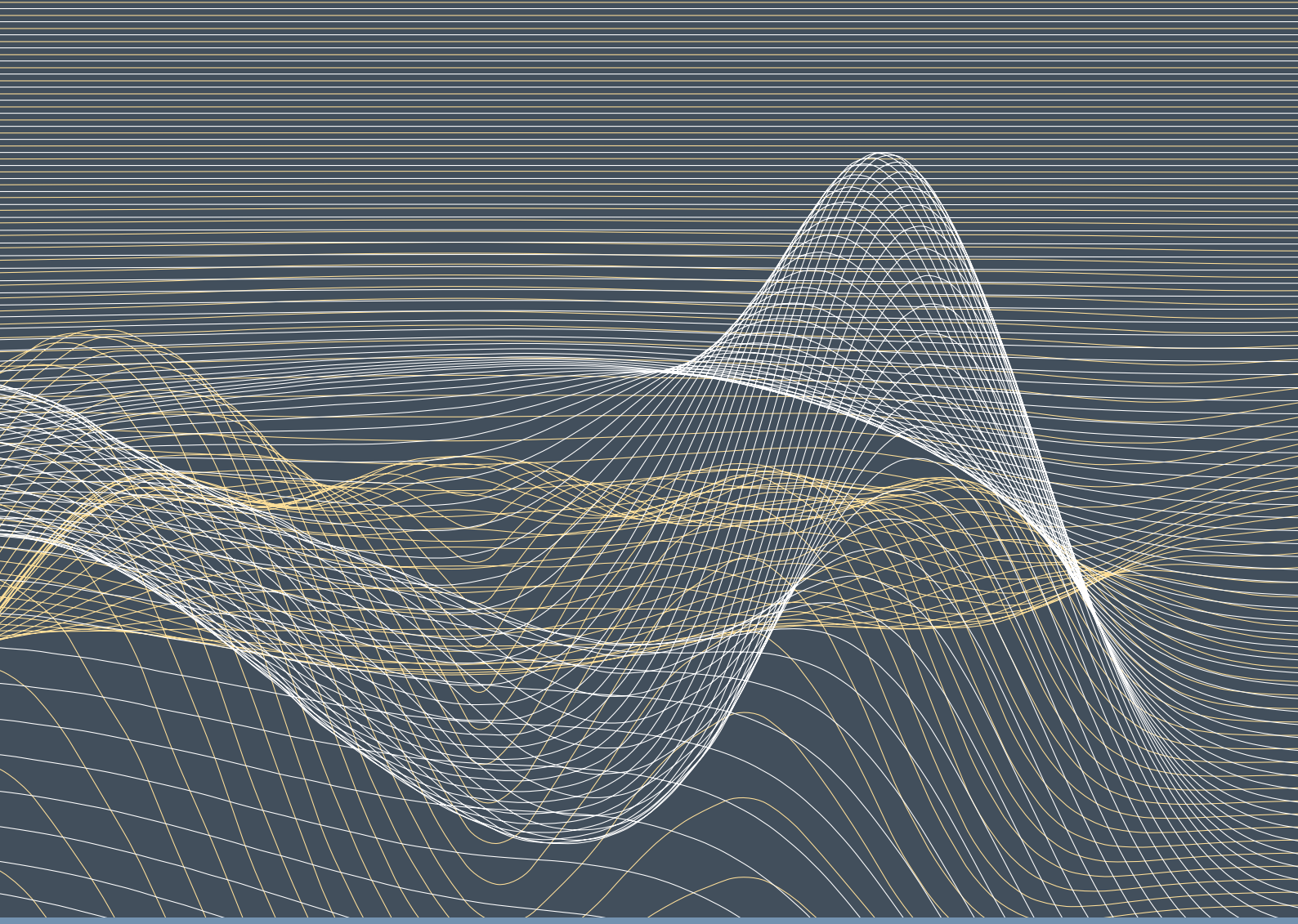

Financial Stability Report 2020

SCHWEIZERISCHE NATIONALBANK
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Financial Stability Report 2020

SNB BNS

Contents

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 is divided into five chapters. The executive summary (chapter 1) is followed by chapter 2, which tracks key domestic and global risks to the Swiss banking sector, focusing on credit quality, real estate and stock markets, banks' funding conditions, and interest rates. This chapter also presents current developments on the Swiss corporate loan market in the context of coronavirus disease (COVID-19). Furthermore, the Swiss mortgage and real estate markets as well as climate risks are discussed in separate subchapters. Chapter 3 gives an overview of the structure of the Swiss banking sector. Chapters 4 and 5 assess the globally active banks (Credit Suisse and UBS) and the domestically focused commercial banks ('domestically focused banks'), respectively. They are analysed separately due to the differences in their size and business model. 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. Bank-specific data on the globally active banks and the DF-SIBs are analysed at a consolidated level. This document is based on data as at 31 May 2020.

1 Executive summary

Macroeconomic environment

Economic and financial conditions for the Swiss banking sector deteriorated markedly during the last few months of the reporting period. The outbreak and ensuing spread of COVID-19 around the world triggered a significant correction on financial markets and a sharp drop in global economic activity. The economic and financial outlook has worsened considerably and is subject to unusually high uncertainty.

Since February 2020, the protective measures taken in many countries to contain the spread of COVID-19 ('lockdown') have led to a sharp drop in economic activity and caused exceptional turbulence on financial markets. Available data suggest that the contraction in global economic activity in H1 2020 was very deep, and that global unemployment has increased substantially. After rallying in 2019, stock prices fell abruptly in response to the international spread of COVID-19. Markets subsequently rebounded, and in the US and Switzerland stock prices are now higher than they were 12 months ago. Since February, forward-looking indicators – e.g. risk premia for corporations and sovereigns, as well as corporate ratings – have been pointing to a significant deterioration in expected global credit quality. However, risk premia have remained well below the peaks witnessed since the onset of the global financial crisis.

In response to these challenges, fiscal authorities and central banks around the globe have taken extraordinary measures to support their economies and ensure the proper functioning of credit markets as well as the provision of liquidity to the banking system. In Switzerland, in particular, the Federal Council has extended and simplified rules for short-time work programmes[1] to encourage companies to maintain their labour force. In addition, it has introduced a guarantee programme for corporate loans to help small and medium-sized enterprises bridge liquidity shortages. As a complement, the SNB has set up the SNB COVID-19 refinancing facility, enabling banks to access the required liquidity for these loans at the SNB policy rate. The SNB has also taken part in coordinated central bank action to enhance global US dollar liquidity for Swiss financial market participants. Moreover, the Federal Council has followed the recommendation of the SNB to deactivate the countercyclical capital buffer (CCyB), thereby increasing banks' room for manoeuvre in their role as lenders. Finally, the SNB has further reduced the negative interest burden on the banking system by raising the volume of sight deposit account balances that are exempt from negative interest.

The Federal Council's corporate loan guarantee programme, coupled with the SNB COVID-19 refinancing facility, has been a rapid and effective response that has helped to alleviate liquidity issues at small and medium-sized enterprises caused by the COVID-19 pandemic. Since many of these companies did not have an established credit relationship with a bank before the outbreak of COVID-19, an important priority of the loan guarantee programme was to keep the application process and eligibility criteria as simple as possible. Within around one month of the programme being launched, over 100,000 guaranteed loans had been granted. Furthermore, according to a fortnightly qualitative survey conducted by the SNB, there is no evidence that credit rationing is taking place in the non-guaranteed loans segment. The rejection rate for loan applications is low, and banks rarely mention their own capital or liquidity constraints as the motivation for a rejection.

The outlook is critically dependent on the evolution of the pandemic and on how authorities, companies, households and the banking sector respond to it. The SNB's baseline scenario centres on the assumption that government and central bank measures taken globally will help to limit the damage to the economy and that the lockdown measures can gradually be lifted. In addition, it assumes that there is no further major turbulence on financial markets, that global monetary policy remains accommodative, and that banks keep supplying the economy with credit thanks to capital and liquidity buffers built up since the global financial crisis. In this scenario, the global economy partially recovers in H2 2020, but growth for 2020 as a whole remains clearly negative. As economic activity catches up, growth is above trend in 2021 and 2022. In Switzerland, however, gross domestic product (GDP) does not recover to its end-2019 level until 2022.

At this stage of the crisis, uncertainty about the economic and financial outlook is unusually high, and significantly worse outcomes must also be taken into consideration. The recovery might be slowed by factors such as lasting financial damage to companies in sectors particularly affected by the lockdown, disrupted production chains and persistent weakness in consumption, investment and employment, as well as a significantly higher public and private debt burden. Furthermore, a second wave of the virus could lead to a renewed lockdown. This could slow – or even reverse – the global economic recovery and trigger fresh turbulence on financial markets.

1 'Kurzarbeit'.

Globally active banks

The simultaneous deterioration in the economic situation in all regions of the world, together with the unusually high level of uncertainty, poses significant challenges for the two globally active Swiss banks, Credit Suisse and UBS. However, their solid capital base puts them in a favourable position to face these challenges.

Although both banks continued to report strong profits in Q1 2020, partly because client activity increased and trading business benefited from elevated volatility, the COVID-19 pandemic nevertheless left its mark on their Q1 results. In particular, Credit Suisse and UBS increased their provisions for credit losses. In addition, risk-weighted assets (RWA) increased at both institutions, which led to a reduction of their capital ratios in Q1 2020.

Under the baseline scenario, the economic consequences of the COVID-19 pandemic affect Credit Suisse and UBS through two main channels. First, credit quality is expected to deteriorate both in Switzerland and abroad. Second, the correction on the stock markets has reduced the value of assets under management and the associated uncertainty could lower demand for client and capital market transactions. This, in turn, could translate into lower earnings from wealth management and investment banking.

Both of these channels weigh on the profitability of the two globally active banks. Moreover, an additional rise in RWA could lead to a further reduction in capital ratios. Under the baseline scenario, the impact on both globally active banks is likely to be limited as a result of the partial economic recovery expected in H2 2020 as well as the stabilisation in financial markets.

The economic consequences of the COVID-19 pandemic – and hence the effects on the two globally active Swiss banks – remain highly uncertain. The longer and deeper the domestic and global economic downturn, the greater the negative impact on the quality of the banks' loan portfolios will be. Worse-than-expected economic developments in combination with renewed turbulence on the financial markets would weigh further on banks' profitability.

The uncertainty regarding the scale of the pandemic's economic impact is also reflected in market indicators for the globally active banks. The outbreak of the crisis was initially followed by a marked drop in the stock prices of the Swiss banks and their international peers, suggesting a correspondingly sharp decline in their expected profitability. At the same time, credit default swap (CDS) premia – an indicator of creditworthiness – increased steeply for all banks, but remained well below the levels reached during the global financial crisis and euro area debt crisis. CDS prices have since receded to some extent and stock prices have recouped part of their substantial losses. Volatility on the markets remains elevated, however, reflecting high uncertainty.

Both of the globally active Swiss banks are well placed to face the challenges posed by the current difficult environment and support the real economy. This favourable situation is attributable to risk reduction and, in particular, to the build-up of capital buffers over recent years, in line with the 'too big to fail' (TBTF) regulations. The SNB regularly conducts a scenario analysis to assess the resilience of the banks to highly unfavourable developments in economic and financial conditions. The scenario analysis indicates that, thanks to these capital buffers, the two banks are able to cope with significantly worse developments in the economic environment than are assumed under the baseline scenario. At the same time, this analysis shows that the current calibration of the TBTF capital requirements is necessary to ensure adequate resilience at these two banks. Periods of heightened uncertainty, such as the one the banks are currently facing, demonstrate the value of robust regulatory requirements.

Domestically focused commercial banks

The marked deterioration in the economic outlook also poses significant challenges for the domestically focused banks. These banks are particularly exposed to developments affecting the financial soundness of domestic corporations and households. In this context, the domestically focused banks' large capital buffers are essential to financial stability. These capital buffers enable banks to absorb considerable losses, while continuing their lending to the real economy.

Under the baseline scenario, the pandemic will affect domestically focused banks primarily through a deterioration of corporate credit quality in Switzerland. Provisions and write-downs on outstanding loans to Swiss corporations are expected to increase, albeit with some lag, from their current record-low levels. This principally concerns credit exposure to sectors that have been directly affected by the lockdown or that were already undergoing structural change before the outbreak of the COVID-19 pandemic. The partial economic recovery expected in H2 2020, as well as measures taken by the authorities, will help to limit the negative consequences for banks. Besides the impact on provisions and write-downs, the pandemic is also expected to prolong the low interest rate environment and put banks' interest rate margins under further pressure. Moreover, the correction on the financial markets has dampened prospects for trading income as well as for fee and commission income. As a result, the profitability of domestically focused banks is likely to decrease from an already low level. While domestically focused banks should remain profitable overall, a number of banks are expected to incur losses.

The impact of the COVID-19 pandemic on domestically focused banks is not yet visible in statistical or accounting data. First, as most of these banks publish their income statements biannually or annually, accounting data incorporating the shock's short-term impact on profitability are not yet available. Second, backward-looking indicators

of credit quality, such as the share of non-performing loans, will react only with a lag. Forward-looking market indicators, such as bond spreads and ratings, suggest that market participants currently expect the financial soundness of Swiss corporations to deteriorate, but that the impact on domestically focused banks' creditworthiness is likely to remain contained.

As with globally active banks, the actual extent of the COVID-19 pandemic's impact on domestically focused banks is subject to a high degree of uncertainty. The longer and deeper the domestic and global economic downturn, the greater the negative impact on the quality of the domestically focused banks' loan portfolios will be.

In this context, the imbalances on the domestic mortgage and residential real estate markets continue to present relevant macroprudential risks going forward. While uncertainty about the magnitude of these imbalances has increased in response to the current shock, a longer and deeper recession than expected under the baseline scenario could trigger a price correction on the residential real estate market. Furthermore, it could lead to a materialisation of affordability risks on mortgages due to higher unemployment for households and reduced rental income for companies. Both a price correction on the residential real estate market and a materialisation of affordability risks would negatively affect the quality of the banks' mortgage portfolios. Against this backdrop, the latest vintages of mortgage loans appear particularly vulnerable.

Given these challenges, the capital buffers held by domestically focused banks provide a crucial element of robustness. They play a key role in banks' lending capacity and – should the impact of the COVID-19 pandemic turn out to be worse than expected under the baseline scenario – in their loss-absorbing capacity. SNB scenario analysis indicates that domestically focused banks' resilience is adequate.

2 Macroeconomic environment

2.1 KEY DEVELOPMENTS

Economic and financial conditions for the Swiss banking sector deteriorated markedly during the last few months of the reporting period. Since February 2020, the protective measures taken in many countries to contain the spread of COVID-19 ('lockdown') have led to a sharp drop in economic activity and caused exceptional turbulence on financial markets. Available data suggest that the contraction in global economic activity in H1 2020 was very deep, and that global unemployment has increased substantially. After rallying in 2019, stock prices fell abruptly in response to the international spread of COVID-19. Markets subsequently rebounded, and in the US and Switzerland stock prices are now higher than they were 12 months ago. Since February, forward-looking indicators – e.g. risk premia for corporations and sovereigns, as well as corporate ratings – have been pointing to a significant deterioration in expected credit quality. However, risk premia have remained well below the peaks witnessed since the onset of the global financial crisis.

Besides the already visible effects of the pandemic, there are risks for global financial stability going forward. First, the economic outlook is subject to unusually high levels of uncertainty. While the SNB's baseline scenario involves a severe recession followed by a partial recovery, significantly worse outcomes are possible. In particular, the recovery could be slower than expected (e.g. due to lasting financial damage to companies or persistent weakness in consumption), or a second wave of the virus could lead to a renewed lockdown. Second, significant vulnerabilities such as high private and public debt are weighing on global credit quality; these vulnerabilities could amplify and prolong the negative impact of the present shock. Third, imbalances persist on real estate markets in several countries. Should the economic consequences of the COVID-19 pandemic turn out to be worse than currently anticipated, they could trigger price corrections on these markets.

Sharp drop in economic activity: Lockdown measures led to a sharp drop in global economic activity in Q1 2020. China's GDP was hit particularly hard (cf. chart 1) as it was subject to a lockdown earlier than other regions. GDP fell by a smaller margin in Europe and the US in line with the timing of lockdown measures implemented in these regions. According to the latest data, global economic activity is set to fall further in Q2 2020. Global unemployment has also increased substantially.

Abrupt deterioration in market assessment of global credit quality: Market-based indicators point to an abrupt deterioration in expected global credit quality as a result of the COVID-19 pandemic. Over the reporting period, sovereign and corporate credit risk premia declined continuously up to February 2020, before increasing sharply. In the sovereign segment, the increase was most pronounced in emerging markets and in the southern member states of the euro area (cf. chart 2). Corporate bond risk premia have widened in all major markets (cf. chart 3). In recent weeks, risk premia have fallen somewhat. While both corporate and sovereign risk premia are currently still at high levels, they have remained well below the peaks witnessed since the onset of the global financial crisis.

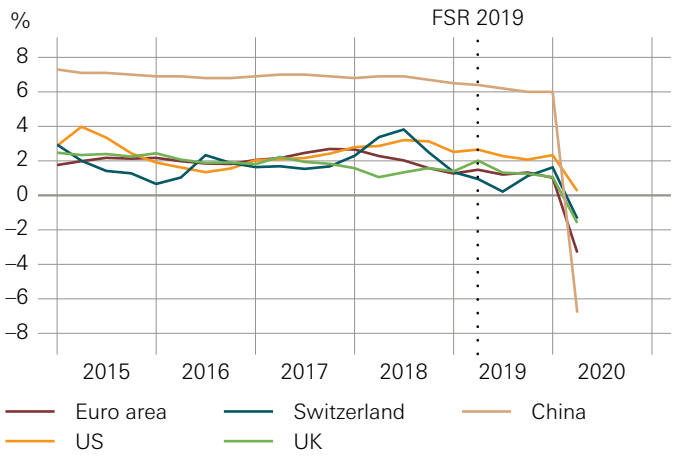
Further data on corporate credit ratings and credit provisions also indicate a significant deterioration in corporate credit quality. The ratio of rating downgrades to total rating changes had already ticked upward before the pandemic and this tendency accelerated markedly in Q1 2020 (cf. chart 4). Rating agencies expect a further deterioration of this metric.[1] Moreover, major global banks have substantially increased their provisions for credit losses.

Significant vulnerabilities are weighing on global credit quality and could amplify and prolong the negative impact of the current shock. Vulnerabilities in the corporate segment had already developed before the outbreak of the pandemic, as reflected in historically high levels of global corporate debt relative to GDP (cf. chart 5) and weak lending standards in the leveraged loans

1 Cf., for example, Moody's Investors Service, *April 2020 Default Report*, 11 May 2020.

GDP GROWTH

Year-on-year real GDP growth rates — Chart 1



Sources: Refinitiv, SNB calculations, State Secretariat for Economic Affairs (SECO)

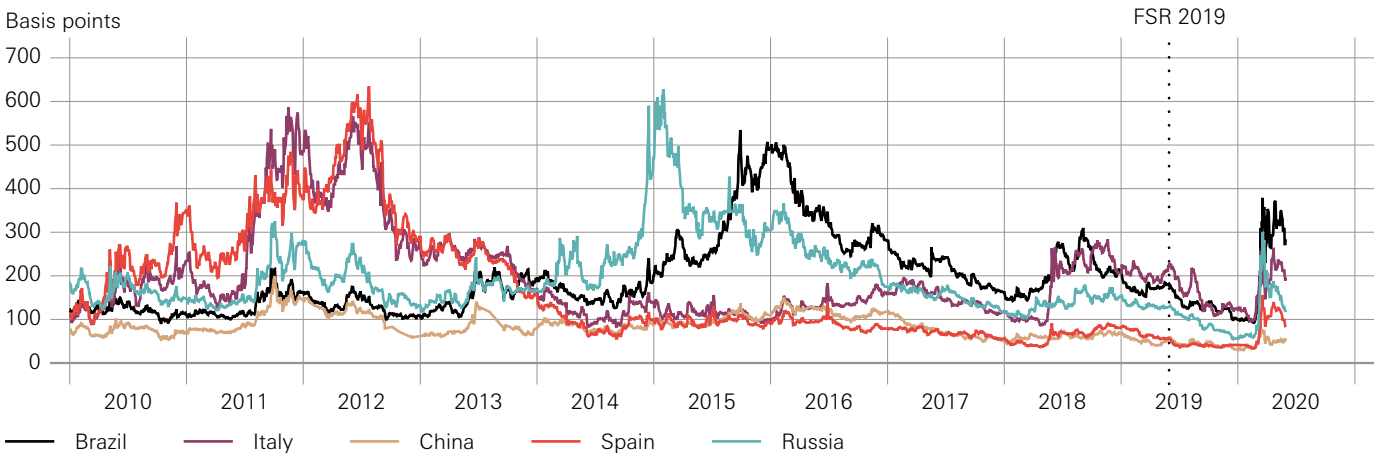
segment.[2] As regards the sovereign segment, global public debt relative to GDP is likely to increase from an already high level as a result of public support measures and guarantees, lower GDP, and the drop in tax revenues.[3]

In Switzerland, too, market indicators such as corporate bond spreads point to a deterioration in expected corporate credit quality. Indicators for the number of corporate insolvencies have not increased so far; this is related to the lag in these indicators, to the Federal Council's decision to temporarily suspend debt enforcement, and to the guaranteed loan programme for small and medium-sized enterprises. Non-performing loan ratios – a backward-looking indicator for credit quality – remain historically low. They are, however, likely to increase as the negative consequences of the COVID-19 pandemic on the financial soundness of corporations and households materialise. In this context, high and increasing household debt relative to GDP, and affordability risks in mortgage lending, constitute relevant vulnerabilities (cf. subchapters 2.3 and 5.1).

2 Bank of England, *Financial Stability Report*, December 2019, p. 12; Federal Reserve Board, *Financial Stability Report*, November 2019, p. 12.
3 *IMF Fiscal Monitor*, April 2020.

SOVEREIGN CREDIT DEFAULT SWAP PREMIA

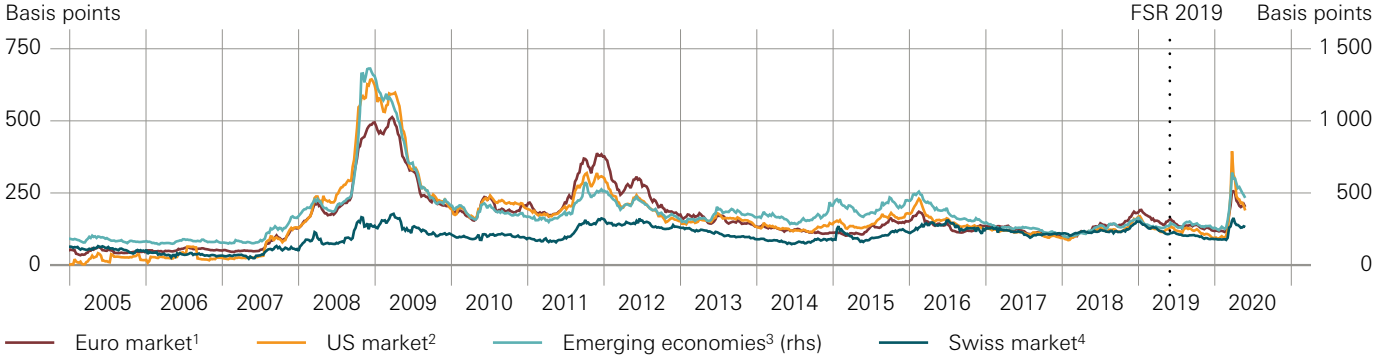
Premia for credit protection (five-year senior) Chart 2



Source: Bloomberg

BOND SPREADS

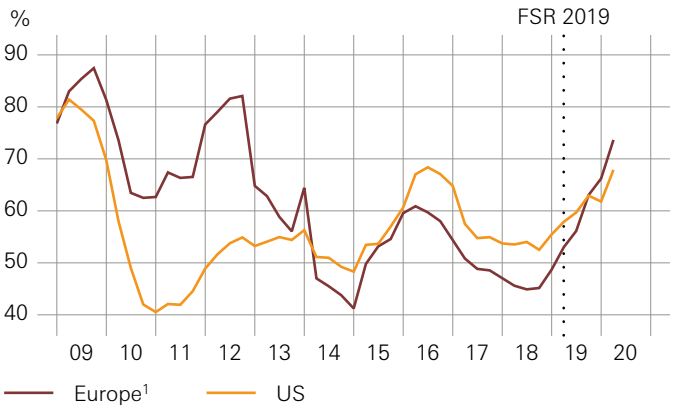
Yield spread between corporate and government bonds Chart 3



1 Euro-Aggregate Corporate (investment grade, 5–7 year maturity, EUR-denominated) and German Government (5–7 year maturity), Bank of America Merrill Lynch.
2 US Corporate (investment grade, 5–7 year maturity, USD-denominated) and US Treasury (5–7 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 (5-year maturity), calculated by the SNB.
Sources: Refinitiv, SNB, St. Louis Fed

RATING DOWNGRADES RATIO

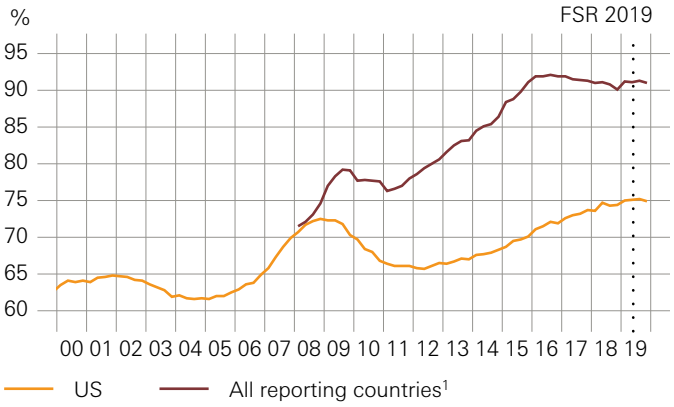
Number of downgrades relative to total rating changes in non-financial sector, moving average over four quarters — Chart 4



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

TOTAL DEBT OF NON-FINANCIAL CORPORATIONS (% OF GDP)

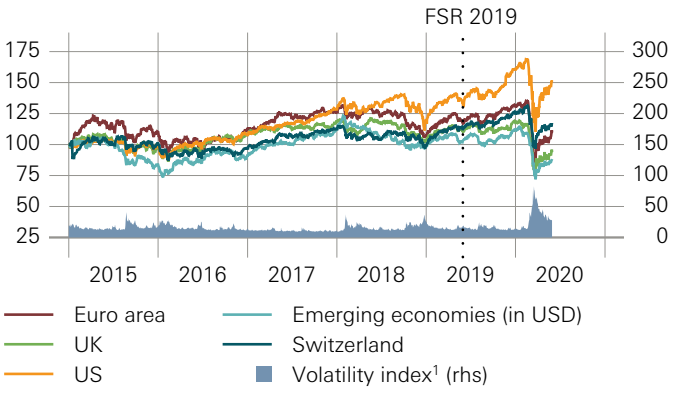
Chart 5



1 Aggregate based on conversion to USD at PPP exchange rates.
Sources: BIS, Refinitiv

STOCK MARKET INDICES

Datastream global indices (indexed to 1 Jan 2015 = 100) and volatility — Chart 6



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: Refinitiv

Major stock price correction: Following a rally in 2019, stock prices declined sharply in response to the international spread of COVID-19 and volatility spiked (cf. chart 6). This correction was rapid, partly due to an unwinding of stretched valuations.[4] Furthermore, the earnings outlook has deteriorated considerably.[5] After the correction, stock prices rebounded; in the US and Switzerland, they are now higher than they were 12 months ago. By contrast, stock market volatility has remained elevated, even after the recovery of stock prices, suggesting high uncertainty about the impact of COVID-19 on corporate earnings. The price/earnings ratio, a measure of stock valuation, lies above its long-term average for the US and Switzerland.[6]

Global banking sector also affected by market stress: The price of bank stocks fell sharply around the globe in February 2020, reflecting the deteriorating profitability outlook. The drop was more pronounced than for the general stock market. The price of bank stocks has since partially recovered.

In line with general developments in credit risk premia, CDS premia (a market indicator of bank resilience) for the largest banks increased from February/March 2020 (cf. chart 7). Over recent weeks, risk premia have retreated and are now at levels similar to those recorded 12 months ago. However, the rating outlook for banks has generally deteriorated.[7]

Against the backdrop of the financial market turbulence in February and March, funding conditions for banks temporarily tightened globally. The tightening was most pronounced in the US funding market, where the USD Libor-OIS spread (a measure of unsecured funding conditions) reached its highest level since the global financial crisis. The resulting funding stress was partly attributable to substantial withdrawals from US money market funds.[8] Conditions normalised after the introduction of emergency lending facilities by the Federal Reserve and coordinated USD auctions by several central banks.[9]

Volatile interest rates: While interest rates generally declined in 2019, volatility increased in the wake of the COVID-19 crisis and developments have been heterogeneous (cf. chart 8). Both short and long-term interest rates have been subject to various influences such as policy rate reductions as well as asset purchases and liquidity measures by central banks, general liquidity

4 Cf. IMF, *Global Financial Stability Report*, April 2020, p. 8.
5 Cf., for example, Refinitiv (2020), *S&P 500 Earnings Scorecard*, 4 May 2020; Refinitiv (2020), *STOXX 600 Earnings Outlook*, 26 May 2020.
6 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 greater when long-term data covering more than 100 years are used.
7 Cf. Aldasoro, Fender, Hardy and Tarashev (2020), 'Effects of Covid-19 on the banking sector: the market's assessment', BIS Bulletin No 12.
8 Cf. Eren, Schrimpf and Sushko (2020), 'US dollar funding markets during the Covid-19 crisis – the money market fund turmoil', BIS Bulletin No 14; Eren, Schrimpf and Sushko (2020), 'US dollar funding markets during the Covid-19 crisis – the international dimension', BIS Bulletin No 15.
9 Cf. Federal Reserve Board, *Financial Stability Report*, May 2020.

needs and investors' risk perception. Overall, the level of interest rates remains historically low.

Persistent imbalances on real estate markets: Imbalances persist on real estate markets in several countries. In addition, real estate prices have risen across most regions and segments over the last 12 months (cf. chart 9). In the US, the price-to-rent ratio, a measure of real estate price valuation, has stabilised above its long-term average in the residential segment (cf. chart 10); in the investment segment, the ratio has increased further and initial yields (i.e. the ratio of rental returns to transaction prices) are at historically low levels. In Europe, the price-to-rent ratio is signalling imbalances on the residential real estate markets in the UK, France and Switzerland (cf. subchapter 2.3).

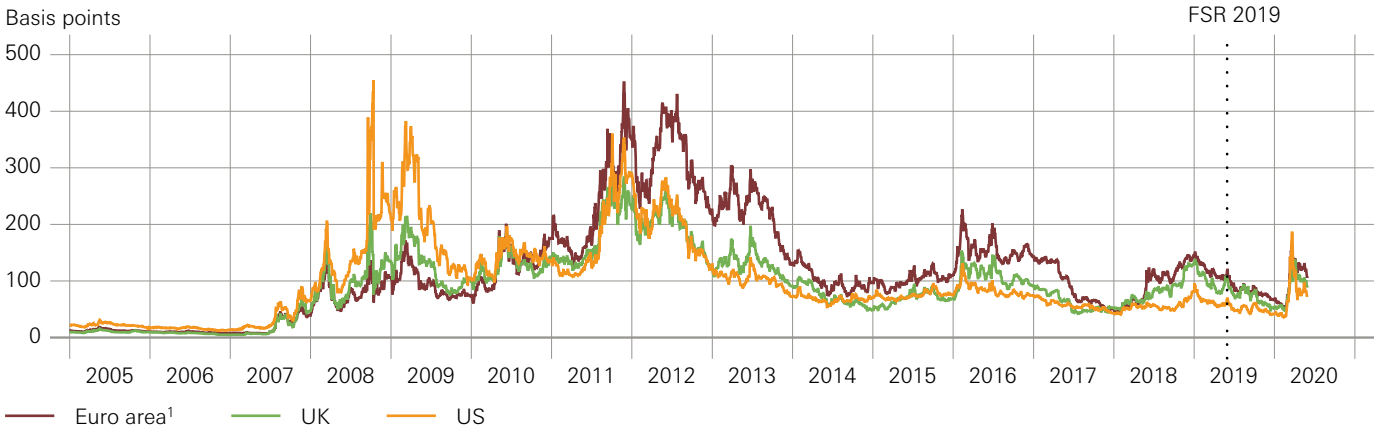
While the COVID-19 pandemic is likely to affect real estate markets, it is too early to conduct a meaningful assessment. On the one hand, this is due to the lag in the availability of price data. On the other, given the general inertia of real estate markets, any price reaction is likely to occur with some delay. In the short term, transient price movements are possible as activity on these markets is expected to be subdued, with unusually few transactions taking place.

2.2 BANK LENDING TO COMPANIES IN THE CONTEXT OF COVID-19

The banks' ability to fulfil their function as credit providers in the event of a significant shock is critical for financial stability. Capital and liquidity buffers play a central role here. Together with the set of measures implemented by the Swiss authorities in March 2020 – the Federal

BANK CREDIT DEFAULT SWAP PREMIA

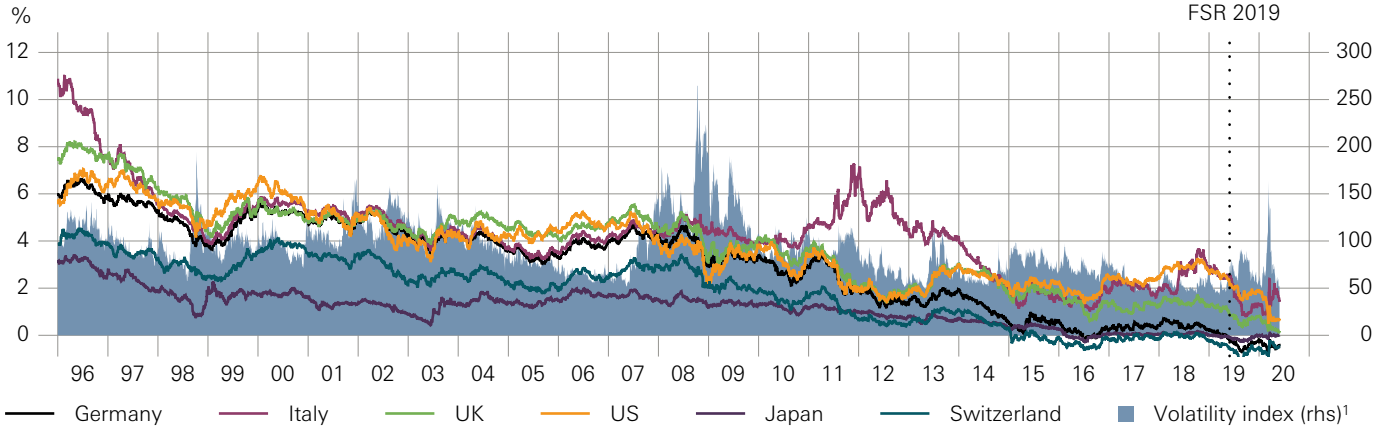
Average of biggest banks (five-year senior) Chart 7



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

LONG-TERM INTEREST RATES: TEN-YEAR GOVERNMENT BONDS

Chart 8



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

Council's guaranteed loan programme, the SNB's COVID-19 refinancing facility and the deactivation of the sectoral CCyB – they should facilitate companies' access to credit, thereby bridging liquidity shortfalls caused by the COVID-19 pandemic. As a consequence, the negative impact of the pandemic on the corporate sector as a whole should be reduced. This, in turn, should help to contain the deterioration in the quality of the banks' credit portfolio and hence the risks for financial stability.

In cooperation with the other Swiss authorities, the SNB is closely monitoring banks' lending to domestic companies. As a complement to its regular statistics, the SNB has launched a fortnightly qualitative bank survey. This section presents the survey's main findings along with other information collected to date.

Two complementary measures: the Federal Council's guaranteed loan programme and the SNB's COVID-19 refinancing facility

The Federal Council's guaranteed loan programme provides small and medium-sized enterprises affected by the COVID-19 pandemic with guaranteed bridging loans of up to 10% of their annual turnover or a maximum of CHF 20 million.[10] There are two types of bank loan available to companies: loans of up to CHF 500,000, which are fully secured by the Confederation, and loans of between CHF 500,000 and CHF 20 million, where 85% of the borrowed amount is secured by the Confederation (cf. table 1).[11] As a complement to the Federal Council's guaranteed loan programme, the SNB introduced the SNB COVID-19 refinancing facility to allow banks to refinance the guaranteed portion of these corporate loans at the SNB policy rate.[12] The facility provides a stable funding base for bank lending. As a result, banks can expand lending without facing a deterioration in their regulatory liquidity ratios, such as the liquidity coverage ratio.

10 The programme is available to companies with an annual turnover of less than CHF 500 million.
11 On 22 April, in addition to these two types of loan, the Federal Council announced specific guarantees for loans to startups. 65% of the loan guarantee is provided by the Confederation and 35% is provided by the canton. The Confederation and the respective canton thus jointly guarantee 100% of the loan up to CHF 1 million per startup. The total amount guaranteed may not exceed one-third of the startup's 2019 running costs.
12 In addition to corporate loans guaranteed by the Confederation, the SNB accepts as collateral for the SNB COVID-19 refinancing facility claims secured by loan guarantees offered by cantons and claims secured by guarantees provided for startups by the Confederation in cooperation with the cantons. For details, cf. www.snb.ch/en/ifor/finmkt/operat/id/finmkt_crf.

FEDERAL COUNCIL'S GUARANTEED LOAN PROGRAMME

Table 1

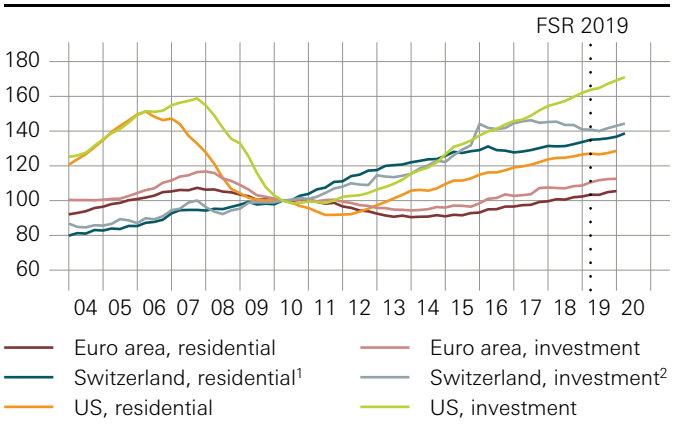
	Loans up to CHF 500,000	Loans of between CHF 500,000 and CHF 20 million
Credit check by lending bank	No, paid out with minimal bureaucracy	Requires standard credit assessment
Federal guarantee	100%	85%
Interest rate[1]	0%	0.5% for 85% of loan amount and individual bank rate for remaining 15%

1 The Federal Department of Finance (FDF) can adjust the interest rate once a year on 31 March in line with market developments.

Source: www.covid19.easygov.swiss/en/

REAL ESTATE PRICES

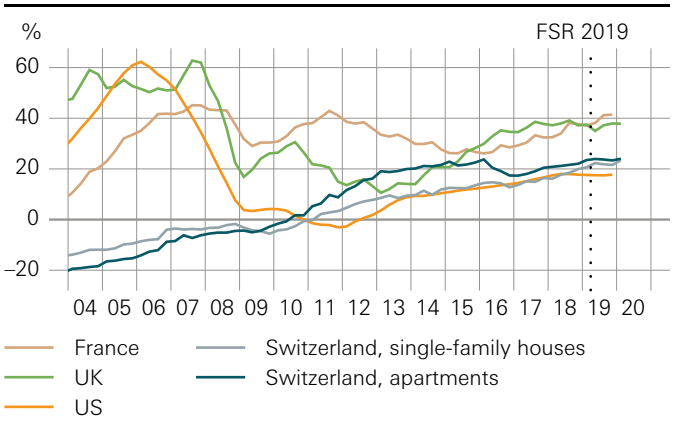
In real terms (deflated by total CPI), Q1 2010 = 100 — Chart 9



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, Refinitiv, SFSO, Wüest Partner

RESIDENTIAL REAL ESTATE: PRICE-TO-RENT RATIOS

Deviation from long-term average[1] — Chart 10



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, Refinitiv, SFSO, Wüest Partner

Substantial lending volume under guaranteed loan programme

Between the launch of the programme on 26 March and the end of May, around 125,000 loans of up to CHF 500,000 were granted, resulting in a total lending volume of approximately CHF 13.5 billion. About 90,000 of these loans, corresponding to a lending volume of approximately CHF 9.7 billion, had been refinanced at the SNB (cf. chart 11).[13] The vast majority of the loans – approximately 100,000 – had already been paid out by mid-April.[14] Banks indicate that the majority of loans up to CHF 500,000 have been granted to companies that did not have an established credit relationship with a bank before the outbreak of the pandemic.

As regards the larger loans of between CHF 500,000 and CHF 20 million, total lending volume is much smaller. By end-May, 562 loans with a total lending volume of around CHF 1.5 billion had been granted. About CHF 0.4 billion had been refinanced at the SNB (cf. chart 12). In the SNB survey, banks report that demand for the larger loans was very low at the start of the programme and has been increasing since then at a relatively slow pace.[15] According to banks, some companies have taken out a guaranteed loan of up to CHF 500,000 and are now monitoring how the economic situation develops before applying for a larger, costlier one. Moreover, bigger companies have alternative financing options and may thus be reluctant to apply for guaranteed loans as they are subject to additional restrictions.[16]

Supply-side factors may also have contributed to the weak development of these loans. Given the exceptionally high uncertainty about the economic outlook, banks' credit checks are taking longer than usual. The survey also indicates that despite 85% of the loan amount being guaranteed by the Confederation, the rejection rate is similar to that reported for non-guaranteed loans (cf. chart 13). Banks attribute this to the fact that they consider the business models of a relatively high proportion of companies applying for these loans as unsustainable.

By alleviating companies' liquidity shortfalls caused by the COVID-19 pandemic and hence helping to limit the rise in corporate default rates, the Federal Council's guaranteed loan programme also helps to contain the negative impact of the macroeconomic shock on the banking system under the baseline scenario (cf. subchapter 2.5). The protection of the banks' loan portfolios against higher corporate default rates will only be partial, however, as the loan guarantees apply to just a small fraction of the loans on these banks' balance sheets (cf. subchapter 5.1).

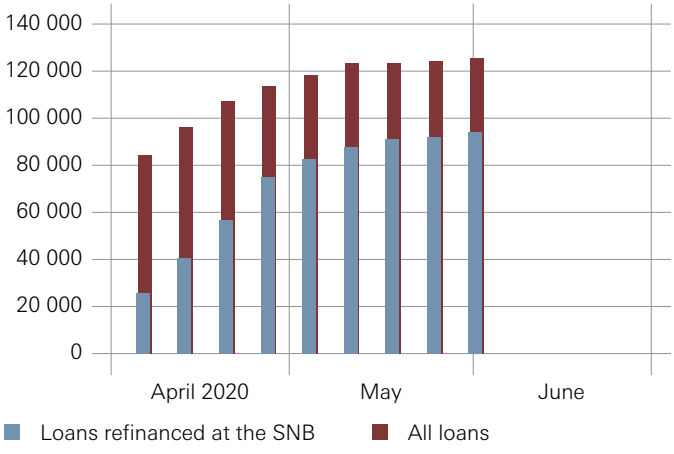
No evidence of credit rationing

Results from the SNB survey indicate that companies' utilisation of pre-existing credit lines has increased only moderately since the outbreak of the COVID-19 pandemic. Demand for non-guaranteed loans has even decreased slightly since mid-March. Banks attribute these results to a partial substitution of non-guaranteed with guaranteed loans and to lower investments by companies.

13 The difference between the loan volume of the banks and the loan volume refinanced at the SNB is mainly due to two factors. First, some banks choose not to refinance the loans granted – or to refinance only some of them – at the SNB. Second, only the portion of the loan used by the borrower can be refinanced at the SNB.
14 Sources: covid19.easygov.swiss/en/for-media/ (loans guaranteed by the Confederation), SNB (refinanced loans).
15 The survey was addressed to senior loan officers at a sample of the 16 largest Swiss banks serving the domestic credit market. For credit demand, utilisation of credit lines and credit conditions, survey results relate to changes observed during the previous two weeks.
16 In particular, until the loan is repaid, companies are prohibited from making new investments in fixed assets, distributing dividends and reimbursing capital. In addition, credit funds may not be used for certain intra-group transactions.

NUMBER OF LOANS UP TO CHF 500,000

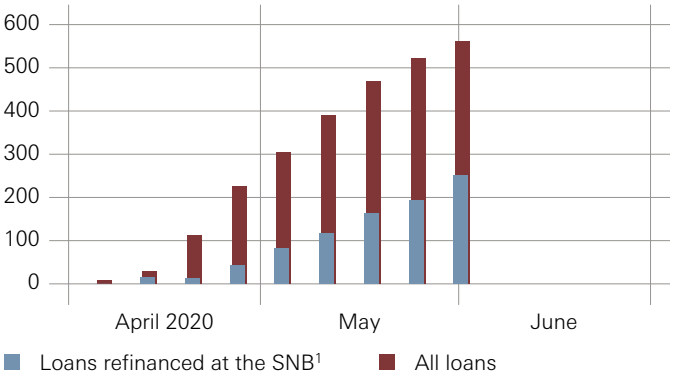
100% federal guarantee — Chart 11



Sources: SECO, SNB

NUMBER OF LOANS OF BETWEEN CHF 500,000 AND CHF 20 MILLION

85% federal guarantee — Chart 12



1 Due to data limitations, the number of loans refinanced at the SNB includes a small number of credit claims secured by loan guarantees offered by cantons.
Sources: SECO, SNB

On the supply side, survey results suggest that banks have slightly tightened their credit conditions for non-guaranteed loans (cf. chart 14). This is particularly the case for new borrowers. Rejection rates have been predominantly between 0% and 20%, a level that is within the normal range according to the banks. The main reason for rejections is concern about an applicant's financial strength. Banks' own capital and liquidity constraints are rarely a factor limiting credit supply.

Going forward, as noted in chapters 4 and 5, the capital buffers banks have built up since the global financial crisis should enable them to absorb considerable losses while continuing their lending to the real economy. Uncertainty about the economic outlook is, however, unusually high. Should the recovery be slower than expected, companies' need for liquidity and credit could increase further. At the same time, banks might become reluctant to lend if their own financial positions, or that of corporate borrowers, were to deteriorate significantly.

2.3 SWISS MORTGAGE AND REAL ESTATE MARKETS

Moderate growth on Swiss mortgage and residential real estate markets

In 2019, mortgage growth in the Swiss banking sector as a whole remained at a moderate level. Year-on-year mortgage growth was 3.2% at end-2019 (3.3% at end-2018).

Moreover, transaction price indices for single-family houses and apartments suggest that momentum on the owner-occupied residential real estate market was also moderate in 2019. Between end-2018 and end-2019, growth in transaction prices decreased from 3.4% to 2.4% for single-family houses, and increased from 1.7% to 2.1% for apartments,[17] although there is some heterogeneity across price indices. For apartments, in particular, asking prices are signalling a decline. In the residential investment property segment, in spite of mounting vacancies, transaction prices for apartment buildings increased by 1.5% in 2019 (2018: –2.3%).[18]

Data for Q1 2020 suggest that the development of the Swiss mortgage and residential real estate markets remained similar to that observed in 2019. Mortgage growth as well as residential real estate price growth remained moderate overall.

As mentioned in subchapter 2.1, it is too early for an assessment of the COVID-19 pandemic's impact on the real estate market. In this context, it is unclear whether the fall in the stock prices of real estate funds is indicative of upcoming price corrections on real estate markets. As the international spread of COVID-19 became apparent, Swiss real estate fund prices dropped simultaneously with the general correction on stock markets (cf. chart 15). This could be interpreted as a sign of fading confidence in the Swiss residential real estate market. However, these stock prices often move in parallel with overall stock markets, and in many countries – including Switzerland – they have already recovered some of their losses.

Slight increase in imbalances on Swiss mortgage and residential real estate markets

On the mortgage market, imbalances increased slightly in 2019. 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 2019, the mortgage-to-GDP ratio continued to increase. Similarly, the difference between this ratio and its long-term trend, a measure of

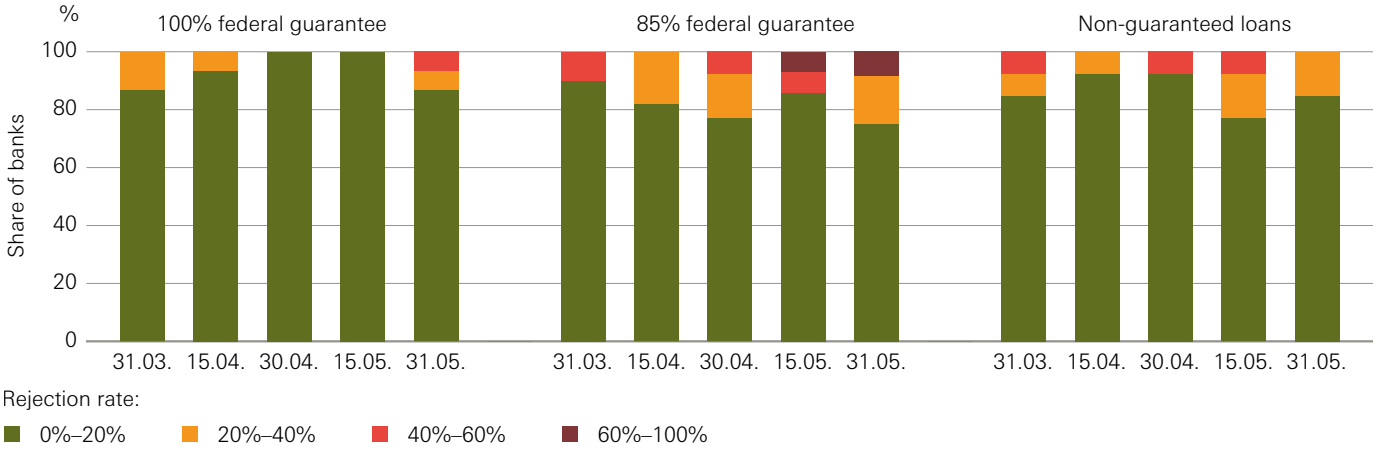
17 Source: Wüest Partner.

18 Ibid.

REJECTION RATE FOR LOAN APPLICATIONS

During reporting period, three loan types

Chart 13



Source: SNB

imbalances, widened slightly. This primarily reflects lower GDP growth.

Developments in the single-family house and apartment segments suggest that imbalances in the owner-occupied residential real estate segment have also increased slightly. Transaction prices for both single-family houses and apartments have risen somewhat faster than fundamental factors such as rents, GDP or population growth can explain.

In the residential investment property segment, the risk of substantial price corrections remains particularly high. Since the beginning of the low interest rate environment in 2008, transaction prices for apartment buildings have grown much more than rents (cf. chart 16), resulting in historically low initial yields. Furthermore, brisk construction of rental apartments over recent years has led to rising vacancy rates (cf. chart 17). The high level of vacant dwellings indicates an oversupply.

In Q1 2020, mortgage and price growth remained moderate, while rents increased only slightly and GDP declined sharply. Uncertainty about the magnitude of the imbalances on the mortgage and residential real estate markets has increased due to the current shock's potential impact on the fundamental economic factors driving these markets in the longer run.

Going forward, the imbalances on the mortgage and residential real estate markets continue to present relevant macroprudential risks. While the risk of an interest rate shock in the near future has diminished, the outlook for the economy has deteriorated significantly. A longer and deeper recession than currently expected under the baseline scenario could trigger a price correction on the residential real estate market. Furthermore, it could lead to a materialisation of affordability risks on mortgages due to higher unemployment for households and reduced rental income for companies.

There are no conclusive signs of imbalances in the commercial investment segment of the real estate market. While transaction prices for office and retail space have risen since 2008 (cf. chart 16) and initial yields for commercial real estate are at very low levels, developments appear moderate compared to those in residential investment. Nevertheless, in a prolonged economic downturn, companies' demand for commercial space could weaken, thereby increasing vacancy rates and exerting a dampening effect on commercial rents. Lower rental income, in turn, would cause transaction prices for commercial real estate to decline. Commercial investment real estate is likely to be more sensitive to the economic cycle than residential investment real estate, especially in the context of a pandemic.

2.4 CLIMATE RISK

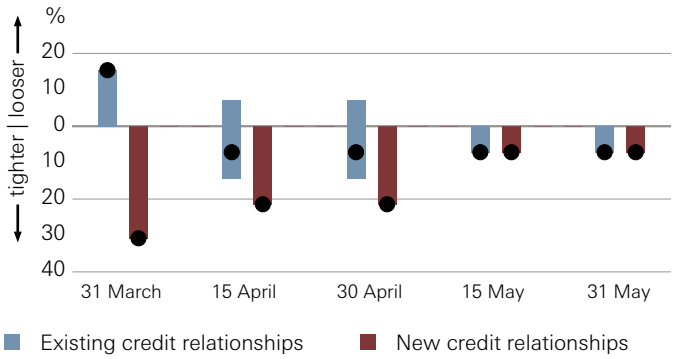
Over recent years, climate change and its implications for banks and financial stability around the globe have attracted the attention of supervisors and central banks.[19] Climate change could affect banks' traditional core business – e.g. as a result of write-downs on loans to particularly exposed companies (credit risk) or trading losses caused by valuation adjustments in stock markets (market risk). Assessing the potential impact for financial stability is part of the SNB's legal mandate.[20]

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

19 For an overview of climate risks in the context of financial stability, cf. *The green swan*, BIS, January 2020.
20 The SNB's statutory task of contributing to the stability of the financial system (art. 5 para. 2 (e) NBA) is outlined in greater detail with respect to climate change in the current draft of the fully revised CO_2 Act applying to the period after 2020 (art. 47a paras. 2 and 3).

CHANGE IN LENDING CONDITIONS FOR NON-GUARANTEED LOANS[1]

Chart 14

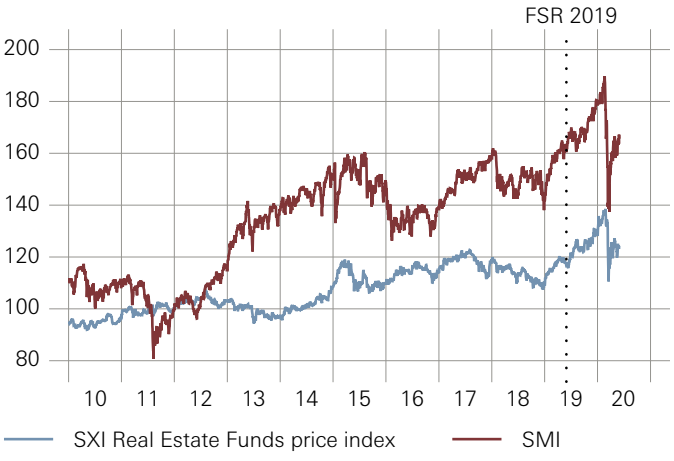


1 The dots represent the difference between the share of banks that reported a loosening and the share of banks that reported a tightening of lending conditions during the reporting period.
Source: SNB

REAL ESTATE FUNDS

Indexed to 2 Jan 2012 = 100

Chart 15



Source: Refinitiv

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

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

From a financial stability perspective, the SNB focuses on whether the banking system and systemically important financial market infrastructures are adequately prepared for potential climate-related shocks and whether climate risks are properly covered by existing regulations. At present, the SNB regards the risk posed by climate change to the stability of the Swiss banking sector and the systemically important financial market infrastructures as moderate; it keeps this assessment under ongoing review.

The SNB actively contributes to the work on climate risk conducted in Switzerland as well as in international fora. It has recently joined the Network for Greening the Financial System (NGFS)[21] – a group of central banks and supervisors principally set up to improve the management of climate risks in the financial sector. As a longstanding member of the Basel Committee on Banking Supervision (BCBS), the SNB is also contributing to work on the integration of climate risk into banking supervision.

At national level, the SNB is currently working with FINMA to analyse climate risks for banks. The main goal of the analysis is to identify possible concentrations of exposure to sectors that are more vulnerable to transition risks. The findings will help decision-makers assess whether these risks are adequately covered or whether action needs to be taken. Regarding systemically important financial market infrastructures, the SNB focuses on minimising climate-related physical risks that could lead to operational outages, e.g. by stipulating that technical facilities be distributed across locations with different risk profiles.

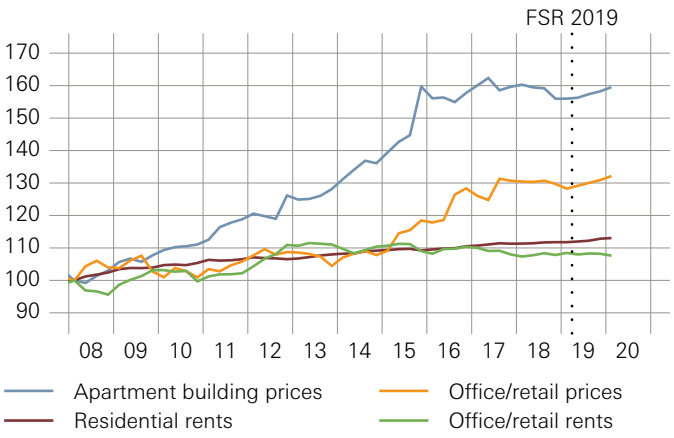
2.5 MACROECONOMIC AND FINANCIAL MARKET SCENARIOS

To capture the different sources of risk to the Swiss banking sector, the SNB considers a baseline scenario and four generic stress scenarios for developments in the economic environment and in financial market conditions. The baseline scenario reflects the current economic and financial environment and describes the most likely outcome given currently available information. Meanwhile, the generic stress scenarios are designed for systematically analysing vulnerabilities in, and the resilience of, the Swiss banking system. The SNB periodically estimates the impact of the stress scenarios, irrespective of their putative short-term likelihood. Each stress scenario covers a subset of relevant risk factors for Swiss banks framed within an internally consistent set-up. The calibration of shocks is guided by historical experience.

21 Cf. www.ngfs.net/en.

INVESTMENT REAL ESTATE: PRICES AND RENTS[1]

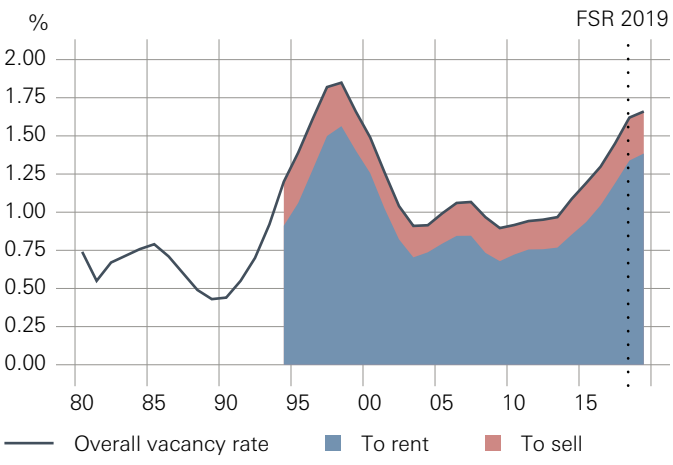
In nominal terms, Q1 2008 = 100 — Chart 16



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 17



Sources: SFSO, SNB calculations

All of the stress scenarios concentrate on macroeconomic and financial risk factors.[22] The impact of the different scenarios on the Swiss banking sector as regards banks' loss potential and resilience is examined in chapters 4 and 5.

Baseline scenario

Under the baseline scenario, government and central bank measures taken globally help to limit the damage of the COVID-19 pandemic to the economy and the lockdown measures can gradually be lifted. The stabilisation in financial markets continues and global monetary policy remains accommodative. Banks keep supplying the economy with credit thanks to capital and liquidity buffers built up since the global financial crisis. The global economy partially recovers in H2 2020, but growth for 2020 as a whole remains clearly negative. As economic activity catches up, growth is above trend in 2021 and 2022. In Switzerland, however, GDP does not recover to its end-2019 level until 2022.

Generic stress scenarios

Protracted euro area recession: This scenario involves protracted recessions for the euro area and Switzerland. Stock prices drop and corporate spreads widen globally. In many countries, including Switzerland, real estate prices fall significantly. Interest rates in the euro area and Switzerland remain negative for an extended period.

US recession: A severe recession spreads from the US to the rest of the world. Global financial stress rises significantly, and both real estate and stock prices drop sharply.[23]

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

Interest rate shock: In this scenario, increasing inflation triggers a rapid rise in interest rates around the globe. Subsequently, economic growth slows significantly and real estate prices fall sharply.

The US recession scenario and the protracted euro area recession scenario offer a benchmark for the potential effects of a worse-than-expected development of the COVID-19 pandemic. If containment measures cannot be eased as expected or even have to be tightened again, the recession would be longer and deeper. This could also have an increasingly adverse effect on real estate prices and lead to renewed turbulence on the financial markets. Such adverse developments are assumed under both the US recession scenario and the protracted euro area recession scenario. Under both scenarios, the economic downturn lasts considerably longer than under the baseline scenario. The cumulative drop in GDP in the advanced economies is also greater under the US recession scenario than under the baseline scenario. Furthermore, the US recession scenario assumes a sharp fall in real estate prices both in the US and in Switzerland. It also assumes severe stress on the financial markets, which, in terms of the turmoil on the credit and securitisation markets, is similar to that experienced during the global financial crisis.

22 In addition to the risks covered by these scenarios, operational and legal risks (including cyber risks) can materialise, in most cases independently of the underlying economic scenario.
23 This scenario specification is similar to the 'severely adverse scenario' in the US Federal Reserve's 2020 stress test.

3 Structure of the Swiss banking sector

The banking sector plays an important role in Switzerland's economy, as banks are the main providers of essential financial services. These so-called 'systemically important functions' include, in particular, domestic deposit and lending business. Moreover, the banking sector accounts for around 5% of value added in Switzerland, and employs about 106,000 people.

The Swiss banking sector is characterised by its size, the dominance of a small number of banks and its international integration. At the end of 2019, total banking sector assets stood at roughly CHF 3,600 billion. This is equivalent to around 500% of Swiss GDP – a high ratio by international standards (cf. table 2). A look back over the last 25 years shows that this ratio climbed steadily to over 800% until the beginning of the global financial crisis of 2007/08, but has since fallen again (cf. chart 18). This development is exclusively attributable to foreign assets – especially those held by the two largest Swiss banks, Credit Suisse and UBS. At the same time, the ratio of domestic assets to GDP has remained relatively stable, as has domestic employment in the Swiss banking sector.[1]

The Swiss banking sector can be broken down into three broad categories: (i) the two globally active banks, Credit Suisse and UBS, (ii) the domestically focused banks (DFBs),[2] primarily comprising regional, cantonal and Raiffeisen banks, and (iii) other banks, which include domestic banks as well as branches and subsidiaries of foreign banks. These three bank categories differ with regard to size, market share in domestic business, and business model.

Of the 237 banks in Switzerland, the SNB has designated five institutions as systemically important for the country. Systemically important banks are those whose failure could cause serious damage to the Swiss economy and the Swiss financial system on account of their size, interconnectedness with the economy and financial system, as well as their services which cannot be substituted at short notice.[3] Due to their systemic importance, they are subject to special regulatory requirements under the Banking Act.[4] The five systemically important banks are the two globally active banks, Credit Suisse and UBS, and three domestically focused banks, ZKB, Raiffeisen Group and PostFinance. Credit Suisse and UBS are additionally identified as global systemically important banks (G-SIBs) by the Financial Stability Board (FSB).

An international comparison shows that the five systemically important banks are large relative to the economy (cf. chart 19). This is particularly true of the two globally active banks, Credit Suisse and UBS. In each case, their

1 Between 2005 and 2019, domestic employment decreased slightly from approximately 110,000 to approximately 106,000 on a consolidated basis. Data are only available from 2005 onwards. Source: SNB.

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

3 Cf. arts. 7 and 8 Banking Act.

4 These special requirements include higher capital and liquidity requirements as well as specific requirements for resolvability in a crisis (cf. art. 9 Banking Act).

INTERNATIONAL COMPARISON OF BANKING SECTOR SIZE

2018 Table 2

	Size of banking sector (ratio of total assets to annual GDP)
Switzerland	503%
United Kingdom	417%
Netherlands	317%
France	307%
Canada	274%
Sweden	261%
Belgium	216%
Japan	214%
Germany	212%
Italy	149%
United States	100%

Sources: Central bank websites, IMF

total exposure,[5] as a measure of bank size, is roughly 140% of Swiss GDP. The three DF-SIBs are also large relative to the domestic economy in an international comparison, with total exposure in each case of between 18% and 37% of GDP.[6]

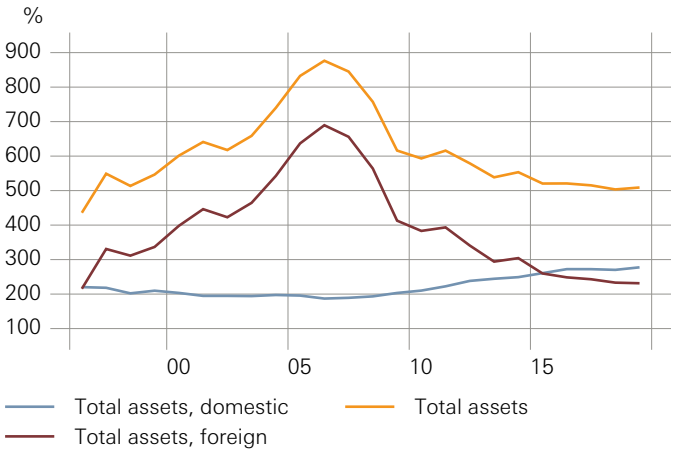
The five systemically important banks play a prominent role in the Swiss banking sector. In terms of total assets, the two globally active banks dominate, each accounting for approximately one-quarter of total banking sector assets. In the domestic deposit and lending business, the three DF-SIBs also play an important role. Together, the five systemically important banks account for more than half of this domestic business (cf. charts 20 and 21). The other domestically focused banks account for roughly one-third. The market share of the 'other banks' category is less than one-tenth.

The business models of the three bank categories are very different. The two globally active banks, Credit Suisse and UBS, are universal banks with a large proportion of foreign business (roughly 70% of their respective balance sheets). Both institutions place special emphasis on international wealth management, but they also have substantial operations in domestic deposit and lending business as well as investment banking. While investment banking has been scaled back since the global financial crisis, it continues to make up about one-third of both Credit Suisse's and UBS' total exposure. The income

5 Total exposure is the sum of on and off-balance-sheet positions as defined in the Basel III leverage ratio framework.
6 A comparison of euro area banks to euro area GDP (see dark yellow bars in chart 19) serves as a useful alternative benchmark since these banks have access to centralised funding and capitalisation schemes (cf. srb.europa.eu/en/content/single-resolution-fund and consilium.europa.eu/media/37268/tor-backstop_041218_final_clean.pdf).

SIZE OF BANKING SECTOR

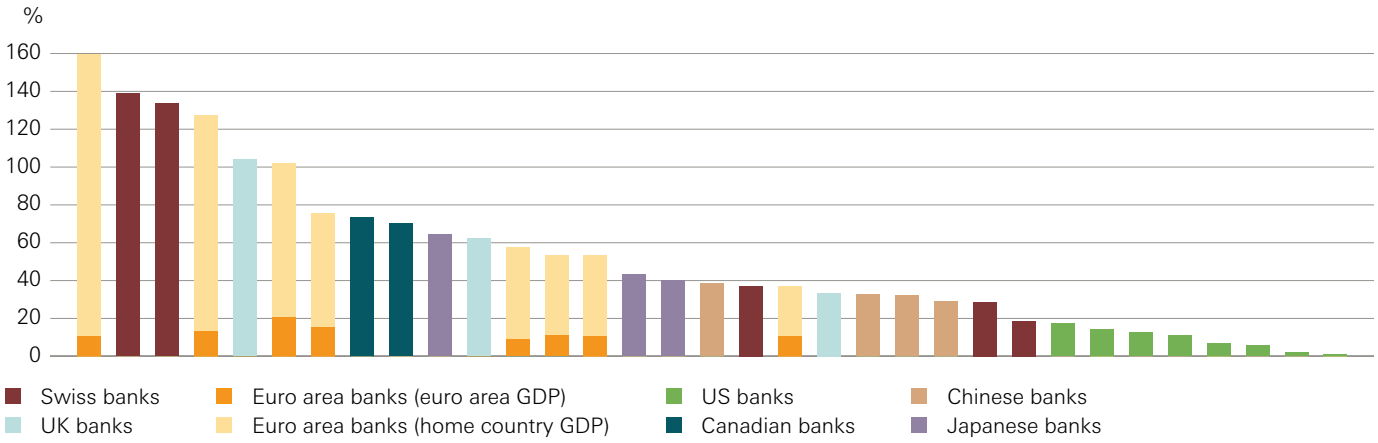
As a percentage of GDP, consolidated — Chart 18



Source: SNB

BANK SIZE TO GDP OF JURISDICTION[1]

G-SIBs and Swiss DF-SIBs — Chart 19



1 Bank size measured by total exposure as at Q1 2020; GDP as at 2018.
Sources: Bank disclosures, IMF, SNB calculations

MARKET SHARE DOMESTIC LOANS

2019 Chart 20

Credit Suisse **14%**
UBS **14%**
PostFinance **1%**
Raiffeisen **16%**
ZKB **8%**
Other DFBs **41%**
Other banks **7%**

Source: SNB

MARKET SHARE DOMESTIC DEPOSITS

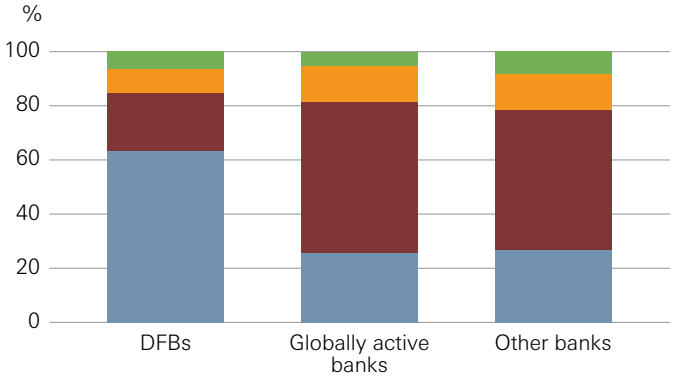
2019 Chart 21

Credit Suisse **14%**
UBS **17%**
PostFinance **9%**
Raiffeisen **14%**
ZKB **6%**
Other DFBs **31%**
Other banks **9%**

Source: SNB

INCOME STRUCTURE

As a percentage of total revenue, 2019 Chart 22



Source: SNB

structure of both banks is relatively diversified, with the largest share coming from fee and commission income due to their focus on wealth management (cf. chart 22).

The domestically focused banks concentrate on deposit and lending business, with a special focus on mortgage lending. Interest income is therefore the dominant component of their total income. Other sources of income play a smaller role (cf. chart 22). Their domestic assets account for about 90% of their total assets.

In the 'other banks' category, most institutions focus on wealth management. Accordingly, fee and commission income makes up around half of their total income. Foreign assets account for about 50% of total assets held by these banks, reflecting their international clientele.

The *Financial Stability Report* focuses on those banks primarily responsible for providing systemically important functions for the Swiss economy. These are the globally active banks, Credit Suisse and UBS, and the domestically focused banks. These two groups of banks are discussed in separate chapters. The three DF-SIBs, ZKB, Raiffeisen Group and PostFinance, are analysed together with the other domestically focused banks. However, due to their particular relevance for financial stability, they are also discussed separately wherever relevant. The 'other banks' category is not analysed in the *Financial Stability Report* because these banks are less relevant for the domestic lending and deposit business.

4 Globally active banks

The economic consequences of the COVID-19 pandemic (cf. subchapter 2.1) pose significant challenges for the two globally active Swiss banks, Credit Suisse and UBS. However, both institutions are well placed to face these challenges and support the real economy.

In the context of the baseline scenario (cf. subchapter 2.5), these economic consequences would affect Credit Suisse and UBS through two main channels. First, credit quality is expected to deteriorate both in Switzerland and abroad. Second, the correction on the stock markets has reduced the value of assets under management and the associated uncertainty could lower demand for client and capital market transactions. This, in turn, could translate into lower earnings from wealth management and investment banking. The overall impact on the two banks under the baseline scenario is likely to be limited as a result of the partial economic recovery expected in H2 2020 and the stabilisation in financial markets.

The economic consequences of the COVID-19 pandemic for the two globally active Swiss banks nevertheless remain highly uncertain. The longer and deeper the domestic and global economic downturn, the greater the negative impact on the quality of the banks' loan portfolios will be. Worse-than-expected economic developments in combination with renewed turbulence on the financial markets would weigh further on banks' profitability. Subchapter 4.1 describes the impact of various scenarios on the risk exposure of the globally active banks.

Credit Suisse and UBS are well placed to face these risks. This favourable situation is attributable in particular to the capital buffers which the two banks have been building up over recent years, in line with the TBTF regulations (cf. subchapter 4.2.1). The scenario analysis indicates that, thanks to these capital buffers, the two banks are able to cope with significantly worse developments in the economic environment than are assumed under the baseline scenario. At the same time, this analysis shows that the current calibration of the TBTF capital requirements is necessary to ensure adequate resilience at these two banks. Periods of heightened uncertainty, such as the one the banks are currently facing, demonstrate the value of robust regulatory requirements.

In addition to strengthening their capital position, both globally active banks have improved their profitability since the global financial crisis (cf. subchapter 4.2.2). Sustainable profits are the first line of defence for absorbing losses and help to restore the capital base following a stress event. Moreover, the diversified income structure of both banks contributes positively to their resilience. The profitability outlook has deteriorated due to the current challenging conditions, however.

Market indicators for banks worldwide reflect the uncertainty regarding the scale of the COVID-19 pandemic's economic impact (cf. subchapter 4.3). Indicators such as stock prices and CDS premia reacted negatively after the crisis broke. Although this correction has been partly reversed, market volatility remains elevated.

In the area of resolution (cf. subchapter 4.4), both globally active banks reached an important milestone – FINMA deems the emergency plans submitted by Credit Suisse and UBS at the end of 2019 to be effective. In these plans, the banks must document how they would maintain systemically important functions for Switzerland if they were at risk of insolvency. Coupled with increased resilience, these emergency plans significantly reduce risks for the taxpayer. However, work is in progress to create the conditions for an orderly resolution of the entire banking group in each case ('global resolution plan').

4.1 RISK EXPOSURE

The two globally active Swiss banks are exposed to four main categories of risk: credit risk, market risk, operational risk and business risk. The following subchapter describes these risk categories in qualitative terms and, if applicable, illustrates their relative importance using RWA and exposure data. The subsequent subchapter describes the potential impact of various scenarios on these risk exposures.

4.1.1 RISK CATEGORIES

Credit risk

Credit risk is the risk of loss due to a client or counterparty failing to make contractually agreed payments. At 70%, credit risk makes up the largest share of the two globally active banks' total RWA (cf. chart 23). Their credit exposures arise not only from loans on their balance sheets but also from off-balance-sheet positions and counterparty exposures from derivatives and securities financing transactions. All these exposure categories together represent 65% of the globally active banks' total exposure (cf. chart 24).

Table 3 gives an overview of the credit portfolios of the two globally active banks, broken down by counterparty type. The retail portfolio, consisting chiefly of domestic mortgages and Lombard loans,[1] is the largest in terms of exposure. From a risk perspective, credit exposure to corporate clients, arising from global investment banking and Swiss corporate banking, is more material. The higher average risk weight of corporate credit exposures reflects in particular the lower degree of collateralisation.

Market risk

Market risk is the risk of loss due to adverse movements in market variables, such as equity prices or credit spreads. At 6%, market risk accounts for a much smaller share of RWA at the globally active Swiss banks than credit risk (cf. chart 23). Market risk arises in particular from trading assets and derivatives positions; at 22%, these represent a substantial share of both banks' total exposure (cf. chart 24). Trading book positions are hedged to a large extent, which explains market risk's relatively small contribution to RWA.[2]

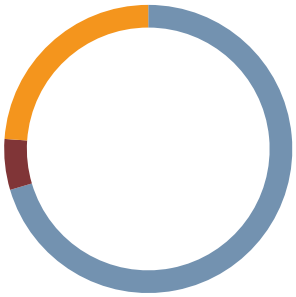
Despite its small contribution to RWA, market risk is an important risk category for the globally active banks for two reasons. First, the applied hedging strategies may not

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

2 Value at risk (VaR), a statistical measure of short-term loss potential in the trading book and one of the inputs for calculating market risk RWA, is relatively small at both banks due to the hedging of the different trading book positions. At end-2019, regulatory VaR (time horizon 10 days and confidence level 99%) was CHF 71 million at Credit Suisse and USD 16 million at UBS. Source: Banks' Pillar 3 reports.

BREAKDOWN OF RWA

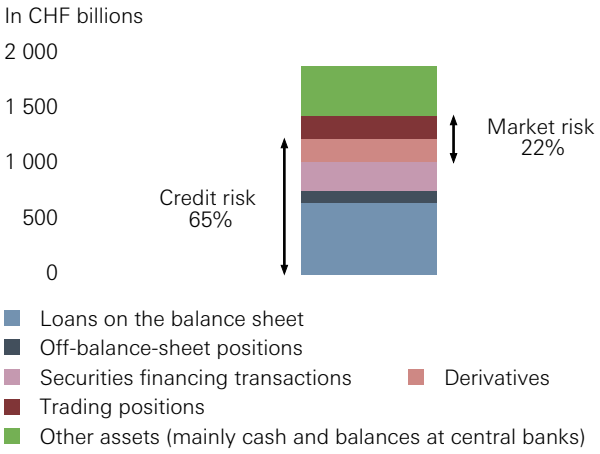
Globally active banks as at Q1 2020 — Chart 23



Sources: Bank disclosures, SNB calculations

BREAKDOWN OF TOTAL EXPOSURE

Globally active banks as at Q1 2020 — Chart 24



Sources: Bank disclosures, SNB calculations

CREDIT PORTFOLIOS OF THE GLOBALLY ACTIVE BANKS[1]

Q4 2019, in CHF billions — Table 3

	Credit Suisse			UBS		
	Exposure	RWA	Average risk weight	Exposure	RWA	Average risk weight
Sovereign exposures	99	2	2%	154	4	3%
Exposures to banks and institutions	31	9	30%	53	15	27%
Corporate exposures	184	101	55%	143	72	51%
Retail exposures	202	34	17%	319	47	15%
Of which residential mortgages	114	21	18%	151	31	20%
Other exposures	20	16	81%	14	13	92%
Total	**536**	**163**	**30%**	**683**	**151**	**22%**

1 Includes credit risk and counterparty credit risk but excludes exposures to central counterparties.

Sources: Bank disclosures (converted from USD to CHF for UBS), SNB calculations

fully protect against very large market shocks.[3] This was borne out by experience during the global financial crisis, where traded positions suffered large losses despite being hedged against smaller market shocks. Second, mark-to-market losses may also occur on fair-value positions in the banking book, which do not fall under the market risk framework for regulatory capital purposes. Examples are illiquid equity investments or lending-related positions in the banking book that are fair-valued.

Operational risk

Operational risk is the risk of loss due to inadequate procedures, fraud or failed internal systems. It also includes legal risk. Operational risk is material at the globally active Swiss banks and reflects, in particular, the complexity of international business activities. Operational risk accounts for 24% of the two banks' total RWA. This is relatively high by international standards[4] and reflects the operational loss history of both institutions, which includes several costly legal cases.

Business risk

Business risk refers to the risk of reduced earnings due to a drop in business volume or client activity. Business risk plays an important role for the globally active Swiss banks due to their wealth management and investment banking activities. For instance, a severe shock on the financial markets, followed by ongoing uncertainty, would reduce both the value of assets under management and the demand for client transactions. As a result, fee and commission income would decrease. There is no specific RWA requirement for business risk.

4.1.2 IMPACT OF SCENARIOS

The SNB focuses on the current baseline scenario and on the generic stress scenarios described in subchapter 2.5 when assessing the magnitude of the globally active banks' risk exposure and loss potential.

Baseline scenario

The current economic conditions and the developments considered under the baseline scenario deviate strongly from a normal market and business environment. Q1 2020 results reveal the impact of the crisis to date on the various risk categories.

Regarding *credit risk*, the deterioration in credit quality has led to higher provisions. Credit Suisse has set aside CHF 568 million and UBS USD 268 million for credit losses in Q1.[5] The provisions primarily concern credit exposures to corporate clients in international investment banking and domestic business. In the retail portfolio, provisions have remained low. Overall, the deterioration in credit quality assumed under the baseline scenario could result in credit loss provisions remaining elevated in the next few quarters.

In the case of *market risk*, positions in the trading book have generally been well hedged against the significant turbulence of Q1. Thanks to their hedging strategies, the banks were even able to benefit from the sharp rise in volatility. For certain fair-value positions, however, they had to reduce their valuations in Q1, which led to mark-to-market losses of approximately CHF 200 – 400 million for each bank.[6] The baseline scenario does not assume further market turbulence and, consequently, no further losses from market risk occur under this scenario.

Business risk, on the other hand, did not materialise in Q1. The globally active banks' earnings were in fact above average due to increased client activity. However, the reduction in the value of client assets due to the market correction may have an adverse effect on wealth management fee income in the coming quarters.[7] Furthermore, the elevated uncertainty may lead to a reduction in the demand for client transactions. In investment banking, too, demand for transactions may remain muted.[8]

RWA at both banks rose in Q1 – at Credit Suisse by CHF 10 billion (up 3%) and at UBS by CHF 25 billion (up 10%). The increase is due to higher credit and market risk RWA and is largely related to the current COVID-19 crisis. Total exposure at both banks also increased in Q1 due to market turbulence – at Credit Suisse by CHF 48 billion (up 5%) and at UBS by CHF 39 billion (up 4%).[9] The rise is chiefly attributable to higher balances with central banks, higher derivatives exposures, and drawdowns in corporate lending positions.

Overall, the risk effects described are weighing on the profitability of the two globally active banks. They could also result in a further rise in RWA. Under the baseline scenario, the impact on both globally active banks is likely to be limited as a result of the partial economic recovery expected in H2 2020 as well as the stabilisation in financial markets.

3 The mutual hedging of derivatives and trading positions may be impaired by very large market shocks. Previously strongly correlated risk factors may suddenly behave differently in a stress scenario (basis risk). Furthermore, the risk profile of non-linear derivatives may change substantially under such a scenario.
4 At end-June 2019, operational risk as a share of G-SIBs' RWA averaged around 15%. Source: *Basel III Monitoring Report*, April 2020.
5 These are credit loss provisions in Q1 2020 for portfolios that are accounted for on an accrual or amortised cost basis.
6 In Q1 2020, Credit Suisse reported lower valuations in its fair value loan portfolio of CHF 444 million. In the same period, UBS reduced valuations in its fair value loan portfolio by USD 183 million, offset by gains on corresponding hedges. In addition, UBS reported mark-to-market losses of USD 143 million on its stock of auction rate securities. The lower valuations in the fair value loan portfolio at both banks are largely attributable to non-investment grade underwriting (leveraged finance) exposures.
7 UBS, Q1 2020 earnings call remarks: "The lower invested asset base will be a headwind in the second quarter this year. We would expect recurring fee income to be down between [USD] 200 and 300 million sequentially in the second quarter before management actions."
8 Credit Suisse, Q1 2020 financial report: "If these conditions persist or worsen, they are likely to continue to result in lower investment banking client activity, adversely impacting our financial advisory and underwriting fees, together with our credit exposures."
9 This increase in total exposure does not take into account the temporary exclusion of central bank reserves (cf. footnote 12).

The economic consequences of the COVID-19 pandemic – and hence the effects on the two globally active Swiss banks – nevertheless remain highly uncertain. Worse-than-expected economic developments in combination with renewed turbulence on the financial markets would weigh further on banks' profitability and credit quality. The longer and deeper the domestic and global economic downturn, the greater the negative impact on the banks' loan portfolios will be.

Generic stress scenarios

The loss potential under the generic stress scenarios described in subchapter 2.5 continues to be substantial. It is highest under the US recession scenario, which combines a deep recession in the advanced economies with severe stress on the global financial markets. The interest rate shock, protracted euro area recession and emerging markets crisis scenarios all exhibit loss potentials of a similar magnitude, albeit somewhat lower than under the US recession scenario. Under all four scenarios, credit losses stem primarily from corporate loan portfolios and counterparty exposures in investment banking, as well as from retail and corporate loan portfolios in Switzerland. Depending on the severity of the assumed market shocks, the scenarios lead to mark-to-market losses on fair-value debt and equity positions and to a reduction in fee and commission income. Irrespective of the scenario considered, losses can also result from operational risks.

The US recession scenario and the protracted euro area recession scenario offer a benchmark for the potential effects of a worse-than-expected development of the COVID-19 pandemic. If containment measures cannot be eased as expected or even have to be tightened again, the recession would be longer and deeper. This could also have an increasingly adverse effect on real estate prices and lead to renewed turbulence on the financial markets. Such adverse developments are assumed under both the US recession scenario and the protracted euro area recession scenario.

4.2 RESILIENCE

Regulatory capital ratios are the starting point for the analysis of resilience. Profitability makes an important contribution to the accumulation of capital and thus to resilience. For banks, sustainable profits are the first line of defence for absorbing losses and help to restore capital following a stress event. The following subchapters look at these two elements of resilience in more detail.

4.2.1 REGULATORY CAPITAL RATIOS

Solid capital base

Both globally active Swiss banks had fully built up their capital buffers under the Swiss TBTF regulations on a consolidated basis by the time the COVID-19 pandemic broke out. Credit Suisse and UBS are thus well placed to face the challenges presented by the current difficult environment and support the real economy.[10] The SNB's analysis based on the generic stress scenarios (cf. subchapter 4.1) indicates that, thanks to these capital buffers, the two banks are able to cope with significantly worse economic developments than those assumed under the baseline scenario. At the same time, this analysis shows that the current calibration of the TBTF capital requirements is necessary to ensure adequate resilience at the two banks.

At the end of Q1 2020, Credit Suisse's look-through[11] going-concern risk-weighted ratio stood at 15.2%; at UBS it stood at 17.3% (cf. table 4). Compared to Q1 2019, going-concern capital as well as RWA have increased for both banks, with the latter increasing due to higher credit and market risk (cf. subchapter 4.1). In the case of UBS, this led to a slight decrease in its risk-weighted ratio. The leverage ratio was 4.8% for Credit Suisse and 5.2% for UBS – almost unchanged compared to Q1 2019 as total exposure increased in line with going-concern capital. Based on the grandfathering perspective, and taking into account the temporary exclusion of central bank reserves from the leverage ratio calculation granted by FINMA,[12] the leverage ratios of the two globally active banks are 5.8% (Credit Suisse) and 5.9% (UBS).

10 In October 2019, the BCBS published a newsletter to emphasise that capital buffers are designed to be usable. According to this newsletter, capital buffers "are all underpinned by the following objectives: absorbing losses in times of stress by having an additional overlay of capital that is above minimum requirements and that can be drawn down; and helping to maintain the provision of key financial services to the real economy in a downturn by reducing incentives for banks to deleverage abruptly and excessively." Source: www.bis.org/publ/bcbs_nl22.htm.

11 The analysis in this report focuses on the look-through perspective. In this perspective, eligible going-concern instruments are defined according to the final capital quality requirements of the Swiss TBTF regulations, i.e. after expiry of all transitional provisions. Going-concern capital 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. By contrast, in their disclosures the two globally active banks use a grandfathering perspective. In the grandfathering perspective, eligible going-concern instruments are defined according to the regulations currently in force. These allow the temporary inclusion of instruments that are not eligible as going-concern capital under the final TBTF requirements. Specifically, the banks can use low-trigger contingent capital instruments (LT CoCos) with AT1 capital quality up to their first call date in order to comply with the going-concern requirements currently applicable. Credit Suisse and UBS can benefit from this grandfathering perspective until 2024 and 2025, respectively.

12 On 25 March 2020, FINMA introduced the temporary exclusion of central bank reserves from the calculation of the leverage ratio. This measure initially applied until 1 July 2020 but has been extended until 1 January 2021. Cf. finma.ch/en/news/2020/05/20200519-news-aufsichtsmitteilung-062020/. As at Q1 2020, Credit Suisse and UBS disclosed a temporary exposure reduction of CHF 88 billion and CHF 76 billion, respectively, due to this measure. Source: Banks' quarterly reports for Q1 2020.

GOING-CONCERN CAPITAL RATIOS AND REQUIREMENTS

Table 4

	Credit Suisse			UBS		
	Q1 2019	Q1 2020	Require-ment[1]	Q1 2019	Q1 2020	Require-ment[1]
TBTF2 ratios (look-through, in percent)[2]						
TBTF2 CET1 capital ratio	12.5	12.1	10.0	13.0	12.8	9.6
TBTF2 going-concern capital ratio	14.5	15.2	14.3	17.6	17.3	13.9
TBTF2 CET1 leverage ratio	4.0	3.8	3.5	3.8	3.8	3.4
TBTF2 going-concern leverage ratio	4.7	4.8	5.0	5.2	5.2	4.9
TBTF2 ratios (with grandfathering, in percent)[3]						
TBTF2 CET1 capital ratio	12.5	12.1	10.0	13.0	12.8	9.6
TBTF2 going-concern capital ratio	16.1	16.9	14.3	18.5	18.1	13.9
TBTF2 CET1 leverage ratio	4.0	3.8	3.5	3.8	3.8	3.4
TBTF2 going-concern leverage ratio	5.2	5.3	5.0	5.4	5.4	4.9
Basel III ratios (in percent)[4]						
Basel III CET1 capital ratio	12.6	12.1	8.0	13.0	12.8	8.0
Basel III Tier 1 capital ratio	16.2	16.9	9.5	18.5	18.1	9.5
Basel III Tier 1 leverage ratio	5.2	5.3	3.5	5.4	5.4	3.5
Levels (look-through, in CHF billions)						
TBTF CET1 capital	36.4	36.3	–	34.5	35.4	–
High-trigger additional Tier 1 contingent capital (HT AT1 CoCos)	5.8	9.6	–	12.3	12.3	–
Low-trigger additional Tier 1 contingent capital (LT AT1 CoCos)[5]	4.7	4.9	–	2.4	2.4	–
TBTF RWA	291	301	–	266	276	–
TBTF total exposure	902	958	–	907	921	–

1 As of Q1 2020. 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. The temporary exclusion of central bank reserves from the leverage ratio calculation granted by FINMA is not taken into account.
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. The temporary exclusion of central bank reserves from the leverage ratio calculation granted by FINMA is not taken into account.
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 G-SIBs of 1% for both banks. The requirement for the Basel III Tier 1 capital ratio comprises, in addition, a minimum of 1.5% to be met with capital of at least AT1 capital quality. The leverage ratio requirement comprises the minimum of 3% and the surcharge for G-SIBs of 0.5% for both banks.
5 Qualified for grandfathering.

Sources: Bank disclosures, SNB calculations

In an international comparison, both globally active Swiss banks' Basel III risk-weighted capital ratios continue to be well above the average for G-SIBs. Their Basel III leverage ratios are now in line with the corresponding international average (cf. chart 25).

Since publication of the last *Financial Stability Report*, two developments have affected the globally active banks' capital requirements. First, the latest revision of the Capital Adequacy Ordinance (CAO)[13] included an adjustment in the calculation of the capital surcharges linked to a systemically important bank's size. As provided for in the TBTF regulations,[14] the bucket thresholds based on total exposure were raised to take account of GDP growth over recent years. Second, for UBS, the requirements of the Swiss TBTF regulations have declined, reflecting a reduction of the bank's market share in the domestic credit and deposit business. As of 1 January 2020, the going-concern capital requirements for UBS decreased from 5% (leverage ratio) and 14.3% (risk-weighted) to 4.875% and 13.9%, respectively. Overall, these two regulatory developments increase the leeway for the two globally active Swiss banks to raise their total exposure and increase lending without progressing to a bucket for the leverage ratio requirement above the initial level of 5%.

13 Cf. Federal Council's media release of 27 November 2019 (www.admin.ch/gov/en/start/documentation/media-releases.msg-id-77254.html).
14 Cf. explanatory report on amendments to CAO of 13 May 2016 (not available in English). As of 1 January 2020, art. 129 para. 5 explicitly provides for a periodic review of these thresholds.

4.2.2 PROFITABILITY

Long-term profitability trend positive, but challenging environment weighs on outlook

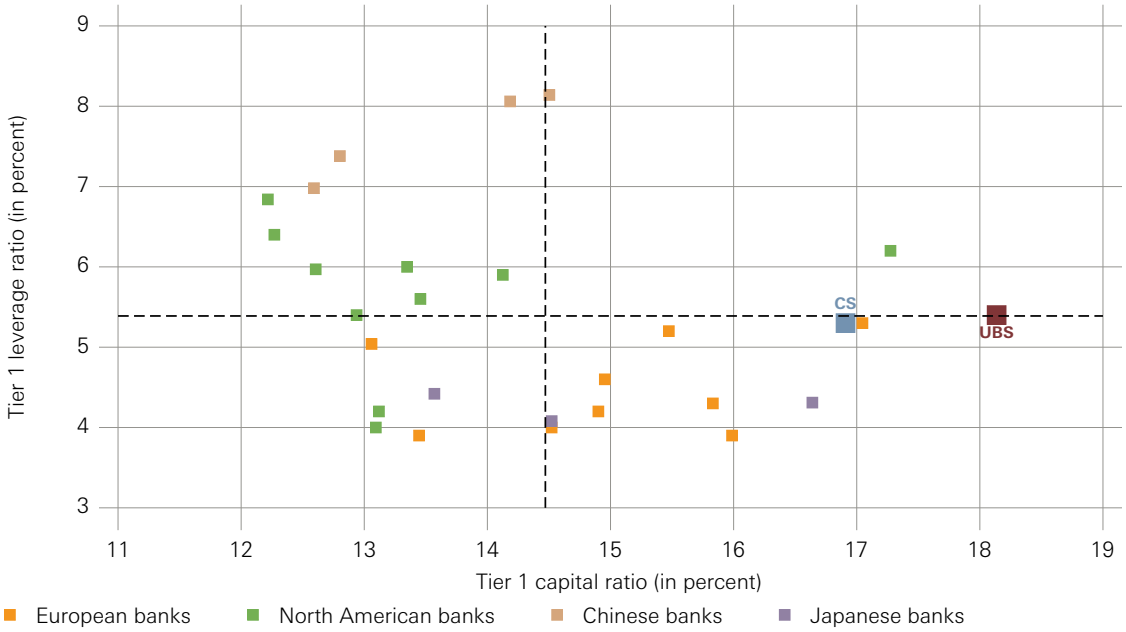
The globally active Swiss banks' profitability has developed favourably over recent years. However, the outlook has now weakened due to the marked deterioration in economic and financial conditions.

The profitability of the two institutions increased overall in 2019 and lies between that of European and US peers.[15] The long-term trend has been positive. At both banks, return on assets (ROA, defined as pre-tax profit as a percentage of total assets) is now above the average calculated for both the post-crisis period (2011–2017) and the pre-crisis period (1995–2006) (cf. chart 26).[16] The improvement in profitability over recent years is due partly to a more favourable operating environment post-crisis and partly

15 For the international comparison of profitability, the sample is limited to other G-SIBs with a business model that resembles that of the globally active Swiss banks. Specifically, the sample includes, besides Credit Suisse and UBS, the following banks: JP Morgan Chase, Bank of America, Citigroup, Morgan Stanley, Goldman Sachs, Barclays, HSBC, Deutsche Bank, Société Générale and BNP Paribas.
16 From a financial stability perspective, profitability metrics that relate profits to the size of the balance sheet are particularly relevant. ROA is such a metric that is widely used and available for a long time period. Profits relative to equity (return on equity, ROE) is a popular metric among investors but has less relevance from a financial stability point of view.

INTERNATIONAL COMPARISON OF TIER 1 CAPITAL[1]

G-SIBs, Q1 2020 — Chart 25



1 The dashed lines depict the (unweighted) averages.
Sources: Bank disclosures

to cost-saving measures and a strategic reorientation towards wealth management.[17]

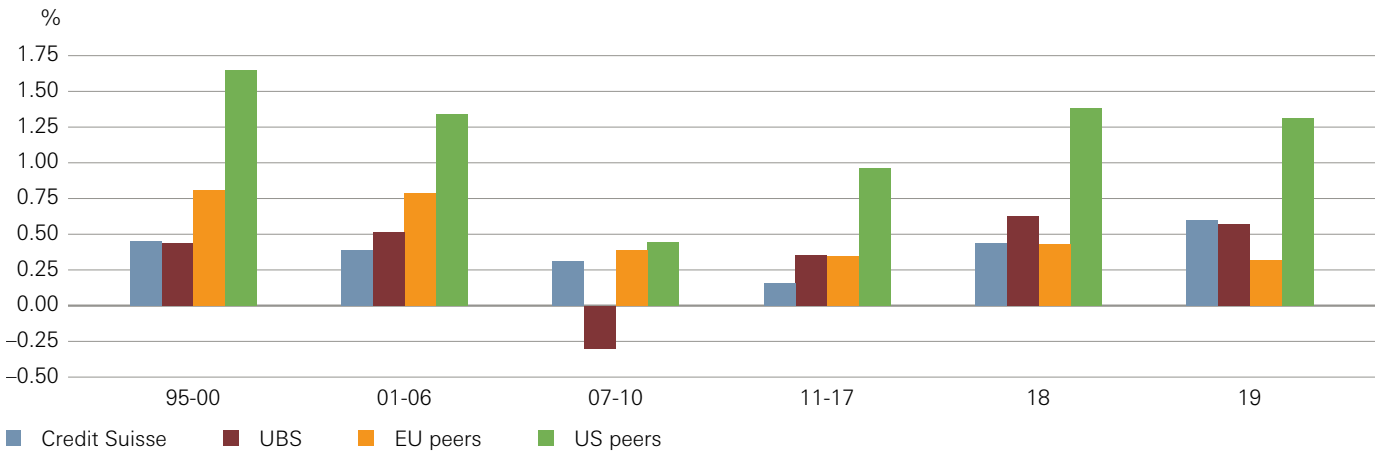
The diversified income structure of the two globally active banks contributes positively to their resilience. By international standards, both institutions exhibit a high share of fee and commission income, which is mainly attributable to the key role played by their wealth management business (cf. chart 27). The contribution of net interest income (NII) at both institutions is relatively small compared with international peers and with domestically focused Swiss banks (cf. chapter 5). Furthermore, NII at Credit Suisse and UBS is diversified with respect to currency and business activity and has therefore declined only slightly in recent years, despite persistently low interest rates in Switzerland.

Historical experience and economic analysis show that good capitalisation and solid profitability are compatible as core elements of resilience. Clients value robust and crisis-proof banks, in particular in the domain of wealth management. Furthermore, banks with a stronger capital base benefit from lower funding costs and are better placed to take advantage of (capital-intensive) business opportunities, especially in challenging times. International comparisons, too, show that solid

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

RETURN ON ASSETS (REPORTED PRE-TAX PROFIT AS A PERCENTAGE OF ASSETS)

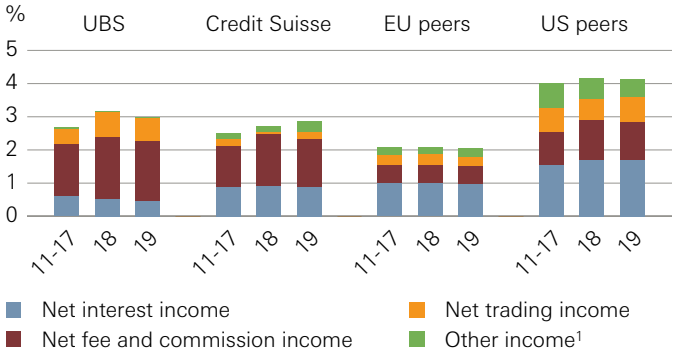
Chart 26



Sources: Refinitiv, SNB calculations

EARNINGS BY TYPE (AS A PERCENTAGE OF ASSETS)

Chart 27



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

Sources: Moody's, SNB calculations

capitalisation tends to be associated with higher profitability in subsequent years (cf. charts 28 and 29).[18] Both the capitalisation and the profitability of Credit Suisse and UBS have improved over recent years.

Looking ahead, market participants and the banks themselves expect the profitability of the two globally active Swiss banks and their international peers to come under pressure in the current challenging economic environment.[19] UBS and Credit Suisse were still reporting strong profits in Q1 2020, partly because their trading business benefited in the short term from higher volatility. At the same time, they also reported an increase in credit loss provisions and markdowns in the fair-value loan portfolio. In addition, the reduction in the value of client assets due to the market correction may negatively affect their fee and commission income (cf. subchapter 4.1).

4.3 MARKET ASSESSMENT

Market-based indicators provide a complementary assessment of the two globally active Swiss banks' resilience, in addition to regulatory capital ratios and profitability metrics.

Market assessment of creditworthiness – comparable to other globally active banks

CDS premia reflect the market's assessment of a bank's creditworthiness. The greater the perceived credit risk, the higher the premium on a given CDS.[20] The CDS premia of both globally active Swiss banks initially declined until early 2020. In the wake of recent developments on the financial markets, CDS premia increased sharply. Having reached a peak in March, they have since been declining. CDS premia have remained well below the levels reached in the global financial crisis and the euro area debt crisis. In an international comparison, CDS premia for Credit Suisse and UBS are currently around the median for globally active banks (cf. chart 30).

The market's assessment of banks' creditworthiness is also reflected in the stand-alone ratings of the three major rating agencies (Moody's, S&P and Fitch). These evaluate the intrinsic financial strength of the banks, assuming no extraordinary external support.[21] The stand-alone ratings of the globally active Swiss banks remain unchanged

18 For further analysis, cf., for example, Berger and Bouwman (2013), 'How does capital affect bank performance during financial crises?', Journal of Financial Economics; Gambacorta and Shin (2018), 'Why bank capital matters for monetary policy', Journal of Financial Intermediation.

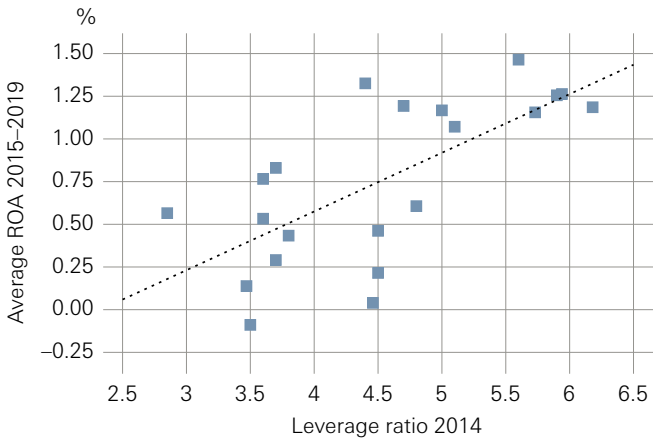
19 Credit Suisse writes in its Q1 2020 financial report: "The pandemic and the consequences for markets and the global economy, at least in the first half of 2020, is likely to affect the Group's financial performance, including potentially significant impacts for credit loss estimates, as well as impacts on trading revenues, net interest income and potential goodwill assessments." UBS writes in its Q1 2020 financial report: "Looking ahead, the range of possible outcomes remains very wide, and it is too early to make reliable predictions about the timing and shape of any potential economic recovery. Lower asset prices will reduce our recurring fee income, lower interest rates will present a headwind to net interest income, and client activity levels will likely decrease, affecting transaction-based income. The continued disciplined execution of our strategic plans will help to mitigate this."

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

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

ROA AND LEVERAGE RATIO OF G-SIBS

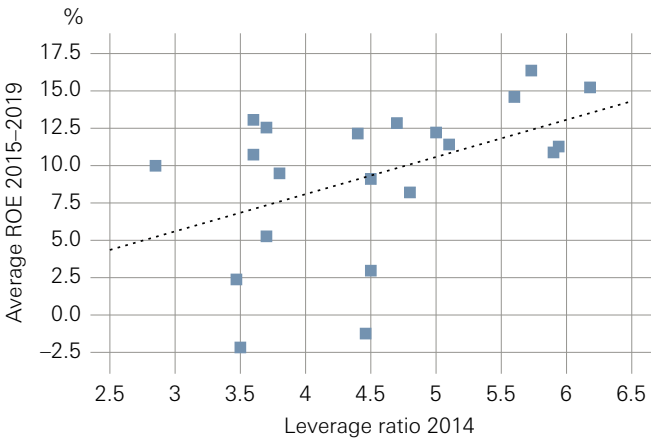
Chart 28



Sources: Bank disclosures, Refinitiv

ROE AND LEVERAGE RATIO OF G-SIBS

Chart 29



Sources: Bank disclosures, Refinitiv

compared to last year's *Financial Stability Report*. The stand-alone ratings of the globally active Swiss banks are comparable to those of other G-SIBs (cf. chart 31 for an international comparison based on Moody's stand-alone ratings).

Stock market valuation relative to other G-SIBs primarily reflects differences in profitability

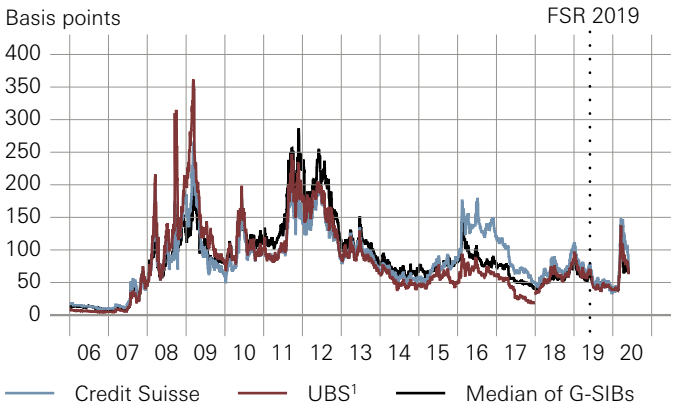
Stock market valuation can be measured using the ratio of market capitalisation over book value of total equity (cf. chart 32). The stock market valuation of Credit Suisse and UBS – along with the other G-SIBs – fell significantly due to recent developments on the financial markets, although it has since partly recovered. Using the same measure, the valuation of the two Swiss banks is currently above the average for European G-SIBs, but below the average for US G-SIBs.

The observed differences in stock market valuation between the globally active Swiss banks and their international counterparts primarily reflect differences in profitability. Chart 33 plots the metric for stock market valuation (market capitalisation over book value of total equity, y-axis) against a metric for profitability (return on assets, x-axis).[22] The stock market valuation of the globally active Swiss banks is in line with the observation that their profitability is higher compared to European G-SIBs and lower compared to US G-SIBs (cf. also subchapter 4.2.2).

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

INTERNATIONAL COMPARISON OF CDS PREMIA

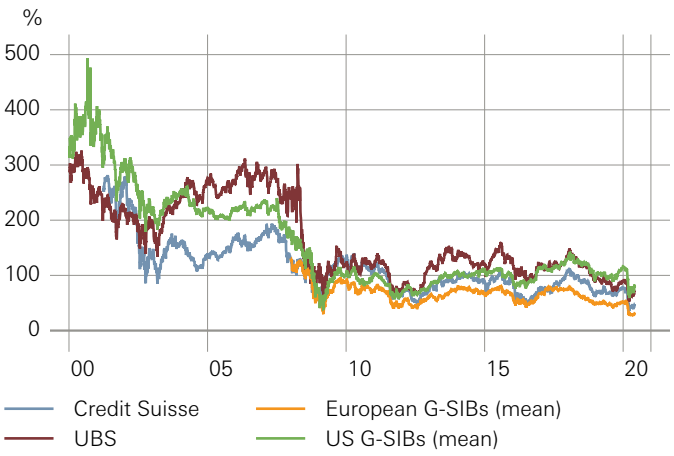
Premia for credit protection (five-year senior) — Chart 30



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

MARKET CAPITALISATION OVER TOTAL EQUITY

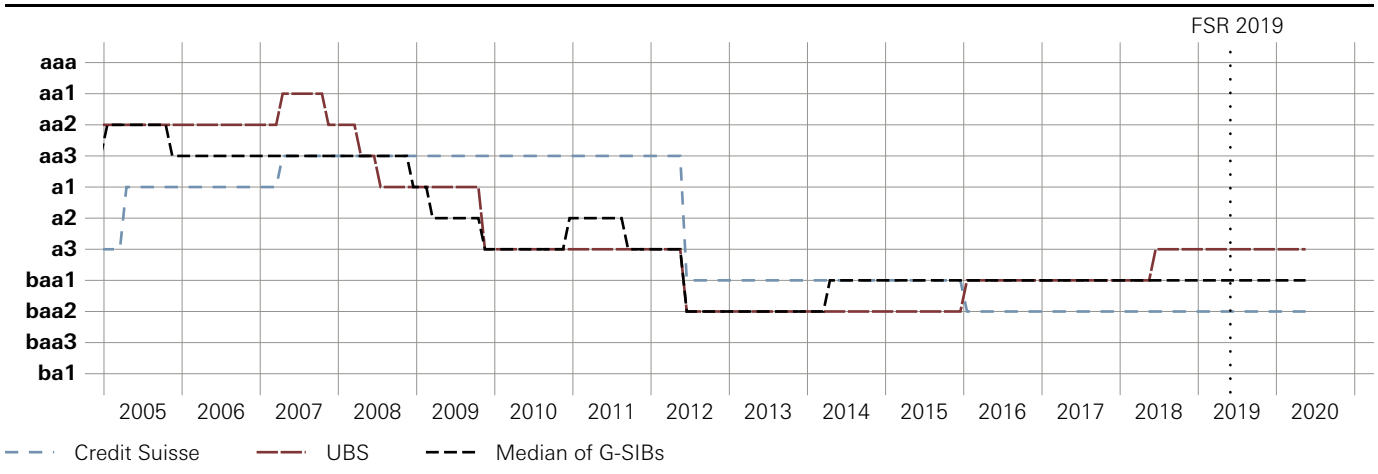
G-SIBs — Chart 32



Sources: Bank disclosures, Bloomberg

INTERNATIONAL COMPARISON OF STAND-ALONE RATINGS

Moody's, baseline credit assessment — Chart 31



Sources: Bloomberg, Moody's

4.4 RESOLUTION

The resolution assessment comprises the following elements: gone-concern loss-absorbing capacity, emergency plans and global resolution plans.

Credit Suisse and UBS meet gone-concern loss-absorbing requirements

Since publication of the last *Financial Stability Report*, the gone-concern loss-absorbing capacity of the two globally active Swiss banks has improved slightly (cf. table 5). At the end of Q1 2020, the look-through risk-weighted gone-concern ratio of Credit Suisse was 15.6%, and that of UBS 15.4%. On the same date, the gone-concern leverage ratios were 4.9% for Credit Suisse and 4.6% for UBS. Taking into account rebates granted by FINMA, both globally active banks meet all the requirements for gone-concern instruments under the Swiss TBTF regulations on a consolidated basis.[23]

At both banks, gone-concern loss-absorbing capacity consists principally of bail-in instruments, which they have built up steadily over recent years. These are 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 into equity claims.

FINMA deems globally active banks' Swiss emergency plans effective

The two globally active Swiss banks were required to submit emergency plans to FINMA by the end of 2019, documenting how they would maintain systemically important functions for Switzerland if they were at risk of insolvency. FINMA confirmed that both banks' plans are effective,[24] marking an important milestone in the implementation of the TBTF regulations. Coupled with increased resilience, this significantly reduces risks for the taxpayer.

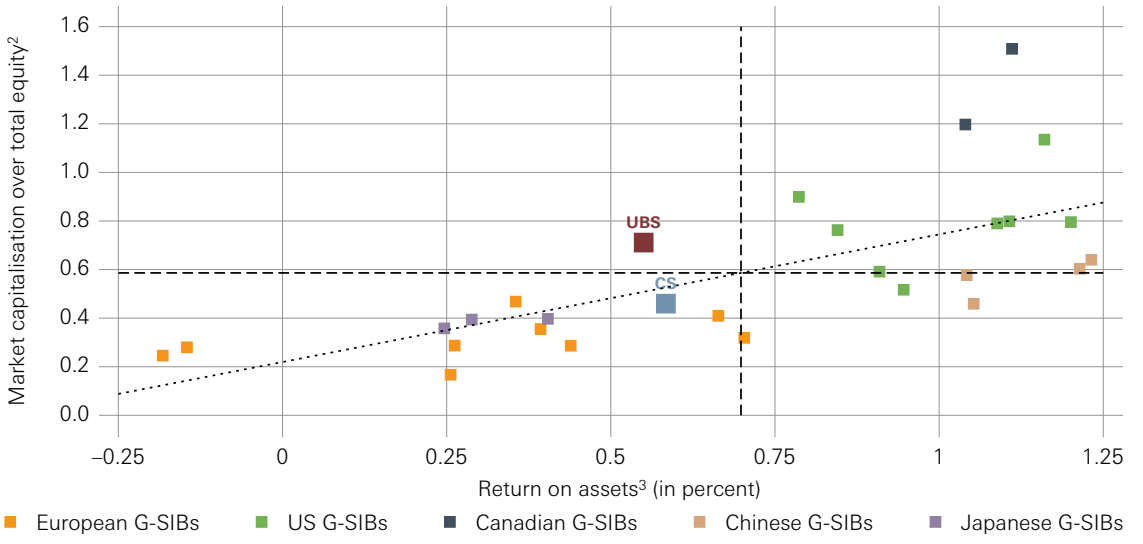
In its report, FINMA qualified its assessment, however, noting that within the UBS Group there remains a temporary material contingent liability (CHF 16.8 billion at end-2019) of the Swiss entity (UBS Switzerland AG) for third-party debt of the parent bank (joint and several liability). Full compliance is conditional on the liability being eliminated or covered by UBS Switzerland AG's loss-absorbing capital by end-2021.[25]

23 The TBTF 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 CAO). Moreover, art. 132 CAO states that gone-concern requirements can be reduced if the banks meet these requirements with CET1 capital or CoCos instead of bail-in instruments. However, applying these two types of reduction to the gone-concern requirements must not cause them to fall below international requirements for gone-concern loss-absorbing capacity. In this report, reductions due to the use of CoCos to meet these requirements are not included.

24 Cf. FINMA press release of 25 February 2020 and FINMA *Resolution Report 2020*.
25 Cf. FINMA *Resolution Report 2020*, p. 31.

INTERNATIONAL COMPARISON OF MARKET CAPITALISATION TO TOTAL EQUITY RATIO WITH RETURN ON ASSETS[1]

G-SIBs, Q1 2020 — Chart 33



1 The dashed lines depict the (unweighted) averages. The dotted line represents the regression of 'market capitalisation over total equity' on 'return on assets'. The correlation between the two series is 0.69 and the R^2 is 0.48.
2 Market capitalisation measured as of end-May 2020; total equity as of Q1 2020.
3 Return on assets defined as pre-tax profit of last four quarters as a percentage of total assets.
Sources: Bank disclosures, Bloomberg

Resolution plans are essential – work in progress

FINMA draws up a resolution plan for each of the globally active banks. Unlike the emergency plan, which relates purely to the banks' systemically important functions in Switzerland, the resolution plan covers the entire banking group worldwide.

The resolution plans are essential, in particular with respect to the parent companies of the two globally active banks as they play a central role within each group. Even after the transfer of systemically important functions to separate Swiss entities, they remain the largest operating units within their respective group. For this reason, and because of their interconnectedness with the financial system, their failure could harm the Swiss economy.

An orderly resolution requires an appropriate level of loss-absorbing capacity not only at group level, but also at the level of the individual group companies. To ensure this, requirements for gone-concern loss-absorbing capacity, which are to be phased in over five years, came into force at the beginning of 2020. These apply in particular to the parent companies and Swiss units with systemically important functions.

Ensuring sufficient liquidity in the event of impending insolvency ('funding in resolution') is another key prerequisite for an orderly resolution. As part of its TBTF evaluation report of July 2019, the Federal Council instructed the FDF, together with FINMA and the SNB, to examine whether current liquidity requirements for systemically important banks are adequate to cover liquidity needs in the event of a resolution or whether regulatory adjustments are necessary.[26] The analysis has shown that the currently applicable liquidity requirements for systemically important banks would probably not be sufficient to cover liquidity needs in the event of a resolution.[27] The authorities are currently reviewing these requirements.

26 Cf. Federal Council, Bericht des Bundesrates zu den systemrelevanten Banken, 3 July 2019, BBl 2019, pp. 5395–5396 (not available in English).
27 Cf. FINMA *Resolution Report 2020*, p. 12.

GONE-CONCERN CAPITAL RATIOS AND REQUIREMENTS

Table 5

	Credit Suisse			UBS		
	Q1 2019	Q1 2020	Require-ment[1]	Q1 2019	Q1 2020	Require-ment[1]
TBTF2 ratios (look-through, in percent)[2]						
TBTF2 gone-concern capacity ratio	15.2	15.6	12.0	15.1	15.4	11.7
TBTF2 gone-concern leverage ratio	4.9	4.9	4.2	4.4	4.6	4.1
Levels (in CHF billions)						
Low-trigger contingent capital (LT CoCos)	8.3	7.8	–	9.1	9.1	–
Of which additional Tier 1 (LT AT1 CoCos)	4.7	4.9	–	2.4	2.4	–
Of which Tier 2 (LT T2 CoCos)	3.5	2.9	–	6.8	6.8	–
Bail-in instruments[3]	36.0	39.2	–	31.1	33.4	–
TBTF RWA	291	301	–	266	276	–
TBTF total exposure	902	958	–	907	921	–

1 As of Q1 2020. The gone-concern requirements for the two globally active banks take into account rebates granted by FINMA due to banks' efforts to improve resolvability. Reductions due to the usage of LT CoCos to meet these requirements are not considered.
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 LT CoCos and bail-in instruments.
3 Including an amortisation component related to low-trigger Tier 2 instruments of CHF 0.5 billion (Q1 2019) and CHF 1.1 billion (Q1 2020) for Credit Suisse and non-Basel-III-compliant capital instruments of CHF 0.7 billion (Q1 2019) and CHF 0.5 billion (Q1 2020) for UBS.

Sources: Bank disclosures, SNB calculations

5 Domestically focused commercial banks

The marked deterioration in the economic environment also poses significant challenges for the domestically focused banks. Under the baseline scenario, these banks' profitability would decrease from an already low level. While domestically focused banks should remain profitable overall, a number of banks are expected to incur losses. In aggregate though, the domestically focused banks' capital buffers should remain largely unaffected under this scenario. The actual extent of the COVID-19 pandemic's impact on domestically focused banks is subject to a high degree of uncertainty, however.

This chapter discusses the elements that play a key role in this context. In particular, subchapter 5.1 highlights the fact that domestically focused banks' main source of income is lending to domestic households and corporations. Their income and balance sheets are thus exposed to any deterioration of economic conditions in Switzerland. Typically, credit risks on banks' loans materialise in response to deteriorating economic conditions, as default rates on loans increase and the value of collateral potentially securing such loans decreases.

Domestically focused banks' main exposure is related to the Swiss mortgage and real estate markets. Over the last decade, imbalances have developed on these markets and they persisted through 2019. Simultaneously, the banks' exposure has increased significantly. Mortgage growth at these banks has remained strong and affordability risks have continued to rise in the residential investment property segment of the mortgage market. Furthermore, a growing share of new mortgages in this segment is financing properties in regions with high vacancy rates. A longer and deeper recession than expected under the baseline scenario could trigger a price correction on the residential real estate market.

Domestically focused banks' profitability, their first line of defence against losses, has decreased significantly since the onset of the low interest rate environment (cf. subchapter 5.2). In 2019, profitability – as measured by ROA – continued to decline, principally due to lower NII.

Domestically focused banks have built up large capital buffers (cf. subchapter 5.2). Their regulatory capital ratios (both the leverage ratio and the risk-weighted ratio) are high by historical standards and changed little in 2019. Moreover, SNB scenario analysis suggests that, based on the capital buffers held at end-2019, most domestically focused banks would be able to absorb the losses under the baseline scenario as well as under a wide spectrum of stress scenarios, without their lending capacity being significantly impaired.

5.1 RISK EXPOSURE

Domestically focused banks are mainly exposed to domestic credit risk, interest rate risk and business risk.

5.1.1 Credit risk

Large exposure to domestic credit market

At end-2019, domestic credit accounted, on average, for around two-thirds of the aggregate balance sheet of the domestically focused banks. By sector, credit to households made up two-thirds, and corporate loans to the real sector[1] one-quarter, of total credit. Broken down by type of loan, 90% of the credit volume was mortgage loans, while most of the remaining loans (approximately two-thirds) were unsecured (cf. table 6).

1 In the following, we use the term 'corporations' to denote corporations in the real sector, i.e. private non-financial corporations.

DOMESTIC BANK CREDIT BY TYPE OF BORROWER AND LOAN

Domestically focused banks, figures at end-2019[1] Table 6

	Households	Non-financial corporations	Financial corporations	Public corporations	All sectors
Domestic bank credit (in CHF billions)	**549**	**219**	**26**	**26**	**819**
Domestic bank credit (in percent)	**67.0**	**26.7**	**3.2**	**3.1**	**100.0**
Of which mortgages	65.2	22.4	2.0	0.2	89.7
Of which other loans: secured	0.9	1.4	0.4	0.6	3.3
Of which other loans: unsecured	1.0	2.8	0.8	2.4	7.0

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

Sources: Credit volume statistics, SNB

Due to the composition of their balance sheets, these banks are particularly exposed to developments affecting the financial soundness of corporations and households as well as to real estate prices in Switzerland. Over the last few years up to end-2019, the environment has been relatively benign in this regard. Economic growth has been robust overall and unemployment has remained at low levels. Historically low interest rates have enabled households to service growing debt levels and favoured increases in real estate prices. Reflecting this environment, backward-looking credit quality indicators, such as the share of non-performing loans or the volume of loan write-offs, pointed to low risk levels.

The environment has now deteriorated markedly with respect to economic growth and the situation on the labour market. Under the baseline scenario, this primarily affects domestically focused banks through an increase in provisions and write-downs on outstanding loans to Swiss corporations. This is consistent with the banks' own assessment. According to the SNB's fortnightly qualitative survey, banks expect the credit quality of non-guaranteed loans to deteriorate. However, they emphasise the lag with which deteriorating economic conditions affect quantitative measures of credit quality, in particular for small and medium-sized enterprises.

A number of factors will help to limit the negative impact on the domestically focused banks under the baseline scenario. First, measures taken by the authorities will partially protect the banks' (outstanding) loan portfolios against the consequences of the pandemic shock. In particular, the Federal Council's guaranteed loan programme,[2] coupled with the SNB's COVID-19 refinancing facility,[3] will alleviate liquidity shortfalls at many companies. This will help to contain the rise in corporate default rates. The protection of the banks' loan portfolios against higher corporate default rates will only be partial, however, as the loan guarantees apply to just a small fraction of the loans on these banks' balance sheets.[4]

Second, under the baseline scenario, the Swiss economy is expected to partially recover in H2 2020. This should contain the rise in default rates for both corporations and households.

Third, more than 90% of the banks' loans are secured, mostly by residential and commercial real estate (cf. table 6). This high degree of collateralisation reduces the loss given default on corporate loans. In this respect, it should be noted that the collateral value of securities has decreased due to the correction on financial markets and that the collateral value of commercial properties is set to come under pressure due to the deterioration in the outlook.

As mentioned, the actual extent of the COVID-19 pandemic's impact on domestically focused banks is subject to a high degree of uncertainty. The longer and deeper the domestic and global economic downturn, the greater the negative impact on the domestically focused banks' loan portfolios will be. In this context, the imbalances on the domestic mortgage and residential real estate markets continue to present relevant macroprudential risks. Domestically focused banks' exposure to these markets increased further in 2019, as a result of both mortgage growth and increased affordability risks (cf. following section). While there is additional uncertainty about the magnitude of these imbalances due to the current shock, a longer and deeper recession than expected under the baseline scenario could trigger a price correction on the residential real estate market. Furthermore, it could lead to a materialisation of affordability risks in mortgage lending due to higher unemployment for households and reduced rental income for companies. Both a price correction on the residential real estate market and a materialisation of affordability risks would negatively affect the quality of these banks' mortgage portfolios and lead to corresponding credit losses.

Strong growth and increasing affordability risks in mortgage lending

In 2019, mortgage growth at domestically focused banks remained strong and decreased only slightly (from 4.2% at end-2018 to 4% at end-2019). As such, it remained well above that of the two globally active banks and of the banking sector as a whole.

At the same time, affordability risks as measured by the loan-to-income (LTI) ratio of new mortgage loans increased in 2019, driven by developments in the segment of residential investment property held by commercial borrowers. As a result, the vulnerability of these mortgages to shocks such as an increase in interest rates or a decrease in income (rents) has also risen further from already high levels. The share of new mortgage loans with high loan-to-value (LTV) ratios remained broadly unchanged.

In the residential investment property segment, LTI ratios increased further in 2019. This applies to residential investment properties held by both commercial borrowers and private individuals. Affordability risks, as measured by the share of loans at risk, increased irrespective of the level of imputed interest rates used to measure this risk (5%, 4% or 3%), i.e. irrespective of the LTI thresholds

2 www.admin.ch/gov/en/start/documentation/media-releases.msg-id-78572.html.
3 www.snb.ch/en/mmr/reference/pre_20200325/source/pre_20200325.en.pdf.
4 Based on data at end-May 2020, according to SNB estimates, around CHF 8 billion of corporate loans have been granted that are fully or partially protected by the Federal Council's guaranteed loan programme; this compares to around CHF 220 billion of corporate loans outstanding before the guarantee programme started. In addition, early evidence suggests that a large proportion of the recipients of such loans are companies with no pre-existing credit relationship with a bank.

considered (cf. chart 34).[5] In the owner-occupied residential property segment, LTI ratios remained broadly unchanged.

High LTI ratios are a source of vulnerability not only in the event of an upward interest rate shock but also in the event of a negative income shock. An interest shock of 150 basis points – which would bring mortgage rates close to the 3% threshold depicted in chart 34 – would have the same negative impact on households' financial position as a 6–10% decrease in income for the middle 50% of the LTI distribution.[6]

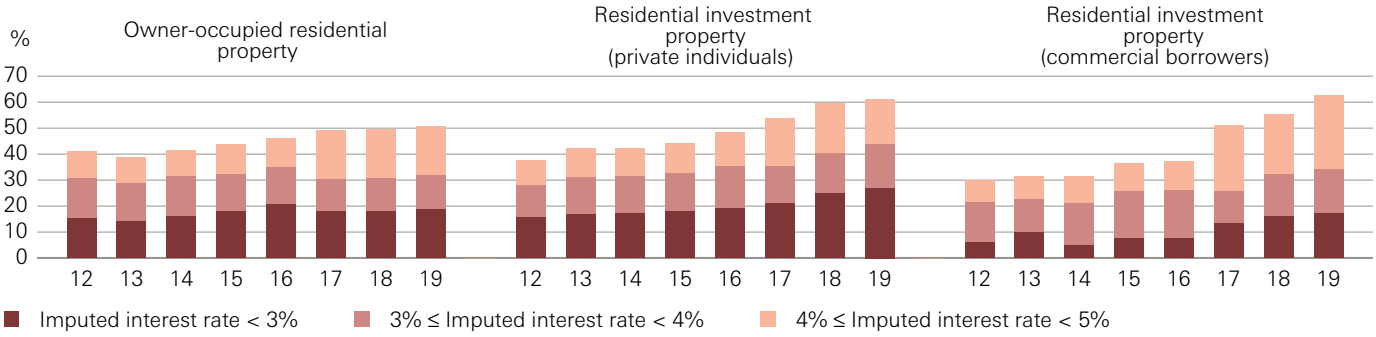
5 The imputed costs used for this estimate comprise the imputed interest rate (5%, 4%, 3%) plus maintenance and amortisation costs (1% each). The average mortgage rate on the stock of outstanding mortgages between 1960 and 2008 (i.e. prior to the beginning of the low interest rate period) is almost 5%. 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 own 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.

6 The average mortgage rate observed on the stock of outstanding mortgages at end-2019 was 1.4%. For the owner-occupied segment, the middle 50% is the interquartile range of the LTI distribution of new mortgages in the owner-occupied residential property segment in 2019. The corresponding LTI values are 4.3 (25th percentile) and 6.8 (75th percentile).

LOAN-TO-INCOME OF NEW MORTGAGE LOANS[1]

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 34

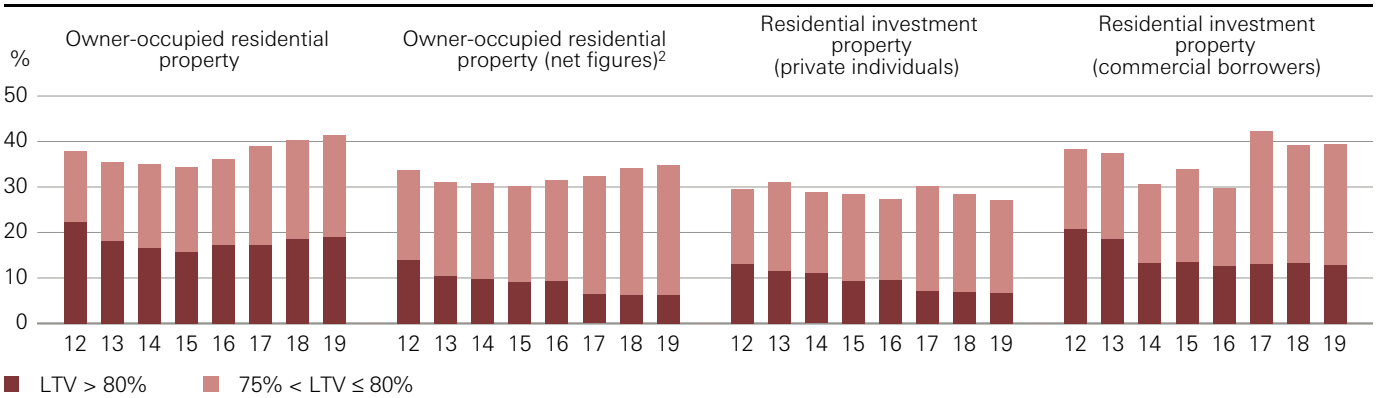


1 From 2017 on, data from the revised 'Survey on new mortgages' are shown.
2 The dark red shaded area shows the proportion where imputed costs exceed rents or one-third of income at an imputed interest rate of up to 3%. The red shaded area shows the additional proportion for an imputed interest rate of between 3% and 4%. The pale red shaded area shows the additional proportion for an imputed interest rate of between 4% and 5%.
Source: SNB

LOAN-TO-VALUE OF NEW MORTGAGE LOANS[1]

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

Chart 35



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

In 2019, the share of new mortgage loans with an LTV ratio[7] of more than 80% was similar to that in 2018 (cf. chart 35). Depending on the segment considered, this share ranged from 7% to 19%. The share of new mortgages with an LTV ratio of between 75% and 80% also remained stable at between 20% and 27%, depending on the segment analysed. About half of the loans in this bucket were concentrated in the 79–80% range.

When interpreting these figures, it should be noted that they apply to new mortgages and are not representative of the LTIs and LTVs for the stock of outstanding mortgages. While there is no data on the exact distribution of LTIs and LTVs for outstanding mortgages, approximations suggest that the share of outstanding mortgages with a high LTI or LTV ratio is lower due to amortisation in particular (cf. *Financial Stability Report*, 2019, p. 21).

Recent mortgage vintages in residential investment property segment vulnerable to shocks

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, the share of new residential investment mortgages with very high LTIs is at a historical high (see dark red and red shaded areas in chart 34). High LTIs increase the probability of default, driven by either an income shock or an interest rate shock.

Second, in line with the growing number of districts with high vacancy rates, the share of new residential investment mortgages financing properties in regions with high vacancy rates has also risen. In 2019, 37% of new mortgages were granted in districts with vacancy rates above 2% (2018: 31%).

Third, a substantial share (approximately 27%) of new mortgages in the residential investment property segment is characterised by both high LTV and high LTI risks.[8] This accumulation of risks increases the likelihood that not only the default rates but also the loss rates on these loans would be substantial in the event of a shock.

In response to mounting concerns regarding banks' risk exposure, the self-regulation guidelines for banks in the area of investment properties have been revised. The stricter LTV and amortisation rules applying to new mortgages financing investment properties came into effect on 1 January 2020.[9] The SNB welcomes the revision of the self-regulation guidelines. Going forward, these changes to the regulatory framework should help to contain a further increase in risks in this segment of the mortgage market.

5.1.2 INTEREST RATE RISK

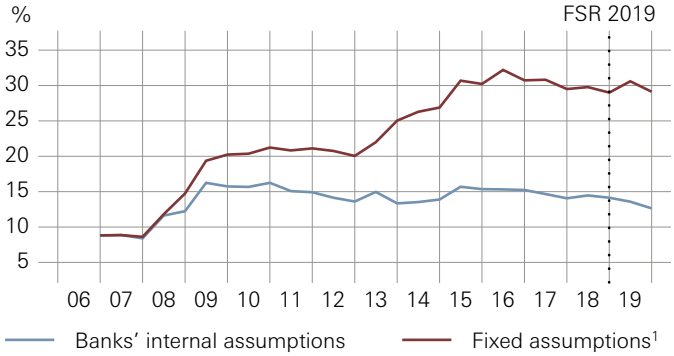
High level of maturity transformation

Interest rate risk can result from a mismatch between the repricing maturities of a bank's assets and liabilities. Due to the nature of their business, which typically involves granting loans (i.e. assets with relatively long, but contractually defined, repricing maturities) and taking deposits (i.e. liabilities with potentially short, but contractually undefined, repricing maturities), domestically focused banks are traditionally exposed to upward shocks in interest rates. In 2019, interest rate risk from maturity transformation – as measured by the impact of a 200 basis point upward interest rate shock on the banks' net present value (NPV) relative to Tier 1 capital – remained at a high level.

Based on banks' internal repricing assumptions for positions with undefined repricing maturities, interest rate risk from maturity transformation has been gradually decreasing since 2015. In 2019, domestically focused banks' NPV would have declined, on average, by 12.6% of Tier 1 capital if interest rates had suddenly risen by 200 basis points (2018: 14.1%). Under more conservative assumptions that are fixed over time and that are the same for all banks, interest rate risk remained unchanged and at a high level (cf. chart 36).[10]

INTEREST RATE RISK OF DOMESTICALLY FOCUSED BANKS

Losses in NPV with 200 bp interest rate rise and different replication assumptions, as a percentage of Tier 1 capital — Chart 36



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

7 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.

8 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%. For more details regarding this concentration of risks, cf., for example, *Financial Stability Report*, 2019, p. 22.

9 www.swissbanking.org/en/media/positions-and-press-releases/sba-amends-self-regulation-in-the-residential-investment-property-segment?set_language=en and www.finma.ch/en/news/2019/08/20190828-mm-selbstregulierung/.

10 Cf. *Financial Stability Report*, 2013 for a detailed discussion of fixed assumptions and banks' own repricing assumptions.

5.1.3 IMPACT OF SCENARIOS ON EARNINGS

The SNB focuses on three scenarios for assessing the magnitude of domestically focused banks' risk exposure and loss potential: the current baseline scenario and two generic stress scenarios, the protracted euro area recession scenario and the interest rate shock scenario.

Baseline scenario

According to the baseline scenario, the upcoming quarters will be challenging for domestically focused banks. This scenario depicts a recession followed by a partial recovery in H2 2020. As economic activity catches up, growth is above trend in 2021 and 2022. However, GDP does not recover to its end-2019 level until 2022.

Under this scenario, the COVID-19 pandemic affects domestically focused banks primarily through a deterioration of corporate credit quality in Switzerland (cf. 'Large exposure to domestic credit market' in subchapter 5.1.1). Provisions and write-downs on outstanding loans to Swiss corporations are expected to increase. The recovery of the Swiss economy, as well as measures taken by authorities, in particular guarantees on new corporate loans, will help to limit the negative impact of these developments on banks.

NII is likely to remain under pressure as interest rates are expected to stay low for a prolonged period under the baseline scenario. Moreover, the correction on financial markets has dampened prospects for trading income as well as for fee and commission income. As a result, the profitability of domestically focused banks is likely to decrease from an already low level in the medium term. While domestically focused banks should remain profitable overall, a number of banks are expected to incur losses.

Generic stress scenarios

The protracted euro area recession scenario depicts qualitatively similar but significantly more adverse macroeconomic developments than the baseline scenario. Under the euro area recession scenario, the recession in Switzerland is much longer than under the baseline scenario, interest rates are lower and the domestic real estate market faces a significant price correction. As under the baseline scenario, corporate loans would be particularly affected under this scenario. In addition, losses from mortgage exposure would be material. Banks' fee and commission income would decline due to a financial asset price correction, and interest margins would decline further due to interest rates remaining lower for longer. Accordingly, the negative impact of the protracted euro area recession scenario on banks' net earnings would be significantly greater than that of the baseline scenario. Under this scenario, the domestically focused banks would, in aggregate, experience losses.

The interest rate shock scenario assumes a positive shock to the yield curve coupled with a sharp real estate price correction. Under this scenario, most domestically focused banks would experience major losses. These losses would mainly be driven by a substantial increase in mortgage interest rates combined with a pronounced drop in real estate prices that would lead to a surge in write-downs on domestic mortgages. A positive interest rate shock is unlikely in the short or medium run. This generic scenario nonetheless remains relevant in the current environment for two reasons. First, as the COVID-19-related crisis underlines, banks' resilience should be assessed against a broad spectrum of severe shocks, even if such shocks appear unlikely at a given juncture. Second, the interest rate shock scenario assumes a sharp correction on the domestic mortgage and real estate markets where imbalances have developed over the past decade. A longer and deeper recession than expected under the baseline scenario could trigger such a correction. Furthermore, it could lead to a materialisation of affordability risks due to higher unemployment for households and reduced rental income for companies. The magnitude of these effects, however, would remain smaller than assumed under the interest rate shock scenario.

SNB scenario analysis indicates that domestically focused banks' resilience is adequate (cf. 'Impact of scenarios on capital' in subchapter 5.2). Based on the capital buffers held at end-2019, most domestically focused banks should be able to absorb potential losses under these scenarios while continuing to fulfil their role as credit providers to the real economy.

5.2 RESILIENCE

The assessment of domestically focused banks' resilience begins with a review of their regulatory capital ratios. Their profitability, as a key line of defence against losses, is also discussed. Scenario analysis provides an economic appraisal and, finally, markets give an additional assessment of banks' resilience.

5.2.1 REGULATORY CAPITAL RATIOS

Capital ratios significantly above regulatory minima

In 2019, the going-concern risk-weighted capital ratios of the domestically focused banks increased further, both in terms of total eligible capital (2018: 18.0%; 2019: 18.6%) and in terms of Tier 1 capital (2018: 17.3%; 2019: 18.0%). Their risk-weighted ratio is high by historical standards (cf. chart 37).[11]

Despite the further decrease in profitability and the continued expansion of their balance sheets, domestically focused banks' average going-concern Tier 1 leverage ratio remained unchanged at 7.2% at end-2019. The growth in their capital base was mainly due to profit retention.

11 For the aggregate analysis in this section, a phase-in perspective is used for DF-SIBs' going-concern capital ratios.

Measured against the regulatory minimum requirements, domestically focused banks' capital buffers are substantial. At end-2019, they typically had capital surpluses of 7.5–12.5 percentage points above the 8% risk-weighted minimum (cf. chart 38) and 3–6 percentage points above the 3% leverage ratio minimum (cf. chart 39).

At end-2019, all domestically focused banks also complied with the additional capital requirements associated with the sectoral CCyB and the institution-specific capital buffer target levels set by the CAO.[12] Depending on the bank, these additional capital buffer requirements range between 2.5–6.2% of RWA.

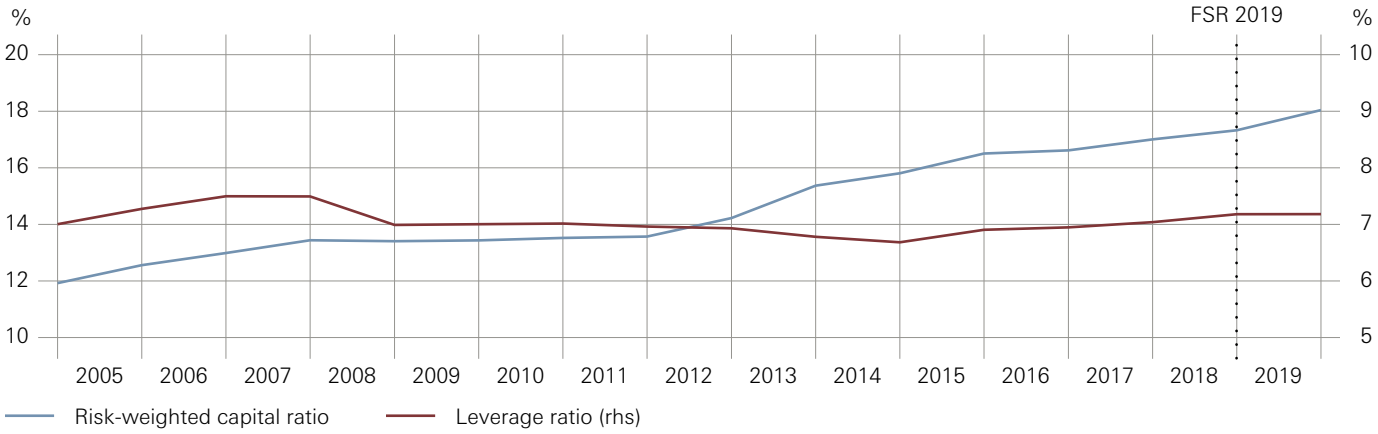
Capital buffers allow domestically focused banks to absorb significant losses while continuing to lend to the real economy. In aggregate, these banks' capital buffers exceeded the regulatory minima[13] by CHF 51.6 billion at end-2019. Of this, CHF 12.6 billion corresponded to the capital conservation buffer requirement, CHF 4.5 billion to the sectoral CCyB, and CHF 8.5 billion to other Pillar 2 requirements. Banks hold almost half of the total buffers (i.e. CHF 26.0 billion at end-2019) over and above all regulatory requirements.

12 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.

13 8% risk-weighted and 3% leverage ratio.

CAPITAL RATIOS OF DOMESTICALLY FOCUSED BANKS

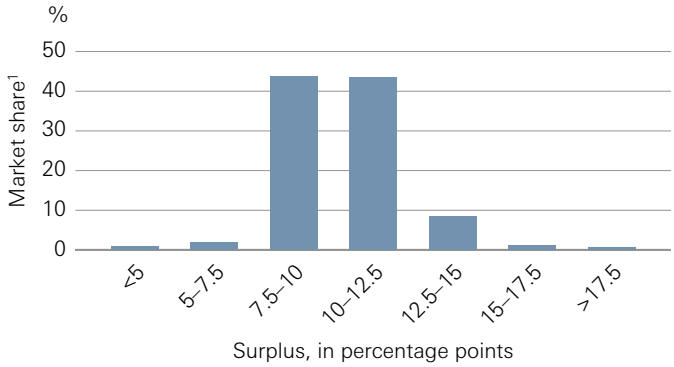
Risk-weighted Tier 1 capital ratio and Tier 1 leverage ratio[1] — Chart 37



1 Until 2013, Tier 1 divided by total assets. From 2014, Tier 1 divided by Basel III total exposure.
Sources: FINMA, SNB

RISK-WEIGHTED SURPLUS CAPITAL OF DOMESTICALLY FOCUSED BANKS

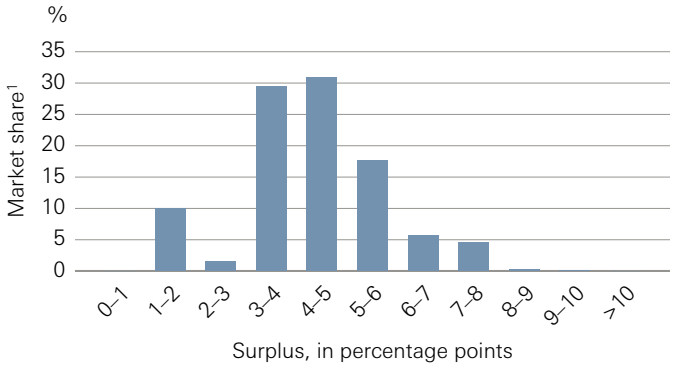
Capital surplus with respect to the 8% minimum requirement for risk-weighted total capital ratios — Chart 38



1 Share of domestically focused banks´ total exposure.
Sources: FINMA, SNB

LEVERAGE RATIO SURPLUS CAPITAL OF DOMESTICALLY FOCUSED BANKS

Capital surplus with respect to the 3% minimum requirement for leverage ratios applicable as of 2018 — Chart 39



1 Share of domestically focused banks´ total exposure.
Sources: FINMA, SNB

In March 2020, the Federal Council followed the SNB's recommendation to deactivate the CCyB, thereby increasing the banks' room for manoeuvre when performing their role as lenders.

DF-SIBs comply with TBTF going-concern requirements

DF-SIBs are subject to the additional going-concern and gone-concern requirements defined by TBTF2. At end-2019, the three DF-SIBs were fully compliant with the look-through as well as the phase-in TBTF2 going-concern risk-weighted capital and leverage ratio requirements (cf. table 7).

Compared to 2018, the going-concern capital ratios of DF-SIBs developed heterogeneously. In a look-through perspective, the TBTF2 risk-weighted capital ratio decreased at Raiffeisen Group (down 2.9 percentage points to 14.6%) and at ZKB (down 1.4 percentage points to 17.6%), while it increased at PostFinance (up 1.2 percentage points to 18.8%). The decrease at Raiffeisen Group and ZKB partly reflects the fact that, according to their regulatory disclosures, these banks would use a portion of their available Tier 1 capital to fulfil look-through gone-concern requirements (cf. 'Gone-concern loss-absorbing capacity varies across DF-SIBs' in subchapter 5.4). To avoid double-counting, such capital has to be deducted from Tier 1 going-concern capital ratios. TBTF2 leverage ratios decreased for all three DF-SIBs, though to different extents. In a phase-in perspective, the TBTF2 risk-weighted capital ratio increased at PostFinance (up 1.2 percentage points to 18.8%) and Raiffeisen Group (up 0.4 percentage points to 17.9%), and decreased at ZKB (down 0.2 percentage points to 20%). TBTF2 leverage ratios decreased at PostFinance and Raiffeisen Group, and increased at ZKB.

FINMA's decision to allow banks to temporarily exclude central bank reserves from their total exposure (i.e. the leverage ratio denominator) led to a significant increase in two of the three DF-SIBs' leverage ratios at end-March 2020. For PostFinance, the leverage ratio was 7.2% (phase-in) when excluding central bank reserves, as compared to 4.6% under the CAO's definition.[14] For Raiffeisen Group, the leverage ratio under this temporary exclusion was 7.5%, as compared to 6.7% under the CAO's definition.[15] ZKB opted to forego the temporary exclusion of central bank reserves from its leverage ratio.[16]

14 Cf. PostFinance's 'Capital adequacy disclosure on grounds of systemic importance as at 31.03.2020', p. 3, footnote 8 (not available in English).
15 Cf. Raiffeisen Group's 'Regulatory disclosure as of 31.03.2020', p. 5, footnote 2.
16 Cf. ZKB's 'Offenlegungsreport per 31.03.2020', p. 5 (not available in English).

GOING-CONCERN CAPITAL RATIOS AND REQUIREMENTS

Look-through and phase-in — Table 7

	PostFinance			Raiffeisen Group[4]			ZKB		
	2018	2019	Requirement 2019[3]	2018	2019	Requirement 2019[3]	2018	2019	Requirement 2019[3]
TBTF2 ratios (look-through, in percent)[1]									
TBTF2 going-concern capital ratio	17.6	18.8	13.0	17.5	14.6	14.3	19.0	17.6	13.6
TBTF2 going-concern leverage ratio	5.0	4.8	4.5	7.6	5.7	4.6	6.4	6.2	4.5
TBTF2 ratios (phase-in, in percent)[2]									
TBTF2 going-concern capital ratio	17.6	18.8	13.0	17.5	17.9	14.2	20.2	20.0	13.6
TBTF2 going-concern leverage ratio	5.0	4.8	4.5	7.6	7.0	4.6	6.8	7.0	4.5
Levels (in CHF billions)									
Tier 1 capital TBTF2 (look-through)	5.9	6.1	–	17.4	14.4	–	11.9	11.4	–
Tier 1 capital TBTF2 (phase-in)	5.9	6.1	–	17.4	17.6	–	12.7	13.0	–
TBTF RWA	33.8	32.6	–	99.3	98.3	–	62.7	65.0	–
TBTF total exposure	119.4	126.5	–	228.6	252.3	–	185.6	185.6	–

1 The ratios are calculated based on the final requirements, i.e. no transitional provisions are taken into account.
2 The ratios are calculated based on the phase-in requirements as at end-2019 (including the grandfathering clause applicable for LT CoCos with Tier 1).
3 Including requirements for the CCyB for the risk-weighted requirements, but excluding bank-specific Pillar 2 surcharges for specific risks.
4 Raiffeisen switched to using internal models to calculate RWA (F-IRB) in 2019.

Sources: DF-SIBs' regulatory disclosures

5.2.2 PROFITABILITY

Further decline in domestically focused banks' profitability

From a resilience point of view, profits are a complement to capital. They are the banks' first line of defence against adverse shocks. Moreover, retained earnings are a key source of capital, enabling banks to build up buffers over time. Over the last decade, domestically focused banks' profitability has decreased significantly, mainly driven by downward pressure on interest rate margins due to the low interest rate environment.

In 2019, domestically focused banks' profitability declined further. Average ROA decreased by around 5%, from 0.37% (2018) to 0.35% (2019). This was driven primarily by lower NII relative to total assets. The decrease in NII was partially compensated for by increased cost efficiency. The current level of ROA is low by historical standards (cf. chart 40).

Profitability at the three DF-SIBs evolved heterogeneously in 2019. Both ZKB and Raiffeisen Group increased their ROA despite further declining interest rate margins. ROA at ZKB increased from 0.47% (2018) to 0.51% (2019). This development was predominantly due to an increase in trading and investment business. ROA at Raiffeisen Group also increased significantly from 0.24% (2018) to 0.34% (2019). This increase was attributable to a reduction in administrative costs, credit losses and provisions. At PostFinance, profitability turned negative as ROA declined from 0.06% (2018) to –0.46% (2019), following a CHF 800 million goodwill write-off. Excluding the goodwill write-off, PostFinance's profitability decreased from 0.22% (2018) to 0.17% (2019).[17]

17 In 2018, PostFinance registered a goodwill write-off of CHF 200 million for the same position. Due to the regulatory treatment of goodwill, that write-off has had no impact on PostFinance's regulatory capital.

Further narrowing of interest rate margin

For the domestically focused banks, interest income constitutes the most important source of revenue. The profitability of this business stream can be measured by the interest rate margin. The average interest rate margin[18] on outstanding claims of domestically focused banks decreased by a further 5 basis points – or around 4% – to 1.12% in 2019 (cf. chart 41). Since 2007, these banks' average interest rate margin has decreased by almost 40%.

The decline in 2019 was driven by the further decrease in the average interest rate on outstanding mortgage loans, from 1.45% (Q4 2018) to 1.37% (Q4 2019) as loans taken out in the past were renewed and new mortgages were granted at record low rates. The average interest rate on new mortgages over all maturities decreased from 1.21% (Q4 2018) to 0.99% (Q4 2019), while the average interest rate on new ten-year mortgages fell from 1.44% (Q4 2018) to a historically low level of 0.98% (Q4 2019). Meanwhile, interest rates on the sight and savings deposits of retail customers remained almost constant, at levels close to zero. The share of customer deposits that was subject to negative interest in 2019 amounted to 5% (2018: 4%).

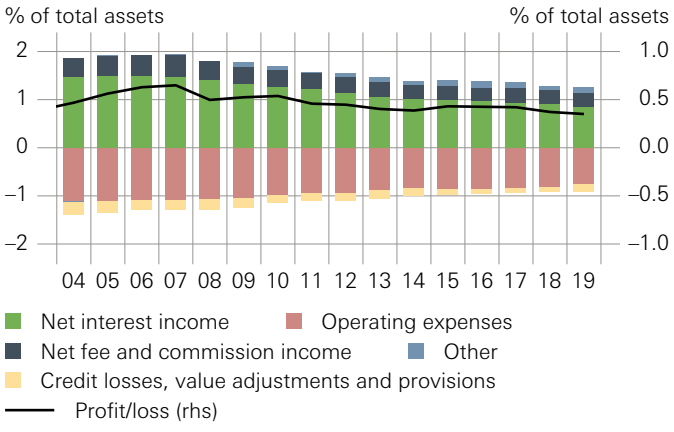
The 2019 increase in the amount of sight deposits exempted from negative interest payments to the SNB has had a positive impact on the domestically focused banks' NII. Following the SNB's decision to adjust the exemption threshold[19] with effect from November 2019, for the domestically focused banks the total amount exempted increased from CHF 133 billion at end-October to

18 Interest rate margins are approximated as NII divided by the sum of mortgage claims, claims against customers and financial claims.

19 Negative interest to the SNB is charged only on the portion of the sight deposit account balance which exceeds the exemption threshold. As of November 2019, the exemption threshold is updated monthly, thereby reflecting developments in banks' balance sheets over time. The threshold is calculated as the moving average of minimum reserve requirements over the last 36 reference periods multiplied by a threshold factor (basis component) minus cash holdings in the last reference period (cash holdings component).

RETURN ON ASSETS OF DOMESTICALLY FOCUSED BANKS

Chart 40

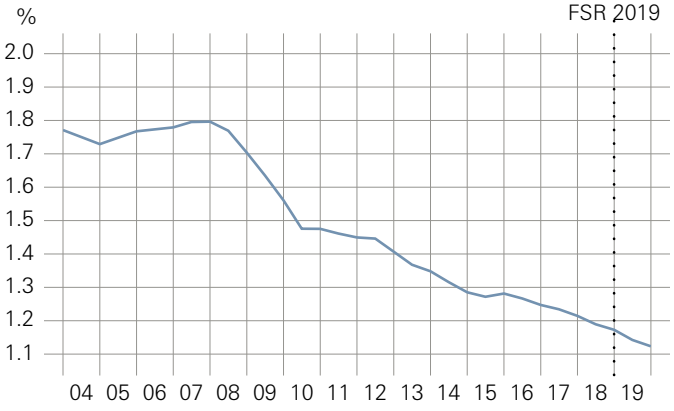


Sources: FINMA, SNB

INTEREST RATE MARGIN OF DOMESTICALLY FOCUSED BANKS

Weighted average

Chart 41



Sources: FINMA, SNB

approximately CHF 207 billion at end-November.[20] Based on annualised 2019 figures, for these banks the adjustment would have led to a decrease of around CHF 136 million in negative interest payments.[21] This represents around 1.5% of the interest rate margin. By comparison, the average interest rate margin decreased by 4% in 2019.

Overall, for these banks, the main source of margin pressure is not related to the negative interest payments to the SNB. Instead, it stems from the fact that the pass-through of capital market rates to banks' assets (such as interest rates on loans) has been much larger than to banks' liabilities (such as interest rates on deposits).

Economic downturn and margin pressure likely to weigh on profitability

Going forward, the pressure on domestically focused banks' profitability is likely to increase further for two main reasons. First, if the current low interest rate environment in Switzerland persists, interest rate margins will remain strained as maturing loans are renewed at considerably lower rates. Second, the economic downturn triggered by the COVID-19 pandemic will lead to a materialisation of credit losses and will dampen trading income as well as fee and commission income.

The SNB's decision to increase the exemption threshold factor for negative interest on sight deposits from 25 to 30 as of 1 April 2020 will contribute positively to the banks' NII and profitability going forward.

5.2.3 IMPACT OF SCENARIOS ON CAPITAL

Capital buffers enable domestically focused banks to absorb considerable losses while continuing to lend to the real economy

In addition to assessing the regulatory capital ratios, the SNB assesses the capital adequacy of domestically focused banks by simulating three different scenarios.

Under the baseline scenario, a number of banks representing a significant market share would incur losses which would deplete a small proportion of their capital buffers. However, in aggregate, domestically focused banks' capital buffers should remain largely unaffected.

Under the protracted euro area recession scenario, banks' losses and the related impact on capital would be more significant. Overall, the capital buffers of the domestically focused banks would remain substantial after the shock even under this more severe scenario. Nonetheless, in the absence of counteracting measures, a small number of banks could fall below the specific capital buffer target levels set by the CAO or below the regulatory minima.

Under the interest rate shock scenario, domestically focused banks' aggregate losses would be significantly larger than under both the baseline and the protracted euro area recession scenarios and would deplete a material proportion of these banks' capital buffers. In this case too, a small number of banks would fall below the specific capital buffer target levels set by the CAO or below the regulatory minima, unless they took counteracting measures. Overall, though, thanks to the sizeable capital buffers currently available, most domestically focused banks should be able to absorb the losses under such a scenario while continuing to lend.

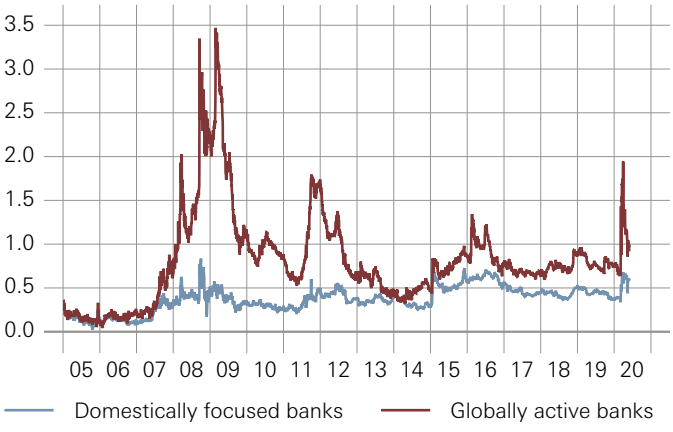
These results suggest that the domestically focused banks should be able to continue fulfilling their role as credit providers to the real economy under a wide spectrum of stress scenarios. Scenario analysis is subject to significant uncertainty, however. This is particularly relevant in the current economic context.

5.3 MARKET ASSESSMENT

Market-based indicators provide a complementary perspective for assessing the resilience of the domestically focused banks.[22] Bond yield spreads and ratings indicate that the market assessment of domestically focused banks' creditworthiness has deteriorated somewhat in response to the worldwide proliferation of COVID-19. Nonetheless, according to these indicators, their creditworthiness remains high, by both historical and industry standards.

SENIOR BOND SPREADS

Average maturity 2–8 years (volume-weighted average), in percentage points — Chart 42



Source: SNB

20 CHF 74 billion reflects the observed change between end-October 2019 and end-November 2019. For the banking system as a whole, the exempted amounts are CHF 281 billion (October 2019) and CHF 397 billion (November 2019).
21 Based on an annualised estimate of relief and actual negative interest payments to the SNB in 2019.

22 One limitation of market-based indicators is that they are only available for a subset of banks.

On the one hand, senior bond yield spreads increased moderately at the beginning of March 2020, before decreasing back to levels observed in 2019 (cf. chart 42).[23] In comparison to benchmarks such as the Swiss globally active banks, the domestically focused banks' bond spreads remain low on average. Other market-based indicators (e.g. expected default frequencies) convey a similar picture.

On the other hand, stand-alone ratings for the domestically focused banks have remained stable at high levels since early 2020.[24] Some of these banks' ratings had declined in recent years, reflecting agencies' mounting concerns about their increased exposure and risks linked to the domestic mortgage and real estate markets. Since the outbreak of the COVID-19 pandemic, however, domestically focused banks' ratings – and the outlooks for these ratings – have remained unchanged. Hence, based on rating agencies' currently published assessments for these banks, the impact of COVID-19 should remain small.

5.4 RESOLUTION

This subchapter discusses DF-SIBs' compliance with gone-concern capital requirements and the status of their emergency plans.

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

Gone-concern requirements for DF-SIBs entered into force in 2019 and are being phased in by 2026.[25] Eligible instruments for covering gone-concern requirements include contingent capital and bail-in instruments, excess Tier 1 capital, cantonal state guarantees or similar mechanisms.[26] 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.

At end-2019, there was a shortfall with respect to the gone-concern requirements for PostFinance in a look-through perspective, meaning that the bank will have to build up gone-concern instruments to meet these requirements by 2026. ZKB and Raiffeisen Group already complied with look-through gone-concern requirements. This holds under the assumption that some of the going-concern Tier 1 capital accounted for in a phase-in perspective is used to fulfil gone-concern requirements (cf. 'DF-SIBs comply with TBTF going-concern requirements' in subchapter 5.2.1). Assuming that these banks' Tier 1 capital is mostly available for going-concern loss absorption (cf. table 7), however, both banks would have to build up gone-concern instruments by 2026 to meet their look-through requirements. In a phase-in perspective, all three banks met the TBTF2 gone concern risk-weighted capital and leverage ratio requirements at end-2019.

DF-SIBs' emergency plans not yet accepted by FINMA

As part of the TBTF requirements, the three DF-SIBs must demonstrate to FINMA that they have effective 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, effective emergency plans are necessary for maintaining systemically important functions in a crisis. By end-2019, the three DF-SIBs' emergency plans exhibited different degrees of implementability, but none of them had been approved by FINMA.[27]

23 Bond yield spreads for banks with state guarantees may be biased compared to banks without guarantees. Data on bond spreads are available for around one-third of the domestically focused banks, including two DF-SIBs, with a market share of approximately one-third as measured by total assets.
24 Stand-alone ratings reflect banks' creditworthiness in the absence of external financial assistance, e.g. for ZKB without state support from the canton of Zurich. Ratings are available for around one-tenth of the domestically focused banks, including the three DF-SIBs, with a market share of approximately one-quarter.
25 Cf. Federal Council, CAO, version of January 2019 (*Eigenmittelverordnung*, not available in English).
26 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.
27 FINMA press release 'FINMA confirms the large Swiss banks' emergency plans are effective', 25 February 2020.

Abbreviations

AT1	Additional Tier 1
Basel III	International regulatory framework for banks developed by the BCBS
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CAO	Capital Adequacy Ordinance
CCyB	Countercyclical capital buffer
CDS	Credit default swap
CET1	Common Equity Tier 1
CoCos	Contingent capital
COVID-19	Coronavirus disease of 2019
DFB	Domestically focused bank
DF-SIB	Domestically focused systemically important bank
FDF	Federal Department of Finance
FINMA	Swiss Financial Market Supervisory Authority
F-IRB	Foundation internal ratings-based approach
FSB	Financial Stability Board
G-SIB	Global systemically important bank
GDP	Gross domestic product
HT CoCos	High-trigger contingent capital
IMF	International Monetary Fund
LT CoCos	Low-trigger contingent capital
LTI	Loan-to-income
LTV	Loan-to-value
NBA	National Bank Act
NGFS	Network for Greening the Financial System
NII	Net interest income
NPV	Net present value
OIS	Overnight indexed swap
ROA	Return on assets
ROE	Return on equity
RWA	Risk-weighted assets
SECO	State Secretariat for Economic Affairs
SFSO	Swiss Federal Statistical Office
TBTF	Too big to fail
TBTF2	Revised Swiss TBTF regulations
ZKB	Zürcher Kantonalbank

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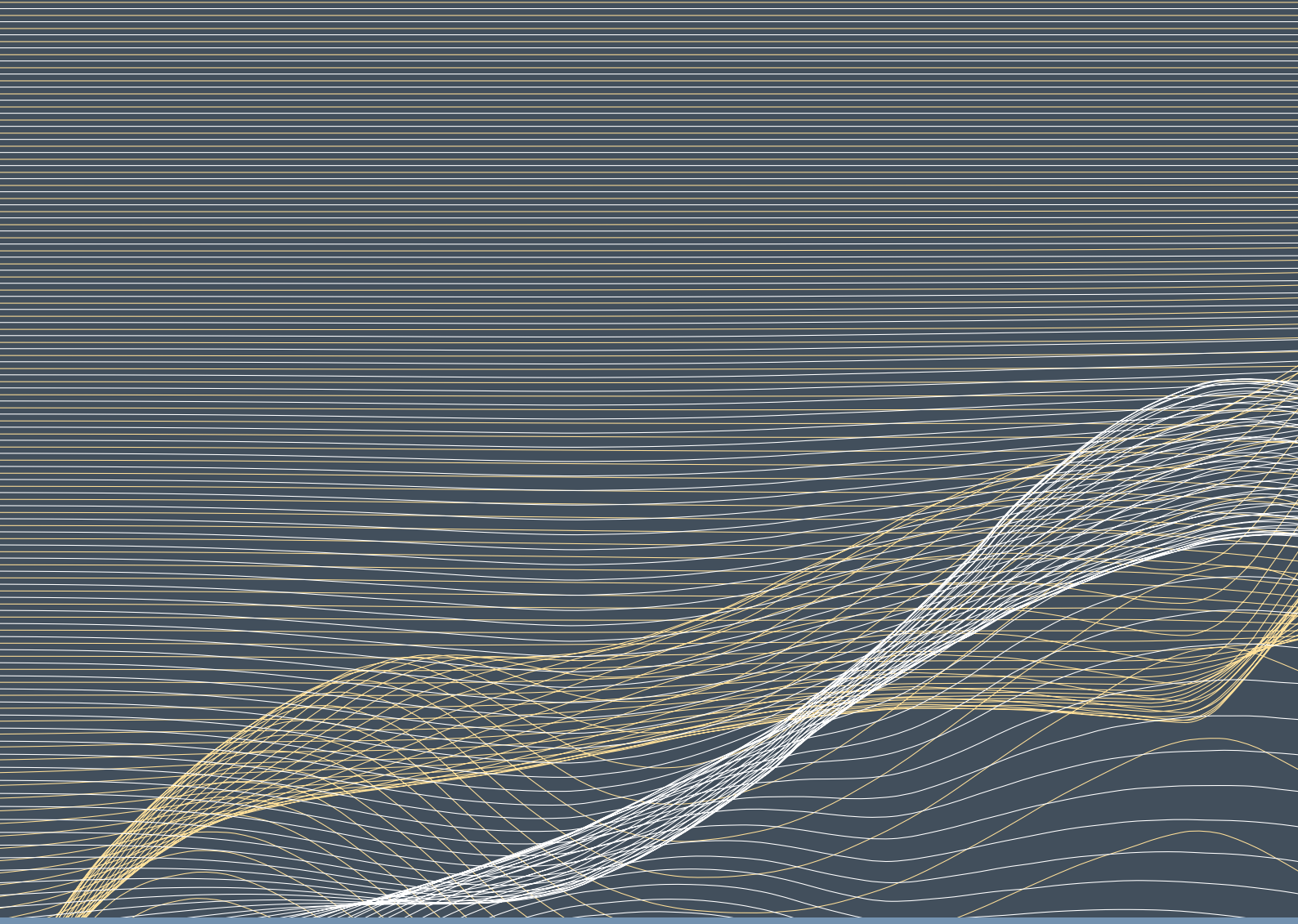

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