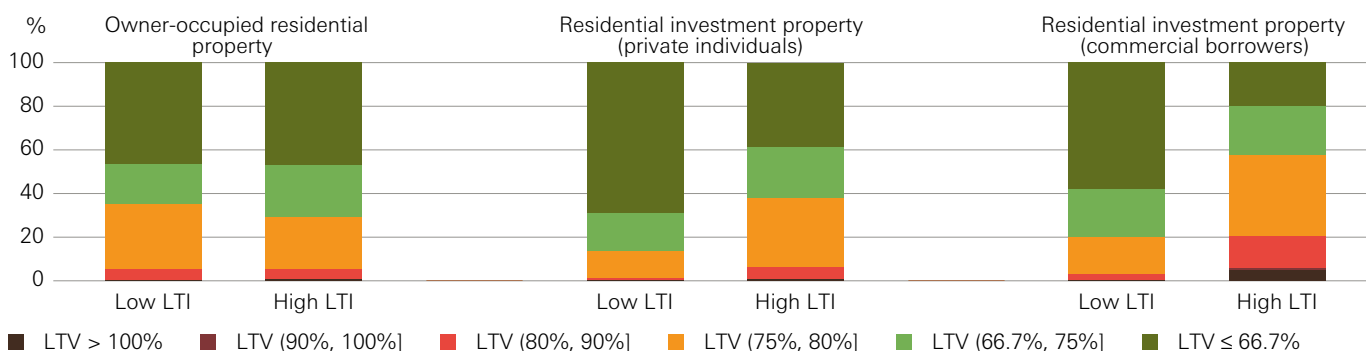
³⁵ The asset margin is the difference between the interest on the asset and that on an alternative asset with the same maturity on the capital market.

³⁶ The liability margin is the difference between alternative funding costs for the same maturity on the capital market and the interest paid on the liability.

LTV BREAKDOWN (IN NET TERMS¹) AS A FUNCTION OF LTI OF NEW MORTGAGE LOANS²

Proportion of new loans (2018) with low (left) and high (right) LTI, scaled to 100%

Chart 20



¹ When calculating net figures, pledges from pillar 2 and 3a pension funds used as part of the scheme to encourage home ownership, as well as other forms of collateral, are taken into account in the LTV calculation; moreover, banks' internal valuations are used as the value of the pledged property.

² Proportion of mortgages where imputed costs are less (left-hand bar) or more (right-hand bar) than net rents (inv. prop) or one-third of income (owner-occ.) at an interest rate of 5%.

Source: SNB

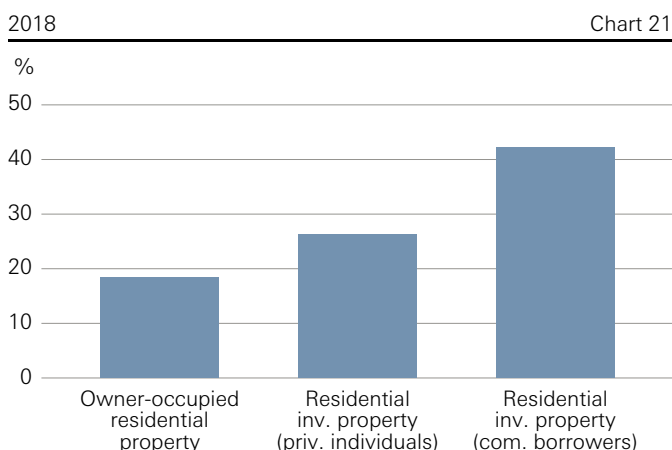
restored liability margin and lead to a significant decline in net interest income.

Substantial losses under interest rate shock scenario

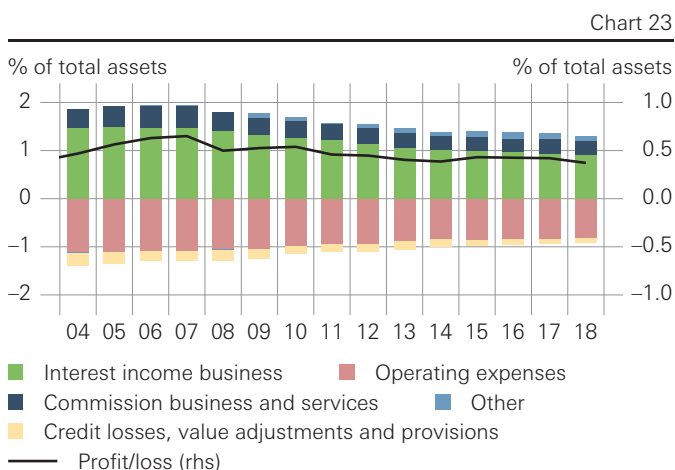
Two of the scenarios discussed in chapter 2.2 are of particular relevance for domestically focused banks: the interest rate shock scenario and the protracted euro area recession scenario.

Under the interest rate shock scenario, most domestically focused banks would experience substantial losses: aggregate cumulative earnings would be negative. A sharp increase in mortgage interest rates combined with a pronounced drop in real estate prices 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, despite the restoration of their liability margins.

PROPORTION OF NEW MORTGAGE LOANS WITH AN AVERAGE REPRICING MATURITY SHORTER THAN 12 MONTHS



RETURN ON ASSETS OF DOMESTICALLY FOCUSED BANKS



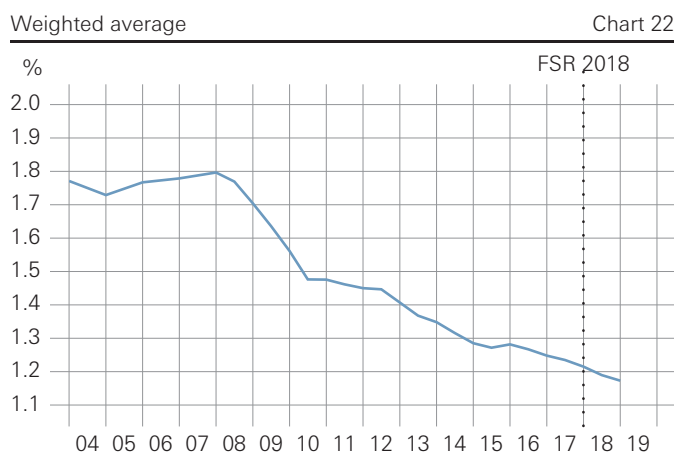
The protracted euro area recession scenario would also lead to losses at some domestically focused banks. First, earnings would decrease significantly, mainly reflecting an erosion of interest margins due to a period of persistently negative interest rates. Second, a severe recession extending over several quarters would result in a considerable increase in default rates on claims against corporates and financial institutions. Overall, and for most banks, the negative impact of this scenario would be smaller than that of the interest rate shock scenario.

3.2.2 RESILIENCE

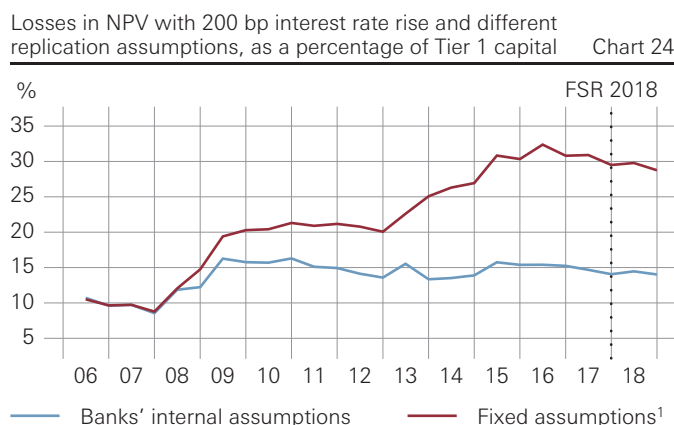
Capital ratios significantly above regulatory minima

Overall, the regulatory capital situation of domestically focused banks has slightly improved compared to last year. In 2018, their available capital increased faster than the size of their balance sheets and their RWA. Hence, despite pressure on profitability from low interest rate margins, and the continued expansion of their balance sheets, these banks' average Tier 1 leverage ratio rose

INTEREST RATE MARGIN OF DOMESTICALLY FOCUSED BANKS



INTEREST RATE RISK OF DOMESTICALLY FOCUSED BANKS



¹ Assumed repricing maturities of 1.5 years for savings deposits and variable rate mortgage claims, and 15 days for sight deposits.

to 7.2% at end-2018 (end-2017: 7.0%; cf. chart 25). The growth in the capital base was mainly the result of profit retention. The risk-weighted capital ratio increased in terms of total eligible capital (2017: 17.9%; 2018: 18.0%) and in terms of Tier 1 capital (2017: 17.0%; 2018: 17.3%). The risk-weighted ratio is high by historical standards (cf. chart 25).

Measured against the regulatory minimum requirements, these banks' capital surpluses are substantial. At end-2018, all domestically focused banks met the Basel III minimum requirement of 8% for the risk-weighted total capital ratio, and complied with the Basel III minimum leverage ratio requirement of 3%. Typically, they had capital surpluses of 5 to 12.5 percentage points above the 8% risk-weighted minimum (cf. chart 26) and 3 to 6 percentage points above the 3% leverage ratio minimum (cf. chart 27).

At end-2018, all domestically focused banks also complied with the additional capital requirements associated with the CCyB and the institution-specific capital buffer target levels set by the Capital Adequacy Ordinance (CAO).³⁷ Depending on the bank, these additional capital buffer requirements range between 2.9% and 7.6% of RWA.

In this context, it should be stressed that these banks' capital requirements will undergo changes over the coming years as the finalised Basel III package of reforms is implemented in Switzerland. Both the design and the calibration of capital requirements for residential mortgages under the standardised approach will be revised in this process, and this will affect capital requirements for a core business of most domestically focused banks.

Under the new rules, income-producing residential real estate (IPRRE) mortgages will be subject to higher risk weights than owner-occupied mortgage lending, reflecting differences in riskiness. In addition, the risk sensitivity of capital requirements for residential mortgages (owner-occupied and income-producing) will be increased as regards LTV ratios.³⁸ The intended impact of these new rules is to enhance the risk sensitivity of capital requirements. Therefore, capital requirements might increase for some banks and decrease for others, depending on the composition of their assets. From a financial stability perspective, it is important to preserve the capitalisation of the banking sector at its current, adequate level.

DF-SIBs also comply with TBTF going-concern requirements

DF-SIBs are subject to the additional going-concern and gone-concern requirements defined by TBTF2. At end-2018, the three DF-SIBs were fully compliant with the look-through TBTF2 going-concern risk-weighted capital and leverage ratio requirements (cf. table 3). DF-SIBs' leverage ratios exceeded the 3% minimum requirement by between 2 percentage points (PostFinance) and 4.6 percentage points (Raiffeisen Group).

Compared to 2017, the going-concern capital ratios of DF-SIBs have increased. The increase in the capital base was partly driven by profit retention, but other factors played a significant role too. For PostFinance, as in past years, a linear reduction of goodwill over ten years contributed positively to the capital base (CET1).³⁹ For ZKB, part of the increase in the capital base is due to the reduction of provisions for other risks.⁴⁰

³⁷ These include the capital buffer target levels set according to supervisory category (cf. CAO), as well as the institution-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.

³⁸ Cf. BCBS, *Basel III: Finalising post-crisis reforms*, December 2017.

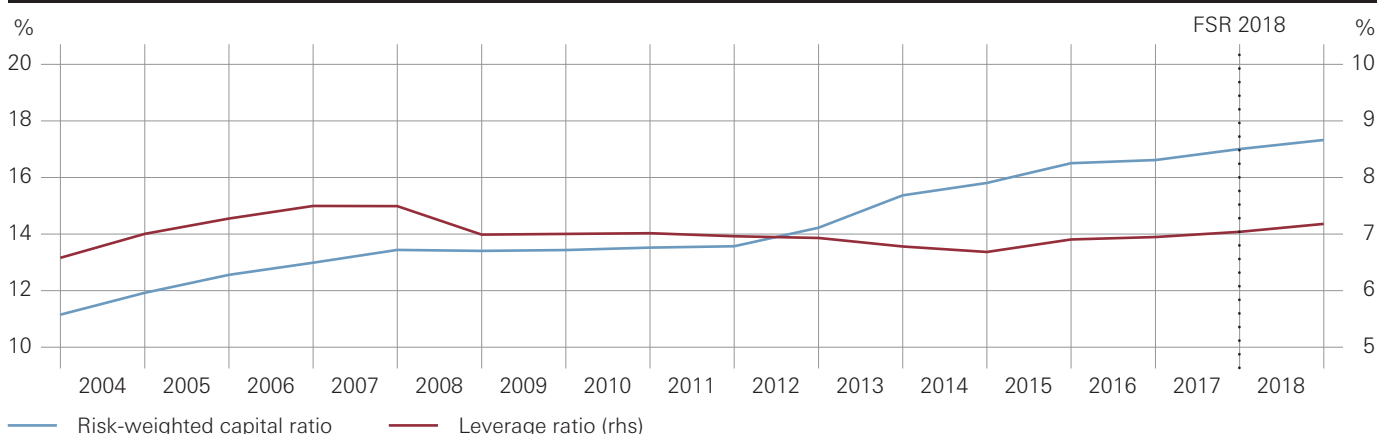
³⁹ Cf. PostFinance's capital adequacy disclosure as at 31 December 2018, p. 14.

⁴⁰ Cf. ZKB's annual report for 2018, p. 114, Exhibit 16.

CAPITAL RATIOS OF DOMESTICALLY FOCUSED BANKS

Risk-weighted Tier 1 capital ratio and Tier 1 leverage ratio¹

Chart 25



¹ Until 2013, Tier 1 divided by total assets. From 2014, Tier 1 divided by Basel III leverage ratio exposure.

Sources: FINMA, SNB

Gone-concern requirements for DF-SIBs entered into force in 2019

Gone-concern requirements for DF-SIBs entered into force and are being phased in by 2026.⁴¹ Eligible instruments for covering gone-concern requirements include contingent capital and bail-in instruments, excess Tier 1 capital, cantonal state guarantees or similar mechanisms.⁴² 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.

As part of the TBTF requirements, the three DF-SIBs must demonstrate to FINMA that they have credible and workable emergency plans. In conjunction with gone-concern requirements, such emergency plans contribute to the capacity of these banks for recapitalisation or orderly wind-down in a crisis. Hence, credible and workable emergency plans are necessary for maintaining systemically important functions in a crisis. At end-2018, work on the three DF-SIBs' emergency plans was still in progress.

Stress tests highlight importance of capital surpluses

Regulatory capital ratios may overestimate the actual resilience of domestically focused banks in the current environment, as they do not fully capture risks associated with exposures to the mortgage and real estate markets and to movements in interest rates. In particular, risk-weighted capital ratios only partially account for the imbalances on Swiss mortgage and real estate markets (cf. *Financial*

41 Cf. Federal Council, Capital Adequacy Ordinance, version of January 2019 (*Eigenmittelverordnung*, not available in English).

42 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 requirement is 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.

Stability Report, 2012 to 2014). For this reason, the SNB also assesses the adequacy of domestically focused banks' capital buffers by means of stress tests, with a focus on the interest rate shock scenario and the protracted euro area recession scenario.

Under the interest rate shock scenario, domestically focused banks' losses would deplete a sizeable proportion of their surplus capital. Many banks would fall below the specific capital buffer target levels set by the CAO. Moreover, a number of banks with a significant cumulative market share are projected to fall near or below the regulatory minima, unless they take counteracting measures. By contrast, the protracted euro area recession scenario would only deplete a small proportion of domestically focused banks' surplus capital. Under this scenario, only a few banks would fall below the specific capital buffer target levels set by the CAO or below the regulatory minima.

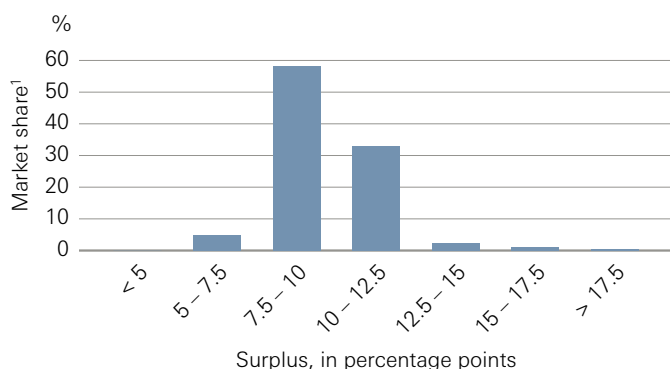
Overall, these results suggest that, owing to the size of their capital surpluses, most banks should be able to continue fulfilling their role as credit providers to the real economy even under such adverse scenarios. This highlights the importance of preserving the current levels of capital adequacy in Switzerland going forward, in particular in the context of the final implementation of Basel III (cf. 'Capital ratios significantly above regulatory minima', p. 24).

Targeted measures are necessary for residential investment property lending

Nominal interest rates have been exceptionally low in Switzerland for a decade. Low rates have softened the impact of the global financial crisis and stabilised inflation. As a side-effect, low interest rates have favoured the build-up of imbalances on the mortgage and residential real estate markets. Such imbalances pose risks to financial stability.

RISK-WEIGHTED SURPLUS CAPITAL OF DOMESTICALLY FOCUSED BANKS

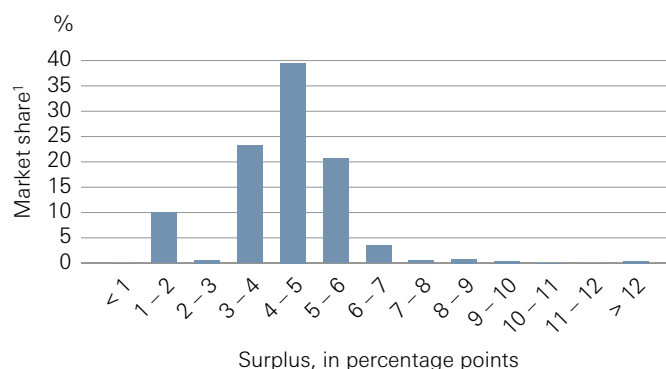
Capital surplus with respect to the Basel III 8% minimum requirement for risk-weighted total capital ratios Chart 26



¹ Share of domestically focused banks' total leverage ratio exposure. Sources: FINMA, SNB

LEVERAGE RATIO SURPLUS CAPITAL OF DOMESTICALLY FOCUSED BANKS

Capital surplus with respect to the Basel III 3% minimum requirement for leverage ratios applicable as of 2018 Chart 27



¹ Share of domestically focused banks' total leverage ratio exposure. Sources: FINMA, SNB

GOING-CONCERN CAPITAL RATIOS AND REQUIREMENTS

Look-through

Table 3

	PostFinance			Raiffeisen Group			ZKB ¹		
	2017	2018	Requirement ²	2017	2018	Requirement ²	2017	2018	Requirement ²
TBTF2 ratios (look-through, in percent) ³									
TBTF2 going-concern capital ratio	17.1	17.6	13.0	16.5	17.5	14.4	17.6	19.0	13.6
TBTF2 going-concern leverage ratio	4.7	5.0	4.5	6.8	7.6	4.6	6.4	6.4	4.5
Basel III ratios (look-through, in percent) ⁴									
Basel III Tier 1 capital ratio	17.1	17.6	8.5	17.0	17.5	9.7	17.6	19.0	9.2
Basel III Tier 1 leverage ratio	4.7	5.0	3.0	7.1	7.6	3.0	6.4	6.4	3.0
Levels (look-through, in CHF billions)									
Tier 1 capital TBTF	5.7	5.9	–	15.9	17.4	–	11.3	11.9	–
Tier 1 capital Basel III	5.7	5.9	–	16.4	17.4	–	11.3	11.9	–
TBTF RWA	33.2	33.8	–	96.3	99.3	–	63.8	62.7	–
TBTF total exposure	121.8	119.4	–	231.7	228.6	–	177.2	185.6	–

1 As at end-2017, ZKB changed to internal models to calculate RWA (F-IRB).

2 Including the CCyB for the risk-weighted requirements.

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

4 The requirement for the Basel III Tier 1 capital ratio comprises the minimum of 4.5% (CET1), the minimum of 1.5% (AT1) and the capital conservation buffer of 2.5% (CET1).

Sources: DF-SIBs' regulatory disclosures

Measures taken between 2012 and 2014⁴³ have helped to contain the build-up of imbalances in the owner-occupied segment. In the residential investment segment, by contrast, risks have increased further. While prices have declined slightly since the last *Financial Stability Report*, vacancy rates and affordability risks in this segment have continued to increase. Should interest rates remain low, incentives to increase risk-taking in the domestic credit and real estate markets will remain substantial for banks, commercial investors and households.

In this context, the SNB remains of the view that targeted measures are necessary for residential investment property lending. As noted in the last *Financial Stability Report*, such measures could be implemented via a renewed revision of the self-regulation guidelines or by regulatory changes, as a complement to FINMA's intensified supervision of particularly exposed banks.

The SNB therefore supports the Federal Council's proposal to increase the risk weights for loan tranches that exceed two-thirds of the residential investment property's lending value. This measure would help maintain banks' resilience against possible corrections of imbalances on the mortgage and real estate markets. Furthermore, it would create incentives to reduce risk-taking in this segment of the mortgage market.

Moreover, the SNB welcomes the Swiss Bankers Association's readiness to consider reducing the LTV ratio and shortening the amortisation period for new loans in the investment property segment through a revision of the self-regulation guidelines. Such a revision could create direct incentives to reduce LTV and affordability risks in this segment of the mortgage market.

Either the revision of the self-regulation guidelines or, alternatively, the regulatory amendment is expected to be implemented later this year and to take effect in early 2020. Meanwhile, the SNB will continue to monitor developments on the mortgage and real estate markets closely, paying particular attention to developments in the residential investment property segment and to banks' risk-taking in mortgage lending. In parallel, the SNB will regularly reassess the need for an adjustment of the CCyB.

⁴³ These measures include stricter capital requirements for high-LTV mortgage loans, revisions of the self-regulation guidelines for mortgage lending in 2012 and 2014, and the activation and subsequent increase of the CCyB.

Abbreviations

AT1	Additional Tier 1
Basel III	International regulatory framework for banks developed by the BCBS
BCBS	Basel Committee on Banking Supervision
CAO	Capital Adequacy Ordinance
CCyB	Countercyclical capital buffer
CDS	Credit default swap
CET1	Common Equity Tier 1
CHF	Swiss franc
CoCos	Contingent capital
DF-SIB	Domestically focused systemically important bank
FINMA	Swiss Financial Market Supervisory Authority
FSB	Financial Stability Board
G-SIB	Global systemically important bank
GDP	Gross domestic product
HT CoCos	High-trigger contingent capital
IPRE	Income-producing residential real estate
IRB	Internal ratings-based approach
LT CoCos	Low-trigger contingent capital
LTI	Loan-to-income
LTV	Loan-to-value
NBA	National Bank Act
NII	Net interest income
NPV	Net present value
RWA	Risk-weighted assets
SFSO	Swiss Federal Statistical Office
TBTF	Too big to fail
TBTF2	Revised Swiss TBTF regulations
TLAC	Total loss-absorbing capacity
ZKB	Zürcher Kantonalbank

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The banking statistics used in this report are based on official data submitted and/or on data reported by individual banks. The analysis covers big banks and domestically focused commercial banks. The latter 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. Data on the big banks are analysed on a consolidated basis. This document is based on data as at 31 May 2019.

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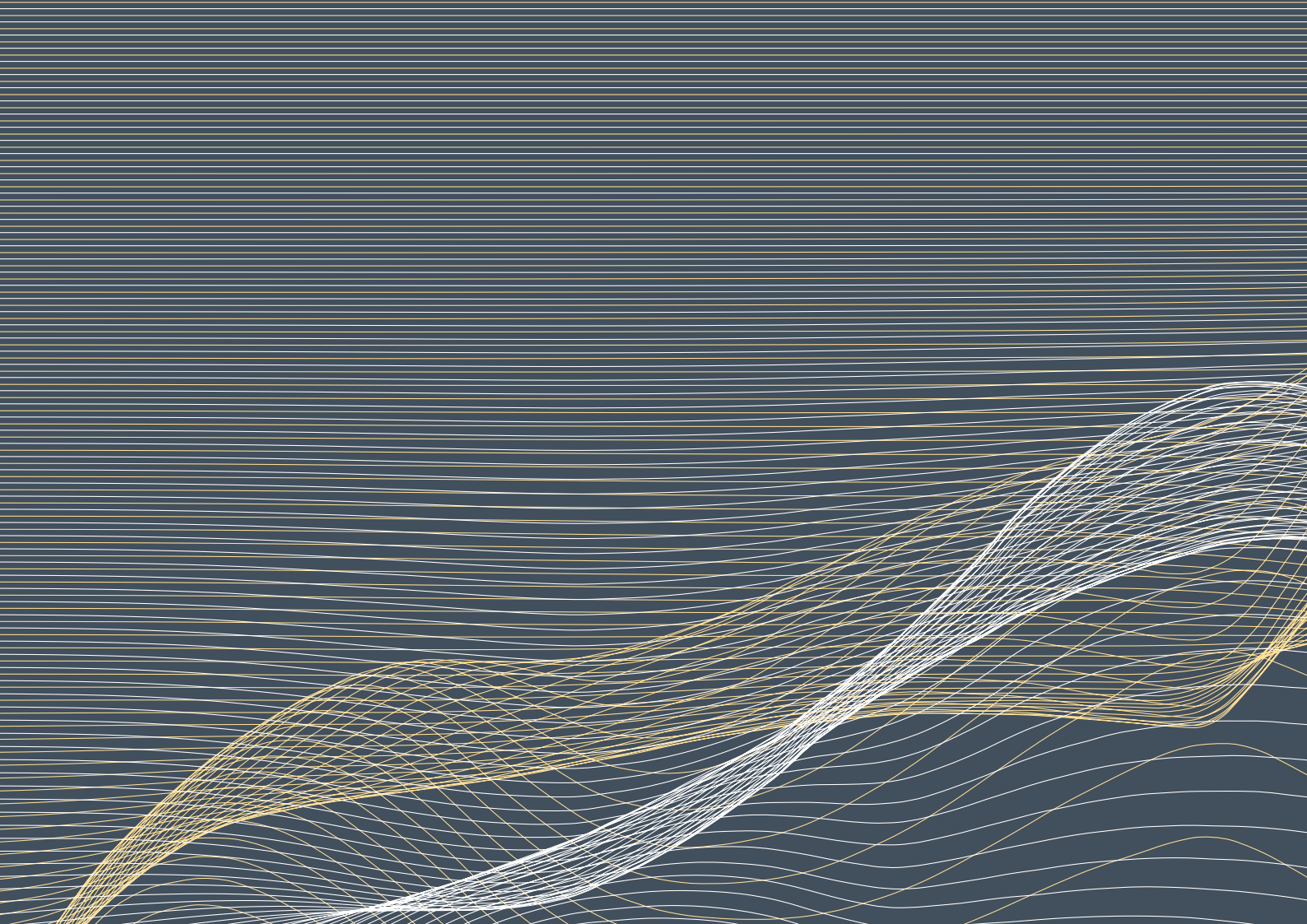
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