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Swiss National Bank, Library
P.O. Box, CH-8022 Zurich
Telephone +41 44 631 32 84
Fax +41 44 631 81 14
E-mail: library@snb.ch

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2009 Financial Stability Report

Foreword

This report highlights the main trends in the Swiss banking sector with respect to their impact on financial stability, to which the Swiss National Bank (SNB) is required to contribute in accordance with the National Bank Act (art. 5 para. 2 (e) NBA). A stable financial system can be defined as a system where the various components fulfil their functions and are able to withstand the shocks to which they are exposed.

Through this report, the SNB conveys its evaluation of the stability of the banking sector and provides the general public with relevant information and indicators. The report gives the SNB the opportunity to highlight tensions or imbalances that could jeopardise this stability. It is not the purpose of this report to analyse the solvency of individual financial institutions, and individual banks are only considered if this is deemed relevant for obtaining an overall picture.

Overall assessment

Severe deterioration in the economic and financial environment

The turbulence in the money and credit markets that erupted in mid-2007 took a turn for the worse during 2008, resulting in a global financial and economic crisis. Whereas, at the onset of the turmoil, the focus was on the prices of US real estate and assets connected to that market, the crisis has spilled over to numerous markets and countries, depressing the value of many assets on banks' balance sheets.

The stress in financial markets escalated after the collapse of the US investment bank Lehman Brothers in September 2008. Premia on unsecured money market transactions climbed drastically, risk premia on large international banks' debts reached historical peaks, share prices plummeted and uncertainty grew sharply. Governments and central banks all over the world responded with broad support measures aimed at preventing the financial system from collapsing (cf. box 2, p. 19).

The economic environment deteriorated more rapidly than most observers and market participants had been expecting in mid-2008. All over the world, the worsening of the crisis on the financial markets in autumn 2008 led to a major decline in GDP and a downward revision in economic forecasts. Switzerland was also affected, entering into

recession in the second half of 2008. In response to these developments, a number of fiscal and monetary policy measures have been enacted around the world. In Switzerland, the Swiss National Bank (SNB) has substantially lowered the target range for the three-month Libor and resorted to unconventional measures, buying Swiss franc bonds issued by private sector borrowers, engaging in additional repo operations and purchasing foreign currency on the foreign exchange markets (cf. box 2, p. 19). Acting as a mediator in a series of Swiss Pfandbrief (covered bond) transactions, the SNB has also helped reallocate funding between banks in Switzerland. Furthermore, the Swiss parliament has endorsed two economic stimulus packages.

Big banks hit hard by crisis – banks with a domestic focus still stable

The international financial market crisis and the deterioration in the economic environment have led to a rise in the overall level of stress in the Swiss banking sector (cf. chart 1, p. 6 and box 4, p. 42). Not all banks in Switzerland have been affected in the same way, however.

The two big banks – and especially UBS – have been hit hard by the crisis. They announced record losses running into billions of Swiss francs, largely attributable to the poor performance of their trading business. In addition, the market's confidence in the big banks has been seriously eroded. After the collapse of Lehman Brothers, confidence weakened even further. As a result, prices for credit default swaps (CDS) increased sharply, share prices plummeted, ratings were downgraded and the big banks' liquidity situation deteriorated.

During 2008, both Credit Suisse and UBS took measures to strengthen their resilience. In addition to reducing risky positions and the overall size of their trading portfolio and balance sheet, they raised sizeable amounts of capital. Credit Suisse managed to do so without financial support from the public sector. The resilience of UBS, on the other hand, was strengthened by both private capital – some of it already raised in the early stages of the crisis – and a package of government measures taken in October 2008. The main element of this package, put together by the Swiss government, the Swiss Federal Banking Commission (SFBC; now the Financial Market Supervisory Authority – FINMA) and the SNB, was the possibility for UBS to transfer up to USD 60 billion¹ of illiquid assets to a special purpose vehicle (SPV) of the SNB (the

¹ The amount for the maximum volume of assets to be transferred was subsequently reduced to USD 38.7 billion. Cf. www.snb.ch/en/mmr/reference/pre_20090403/source/pre_20090403.en.pdf.

SNB StabFund) in order to facilitate their orderly liquidation. The Swiss government, for its part, strengthened UBS's capital base by subscribing to mandatory convertible notes (MCN) in the amount of CHF 6 billion (cf. box 2, p. 19). Owing to all of these measures and mainly driven by developments at Credit Suisse, the big banks' capital situation improved slightly in 2008, despite the massive losses incurred.

However, even after the reduction of risky positions and of the overall size of their trading portfolios, the big banks' overall risk exposure continues to be material. In addition to the still sizeable market risks, they face a marked increase in credit risks as a result of the economic downturn. Their overall risk exposure appears material not only in absolute terms, but also relative to their ability to absorb future losses. First, while the big banks' leverage has decreased, it nevertheless remains high by both historical and international standards.² Losses in the order of roughly 2% of total assets at UBS and 3% at Credit Suisse would currently deplete most of these banks' capital base unless simultaneous corrective measures were taken.³ Second, as a result of the lower profit potential, the big banks' ability to absorb losses through current earnings has decreased.

Compared to the big banks, banks with a domestic business focus – cantonal banks, regional banks and Raiffeisen banks – present a more favourable picture. While these bank categories saw their average profitability shrink moderately in 2008, it still remains above the long-term average. In addition, their capital base remains high by his-

torical standards and they were able to build up their liquidity reserves last year, in particular as they attracted a substantial share of the liquidity that flowed out of the big banks during the crisis. However, the economic downturn will also pose an increasing challenge for them.

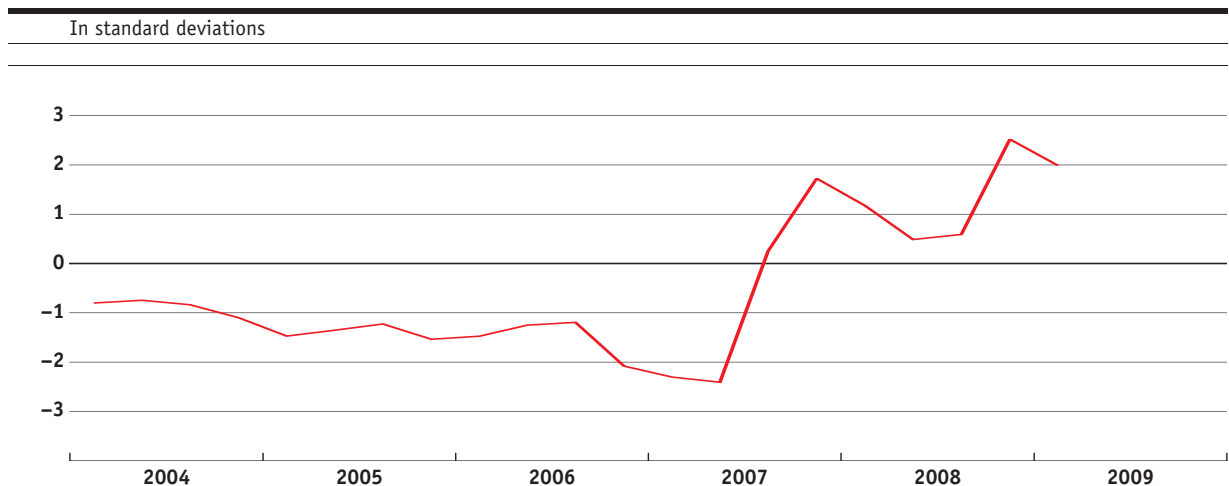
Outlook

The outlook is for a strong and generalised economic downturn. A sharp decline in real GDP is forecast for many countries, including Switzerland, in 2009. For instance, the SNB expects the Swiss economy to contract by 2.5% to 3%. The uncertainty regarding the length and severity of this economic downturn is large, however. Given this uncertainty, the SNB uses two scenarios in its assessment of the stability of the Swiss banking sector. First, a baseline scenario that represents the most likely developments in economic conditions based on the most recent forecasts. Second, in order to assess the impact of significantly worse developments than currently expected, the SNB also considers an adverse scenario.

The baseline scenario assumes that the many measures already taken by governments and central banks will lead to a gradual recovery in the global economy as of 2010, and to a stabilisation of financial markets. Even in that case, however, one must expect further real estate price corrections – in particular in some European countries – and a sharp deterioration in credit quality in the short and medium term.

Stress index*

Chart 1



Sources: Swiss Financial Market Supervisory Authority (FINMA), Swiss National Bank (SNB), Thomson Datastream. SNB calculations

* The higher the level of the index, the higher the level of stress in the Swiss banking sector. The index is expressed in terms of standard deviations from its 1987–2008 average. A value above (below) zero indicates that the stress is above (below) its historical average. The stress index for the first quarter of 2009 has been computed with provisional data. For a description of the underlying variables and the methodology, cf. box 4, p. 42.

2 The leverage of a bank is defined as the ratio between its debt and its capital.

3 At the end of Q1 2009, the ratio of Tier 1 capital to balance sheet total was 1.6% for UBS and 3.2% for Credit Suisse. Source: quarterly reports.

Under this scenario, substantial loan losses, lower earnings and a negative impact on capital are likely. Overall, however, the banks with a domestic focus appear in relatively good shape to withstand such a scenario. First, there are currently no signs of a real estate or credit bubble in Switzerland. The banks' losses resulting from Swiss lending business are therefore likely to be smaller than in countries such as the US or the UK. Second, owing to their high levels of capital and liquidity, the resilience of these banks to an economic downturn should be relatively high overall. The situation for the big banks appears more difficult. In addition to their exposure to deteriorating conditions on the domestic market, they are also exposed to decreasing credit quality abroad, notably in the US. Moreover, their capital situation and their leverage point to a lower resilience.

The adverse scenario considers a situation in which economic developments are significantly worse than anticipated at present: a deeper and much longer-lasting recession than currently forecast on the one hand, substantial price corrections on the financial markets on the other. Since the international banking system is already in a weakened state, the materialisation of such an adverse scenario would constitute a considerable threat to the stability of the Swiss banking sector.

It is therefore essential that the big banks take all the necessary measures to ensure their resilience to the eventuality of a further significant deterioration in economic and financial conditions. These measures include another reduction in their risk positions, a further strengthening of their capital base, the preservation of an adequate liquidity cushion and the alignment of their cost structure with the changed market environment.

Lessons learned and measures (to be) taken

The financial market crisis has exposed many weaknesses of both the banking sector and the regulatory framework. Some of these weaknesses were addressed last year. The big banks, for instance, have taken steps aimed at reducing their risk exposure and leverage, thereby increasing their resilience to shocks. Moreover, intensive efforts are under way to improve the regulatory framework of the financial system. At the international level, the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision are carrying out work on these issues. Switzerland is represented by

the Federal Department of Finance (FSB), the FINMA (Basel Committee) and the SNB (Basel Committee, FSB) (cf. box 1, p. 9).

In line with the efforts made at the international level, an initial set of measures has been drawn up in Switzerland. For instance, FINMA has taken important steps aimed at strengthening capital regulation for the two big banks. According to decrees issued by FINMA in 2008, the big banks will have to meet risk-weighted capital requirements in good times that are double what they are now. As a complement to the tighter risk-weighted capital requirements, FINMA has also introduced a 'leverage ratio', i.e. a limit to the banks' leverage. The SNB considers that leverage of over 20 in the banking sector is not prudent and is thus undesirable in good times. In other words, in good times, the capital base should account for at least 5% of the balance sheet total. This is in line with FINMA's requirements. FINMA expects the big banks' 'leverage ratio' to be well over 3% at group level and well over 4% for individual institutions in good times (cf. box 1, p. 9). To prevent a procyclical impact, these targets will apply as of 2013 at the earliest, leaving banks with enough time to recover from the current crisis. Moreover, in bad times, banks will be allowed to temporarily fall short of these targets. In addition to these measures targeting capital, extensive work is currently being carried out to draw up a more robust liquidity regulation for the big banks. FINMA and the SNB have been working together closely on all of these projects.

In addition to the major gaps in the regulatory framework, the crisis has also highlighted the scale and importance of the 'too big to fail' problem. The authorities, in Switzerland as elsewhere, have clearly indicated that they see the cost of a potential failure of a large banking institution as prohibitive, and that they are willing to take the necessary measures to avoid it. This willingness is justified from a crisis management perspective. From a longer-term perspective, however, it is problematic as it encourages greater risk-taking, thus making another major crisis more likely. The 'too big to fail' problems arising from bank support measures such as those taken during the crisis will have to be addressed decisively once the crisis itself has been dealt with. There are three potentially complementary approaches to doing this.

A first approach is to design a regulatory framework which ensures that systemically important financial institutions hold especially large cap-

ital and liquidity buffers. This lessens the likelihood of government assistance being required, cuts the cost of such an intervention and reduces the incentive for banks to take excessive risk (moral hazard) and inflate their balance sheets. The SNB will continue to support efforts in that direction, at both national and international level.

Second, the 'too big to fail' problem could also be mitigated by adapting the regulatory framework and the financial market infrastructure to enable an orderly wind-down of systemically important financial institutions in a crisis. As the consequences of the collapse of Lehman Brothers have shown, this is almost impossible today. Clearly defined and internationally coordinated wind-down procedures would help cut the costs of a bank failure. Hence, the SNB supports the ongoing international efforts in this regard. However, in spite of the efforts made, progress in this area might be slow due to the complexity of the interplay between international jurisdictions. Alternative approaches must therefore be given careful consideration as well. These include rules governing the organisational structure of large financial institutions. The aim of such rules would be to enable those units of a bank that are important for the functioning of the

economy to be split off, and the rest wound down. In order to be effective, as well as compatible with the universal bank model, such rules would have to be designed in close collaboration with the banks.

Third, should efforts to facilitate the wind-down of large financial institutions not result in significant progress within a reasonable time frame, further measures that tackle the root cause of the 'too big to fail' problem, i. e. the size of the institution, should be carefully examined. This can be done indirectly – as mentioned above – by creating incentives to reduce the size of banks by, for example, imposing more stringent capital and liquidity requirements on larger financial institutions. Measures that put a direct cap on the size of banks, by setting a limit on their market share or on their balance-sheet-to-GDP ratio, are also conceivable, however. While such measures would be far-reaching, they are by no means new. In the area of competition policy they are one of the tools commonly used for preventing market dominance. Nevertheless, in the area of financial stability, as in the area of competition, size-related benefits, such as economies of scale and risk diversification, would have to be carefully weighed against size-related costs.

Box 1. Strengthening the regulatory framework

International efforts

At the international level, various groups are working intensively on improvements to the financial regulatory framework. The improvements are aimed at making the financial system more robust. Of particular note in this regard are the efforts of the Financial Stability Board (FSB; formerly the Financial Stability Forum) and the Basel Committee on Banking Supervision. Switzerland is a member of both bodies, and is represented by the Federal Department of Finance (FSB), FINMA (Basel Committee) and the SNB (Basel Committee, FSB).

Based on its analyses and recommendations of spring 2008,⁴ the FSB drew up policy recommendations⁵ with a focus on the following areas:

- *Procyclicality.* The Board identified mechanisms in the existing regulatory framework and in market participants' behaviour which act to further reinforce negative shocks to the financial system. Proposals were drawn up on changes to regulation and accounting rules aimed at reducing this procyclicality. The proposals include increasing the capitalisation of the banking system and containing banks' leverage.
- *Compensation schemes.* To avoid excessive risk incentives for financial institution staff, principles for sound compensation practices were drafted. These principles are designed to ensure that the relevant decision-makers in financial institutions take appropriate account of the risks underlying their decisions, which in turn should limit excessive risk-taking. In particular, the principles address the governance of compensation, the alignment of compensation with prudent risk-taking, and supervisory oversight and engagement by stakeholders.
- *International cooperation and coordination.* Supervisory authorities need to cooperate more closely in normal times, to enable them to better identify risks at international financial institutions, as well as weak points in the financial system. Furthermore, there needs to be stronger coordination of cross-border crisis management, including how information is exchanged in crisis situations or to what extent joint crisis preparations should be made.

The Basel Committee is centring its efforts around strengthening its internationally used Basel II capital standards. In the medium term, the Basel Committee aims to arrive at a total level of capital that is higher than that defined in the current Basel II framework. At the moment, apart from the issue of procyclicality – which the FSB and others⁶ are also addressing – the Basel Committee is focusing on the following improvements:

- *Risk coverage.* The current crisis has shown that, under existing capital regulations, not all relevant risks are adequately covered. There is thus a need to better capture risks, especially in off-balance sheet items and the trading book.
- *Quality of capital.* The regulatory definition of capital also includes debt-like instruments. Since these instruments do not protect a bank from default, the extent to which they can be counted towards eligible capital should be reduced in future.

- *Supplementary measures of capital.* Since there is a danger that, even with the enhanced risk-weighted capital requirements, not all risks will be adequately taken into account, they should be supplemented with risk-independent measures of capital adequacy, such as a leverage ratio limit.

Measures in Switzerland

Against this background and in line with these international efforts, Switzerland has already implemented or set in train a first set of concrete measures, which constitute a significant contribution to financial stability:⁷

- *Higher capital requirements for the big banks.* In December 2008, FINMA issued decrees imposing higher capital requirements on the two big banks. According to these decrees, the big banks will have to meet risk-weighted capital requirements that are double what they are now. As a complement to the tighter risk-weighted capital requirements, FINMA has also introduced a 'leverage ratio', i.e. a limit to the banks' leverage. The SNB considers that leverage of over 20 in the banking sector is not prudent and is thus undesirable in good times. In other words, in good times, the capital base should account for at least 5% of the balance sheet total. This is in line with FINMA's requirements. FINMA expects the big banks' 'leverage ratio' to be well over 3% at group level and well over 4% for individual institutions in good times.⁸ To prevent a procyclical impact, these targets will apply in good times as of 2013 at the earliest, leaving banks with enough time to recover from the crisis. Furthermore, the big banks will be allowed to temporarily fall short of these targets in bad times. The definition of good and bad times is still an open issue. One suggested pragmatic and transparent definition, supported by the SNB, is that times are bad when a bank suffers losses, and good when it makes a profit. This solution has the advantage of allowing capital to develop its full potential as a buffer. Losses can be absorbed by the capital cushion without automatically triggering a damaging adjustment process. If a bank falls short of the prescribed targets, however, steps must be taken to ensure that it is able to meet these targets again within an appropriate time frame. At the very least, restrictions should be imposed on dividend payments and on asset growth as long as banks do not meet the capital targets. As regards defining the speed of adjustment, the SNB can make a valuable contribution by providing its macroprudential viewpoint.
- *More robust liquidity regulation for the big banks.* Liquidity requirements for the big banks are in the process of being comprehensively revised. The new regime will ensure that the big banks are able to cover their potential liquidity needs in the event of a widespread loss of market confidence. In contrast to the existing regime, liquidity flows from both balance sheet and off-balance-sheet operations will be taken into account in the new regime. Furthermore, the focus of the new regime will be on severe rather than moderate stress situations. The new regulation is likely to be finalised before the end of 2009 and enter into force soon afterwards.

4 *Report of the Financial Stability Forum on enhancing market and institutional resilience*, April 2008; available at www.financialstabilityboard.org/publications/r_0804.pdf.

5 The policy recommendations and associated background analyses are available at the FSB website: www.financialstabilityboard.org.

6 Notable contributions include: the proposals in the report 'The fundamental principles of financial regulation' by M. Brunnermeier, A. Crockett, Ch. Goodhart, A. Persaud, and H. Shin (forthcoming); the ideas formulated by the governor of the People's Bank of China in his speech on 26 March 2009 (available at www.pbc.gov.cn/english/detail.asp?col=6500&id=182); or the system of 'dynamic provisioning' already in effect in Spain.

7 Cf. box 1, 'Lessons learned', on p. 8 of the SNB's *Financial Stability Report 2008*.

8 This is a capital-to-assets ratio limit which excludes Swiss lending business from the balance sheet total. For details, cf. the Federal Government Message of October 2008 regarding the package of measures.

– *Strengthening of depositor protection.* As part of its package of measures announced in October 2008, the Swiss government decided on a comprehensive revision of the depositor protection scheme. The government plans to present concrete proposals in summer 2009. As an immediate expedient, the law was amended to enhance the existing depositor protection scheme.⁹ In particular, the ceiling for insured deposits was raised from CHF 30,000 to CHF 100,000.

The ‘too big to fail’ issue – potential solutions

The current crisis has shown that the ‘too big to fail’ problem is much larger than previously assumed. Fearing the economic consequences of the failure of systemically important financial institutions, governments throughout the world were forced to come to the aid of large and ailing institutions. This ‘too big to fail’ policy does not just bring high bailout costs for the public sector; it also involves moral hazard. Large financial institutions are faced with strong incentives to take on excessive risk: so long as everything runs smoothly, they reap the benefits. When things go wrong, the taxpayer bears a substantial share of the losses. Although a number of countries have been confronted with this issue, it has particular relevance for Switzerland. The country’s two big banks are regarded as too big to fail by market participants and rating agencies alike, owing to their importance – in terms of both their market share and their balance sheet size, which represents a multiple of Swiss GDP (cf. box 3, p. 28). In view of the severity of the problem, a number of requests have been submitted to parliament, calling for a solution to be found.¹⁰

There are three basic strategies for resolving, or at least alleviating, the ‘too big to fail’ problem. First, one can impose very strict capital and liquidity regulations on systemically important financial institutions. This can reduce both the likelihood of government assistance being required and the cost of such an intervention. Moreover, strict capital requirements reduce moral hazard, by forcing banks to themselves bear more of the risk of losses, and also reduce the banks’ incentive to inflate their balance sheets. At both the international level and within Switzerland, the SNB is working for a sounder regulation of systemically important banks.

Second, one can adapt the legal framework and the financial market infrastructure to simplify, or make possible, an orderly wind-down of large financial institutions during periods of severe crisis. Today, as a result of their cross-border activities and close linkages with major counterparties and markets, the orderly wind-down of a systemically important institution would be almost impossible (‘too interconnected to fail’). Clearly defined and internationally coordinated wind-down procedures can help to cut the costs of a bank failure. The SNB supports the ongoing international efforts in this area. Yet it is also aware that the interplay between international jurisdictions is extremely complex and that a solution is correspondingly challenging and time-consuming. If no progress is achieved at the international level, Switzerland should, once the current crisis has been overcome, consider solutions that can be implemented in a purely domestic context. In such a

case, an orderly wind-down of entire banking groups or holding companies will not be possible. However, one should examine the extent to which, in a crisis, those big bank units that are economically important for the Swiss economy can be split off and possibly transferred to other banks within the country and the rest wound down. This requires close cooperation with the banks, in order to define an appropriate organisational structure which would simplify such a wind-down, while remaining compatible with the universal bank model.

Third, one can directly tackle the cause of the ‘too big to fail’ problem by limiting the size of financial institutions. One could consider direct size restrictions, for instance by imposing a maximum market share or balance-sheet-to-GDP ratio, or indirect incentives – as mentioned above – such as increasingly strict capital requirements for big banks. Yet it should be borne in mind that size can also have its advantages. True, economies of scale – larger amounts can be produced at lower average cost – can already be achieved with relatively small banks.¹¹ But if a bank is active in different regions or business areas, this contributes to better diversification and thus to lower risks. For instance, the strength of the big banks’ foreign business was a major factor in stabilising the Swiss banking sector in the first half of the 1990s. Therefore, it would not seem advisable to prohibit certain activities. Moreover, one should not forget that a banking system made up of only small banks is not an automatic guarantee of stability.¹² Although size restrictions are a radical measure, the SNB takes the view that this instrument should be seriously examined if efforts to facilitate the wind-down of large financial institutions do not result in significant progress within a reasonable time frame.

9 Federal Act on Banks and Savings Banks (strengthening of depositor protection), amended 19 December 2008.

10 For example, the motion on ‘Prevention of unacceptable risks for the Swiss economy’ (National Council motion 08.3649) requests the Swiss government to set up a committee of experts, with the task of proposing measures to limit risks in the event of failure of a large Swiss company. The motion ‘Fewer risks for the financial market’ (National Council motion 09.3019) explicitly calls for domestic and foreign banking activities to be separated.

11 Cf. for example, Y. Altunbas et al., ‘Efficiency in European banking’, *European Economic Review* 45, 2001, pp. 1931–1955.

12 One can take as an illustration the savings & loan crisis in the US at the end of the 1980s, or the regional banking crisis in Switzerland in the early 1990s. In both cases, a large number of small banks were simultaneously confronted with the same problem, resulting in the destabilisation of the banking system as a whole.

1 General economic and financial conditions

The general economic and financial conditions for the Swiss banking sector deteriorated further in 2008. The financial turmoil, which started in 2007, intensified and extended to a global financial crisis and economic downturn. The onset of the crisis saw decreasing house prices in the US and falling prices of real estate-related securities. Since then, a broad range of assets has been affected, and economic output has contracted sharply. As a result of these developments, many financial institutions were faced with increasing refinancing difficulties and reported record losses in 2008. Some institutions failed or had to be supported by the authorities.

The major economies are expected to suffer further deterioration in 2009, before recovering gradually as of 2010. As a consequence, credit risk is likely to increase significantly both in Switzerland and abroad. The US and some European countries are likely to be hit harder than Switzerland due to adverse developments on their housing markets.

The materialisation of this baseline scenario, however, depends to a large extent on the success of the efforts made to revive economic activity and to restore and maintain confidence in the financial sector. Should such efforts fail, there is a risk of a substantially more adverse scenario, where global recession could be deep and long lasting. In such a scenario, conditions for the stability of the Swiss financial system would deteriorate even further.

Economic environment

The financial crisis, which has developed into the most severe crisis of the post-World War II era, has severely hit the real economy. With output contracting sharply in a large number of countries in the final quarter of 2008 and the first quarter of 2009, the downturn has deepened and become global. Emerging economies have also been affected by the crisis: their export demand has plunged and many of them have seen a sharp drop in capital inflows.

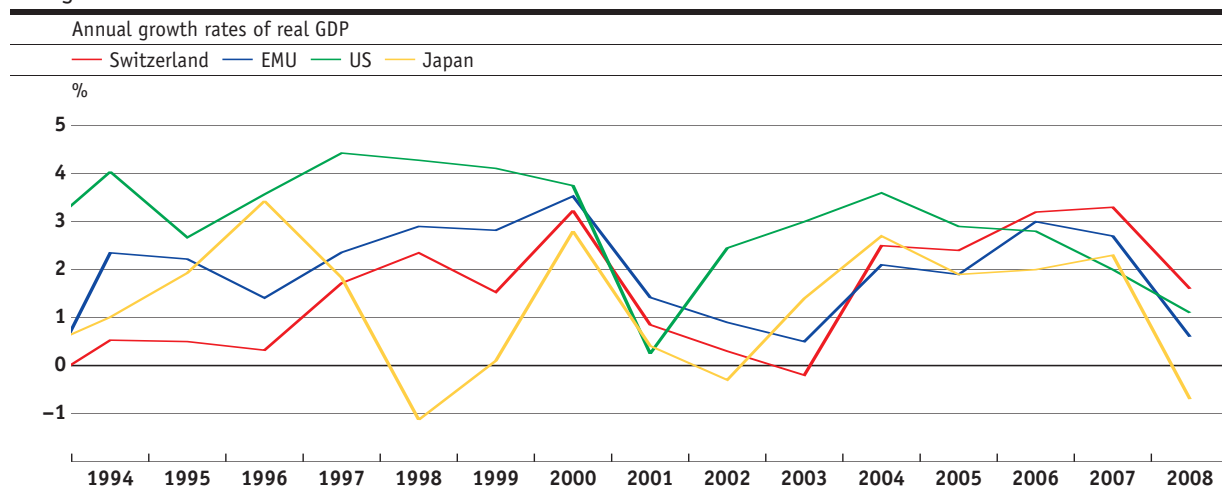
The impact of the financial crisis and the global recession on the Swiss economy was relatively mild in 2008. At 1.6%, Swiss GDP grew more strongly than GDP in the US and the euro area (cf. chart 2). However, economic activity also declined sharply in Switzerland in the fourth quarter of 2008 and the first quarter of 2009.

Prospects for the global economy remain bleak, although various indicators suggest that the pace of contraction has slowed. Credit constraints, huge wealth losses and a rapidly deteriorating labour market are weighing heavily on global economic activity. Against this background, GDP is expected to contract substantially in the US, the EU and Switzerland in 2009. Supported by fiscal and monetary measures, a gradual recovery in these economies is expected as of 2010. In emerging markets, the IMF forecasts weak economic growth in 2009 and a gradual strengthening in the following year.¹³

Furthermore, uncertainty as to the length and depth of the recession is high and risks remain tilted to the downside. Real estate crises in combination with banking crises tend to have a long-term

GDP growth

Chart 2



Source: SNB

13 Cf. IMF, *World Economic Outlook*, April 2009.

depressing effect on the economy. During the Great Depression in the US and following the financial crises in Finland (1991) and Argentina (2001), for instance, per capita GDP in these countries declined for four consecutive years. This is about twice as long as the average duration of a negative growth period following a financial crisis.¹⁴

Funding conditions

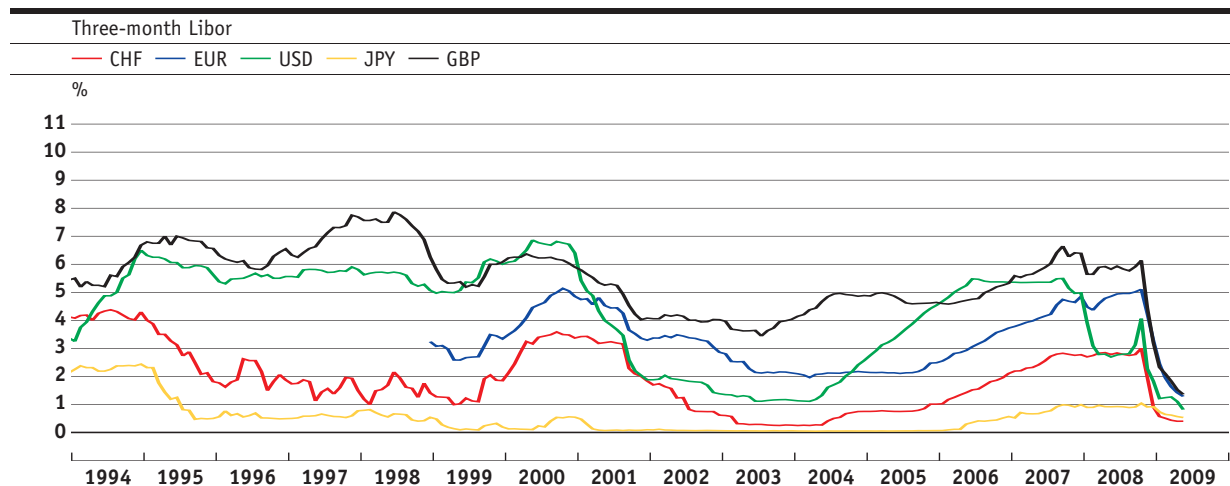
In reaction to falling inflation rates, the weakening economic outlook and tight funding conditions for financial institutions, all major central banks significantly relaxed monetary conditions in 2008 and early 2009. This led to a sharp fall in short-term interest rates, especially in the US, the UK, the euro area and Switzerland (cf. chart 3).

Further measures were taken to alleviate the growing refinancing difficulties in the banking sector. In various countries, banks were given the possibility to issue state-guaranteed debt on the money or capital markets. In Switzerland, the SNB acted as a mediator in private sector transactions involving Swiss Pfandbrief bonds that helped reallocate funding within the banking sector, thereby contributing to reduce refinancing difficulties experienced by the big banks.

In spite of these measures, overall liquidity and funding conditions remained unusually tight throughout 2008, especially for large international banks. This is reflected in the record values reached by the IMF Funding and Market Liquidity Index¹⁵ and the Bank of England Liquidity Index.¹⁶ These

Short-term interest rates

Chart 3



Money market spreads

Chart 4

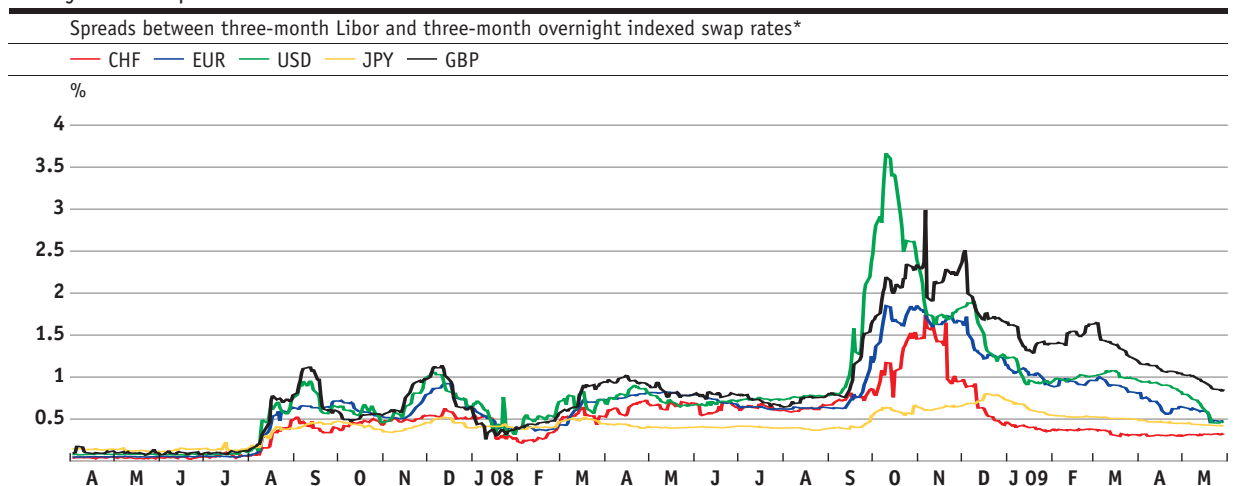


Chart 3: Source: Reuters

Chart 4: Sources: Bloomberg, SNB

* The overnight rates are: TOIS for CHF, EONIA for EUR, OIS for USD, TONAR for JPY, SONIA for GBP.

14 Cf. C. M. Reinhart and K. S. Rogoff, 'The aftermath of financial crises', *NBER Working Paper 14656*, 2009.

15 Cf. IMF, *Global Financial Stability Report*, April 2009.

16 Cf. Bank of England, *Financial Stability Report*, October 2008.

indices combine different measures of liquidity on equity, foreign exchange and money markets. Developments on the money market are representative of these abnormal conditions. As can be seen in chart 4 on p. 12, the risk premia charged on the interbank market reached levels in 2008 that are extremely high, even when compared to the peaks observed in 2007. Conditions improved considerably after the period of acute stress that followed the failure of Lehman Brothers in September 2008. However, risk premia remain significantly above the low levels observed before the onset of the crisis in August 2007.

Stock market

The weakening economic outlook, increasing risk perception and deleveraging of financial institutions have led to an unexpectedly large drop in stock prices. Since their peaks in 2007, stock indices have fallen (peak to trough) by about 50% in Switzerland and the US, and by more than 60% in the euro area and emerging markets before recovering somewhat in April and May 2009 (cf. chart 5).

In most countries, the magnitude of these price corrections was greater than during all other post-World War II crises.¹⁷ It is comparable with the price correction that followed the stock market crash in 1929. At that time, the Dow Jones lost about 50% in the first year and a half following its peak, before losing another 40 percentage points in the subsequent 12 months.

The drop in stock prices is not only remarkable from a historical perspective, but also in comparison to the development of variables, like earnings, divi-

dends and interest rates, which are driving factors of stock prices. Price/earnings ratios, for example, have fallen significantly since the onset of the crisis (cf. chart 6, p. 14) and are now below their long-term averages. This might indicate that stock prices have overreacted, making further large and persistent price declines relatively unlikely. However, since the price/earnings ratios only reflect past earnings, another interpretation could be that the market expects very weak results for stock companies.

Given the comparably low stock market valuations and the anticipated gradual economic recovery as of 2010, the scope for further large and persistent price declines seems limited. However, if economies do slide into a deep and long-lasting recession, revised earnings expectations might depress stock prices further. In addition to a weak economy, stock prices can be negatively influenced by factors such as a renewed deterioration in market sentiment and an ongoing deleveraging process. Taking the 90% decrease of the Dow Jones following its peak in 1929 as a very adverse reference, there is still room for further, substantial declines.

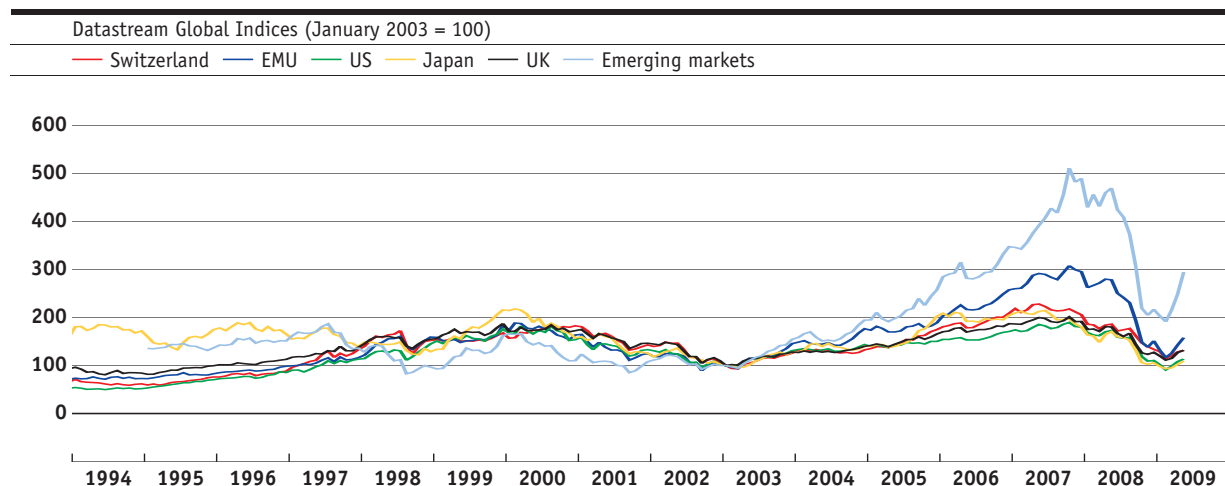
Housing market

In 2008, the decline in US house prices accelerated. According to the Case-Shiller National Home Price Index, real US house prices fell by 34% between their peak in 2006 and the end of 2008 (cf. chart 7, p. 14). Compared to previous housing crises, such as in Switzerland or in Japan in the early 1990s, this was a remarkably fast and strong decrease.

House prices also declined significantly in some European countries. Real UK house prices, for example, dropped by about 20% in 2008, thereby

Stock market indices

Chart 5



Source: Thomson Datastream

17 For example, the Nikkei after its peak in 1989 or the Dow Jones following its peak in 1973, 1987 or 2000.

exceeding the speed of the decline in US house prices. In countries like Germany, Japan and Switzerland, meanwhile, no material house price corrections have been observed since the onset of the crisis.

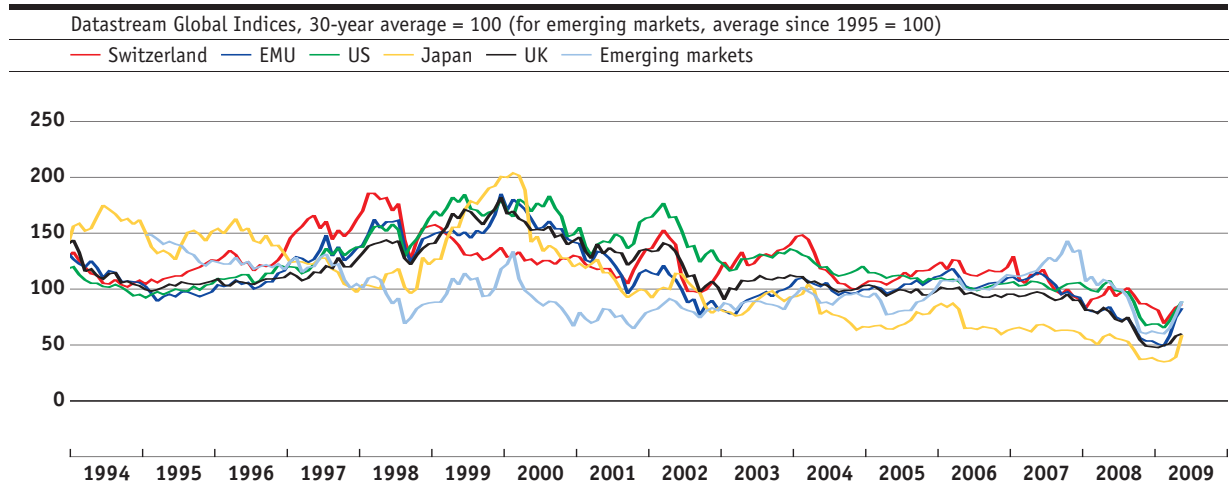
According to the futures on the Case-Shiller Index, the market expects that the decrease in US house prices will slow in 2009 and that prices will reach their turning point in 2010.¹⁸ By then, prices are projected to have decreased by another 12%. The total expected drop in real house prices – about 45% – is larger than what was observed in the UK (27%) and Switzerland (39%) after prices peaked around 1990, yet smaller than the drop in Japanese house prices after they peaked in 1990 (48%). Empirical evidence on real estate crises indicates that real house prices decline, on average, for six

years and by about 36% after their peak.¹⁹ Hence, current and expected developments in the US are very pronounced, but not exceptional by historical standards.

Further price corrections are also likely in various European countries. Housing markets in countries such as Ireland, Spain and the UK have experienced even stronger price increases in the last decade than the US. At the same time, recent price corrections in these countries have been significantly smaller than in the US. In countries where real house prices increased only moderately in the last decade (Switzerland) or even declined (Germany or Japan), a sharp fall in prices appears relatively unlikely if economic growth were to gradually resume, as expected, as of 2010.

Stock market price/earning ratios*

Chart 6



House prices, years before and after peak

Chart 7

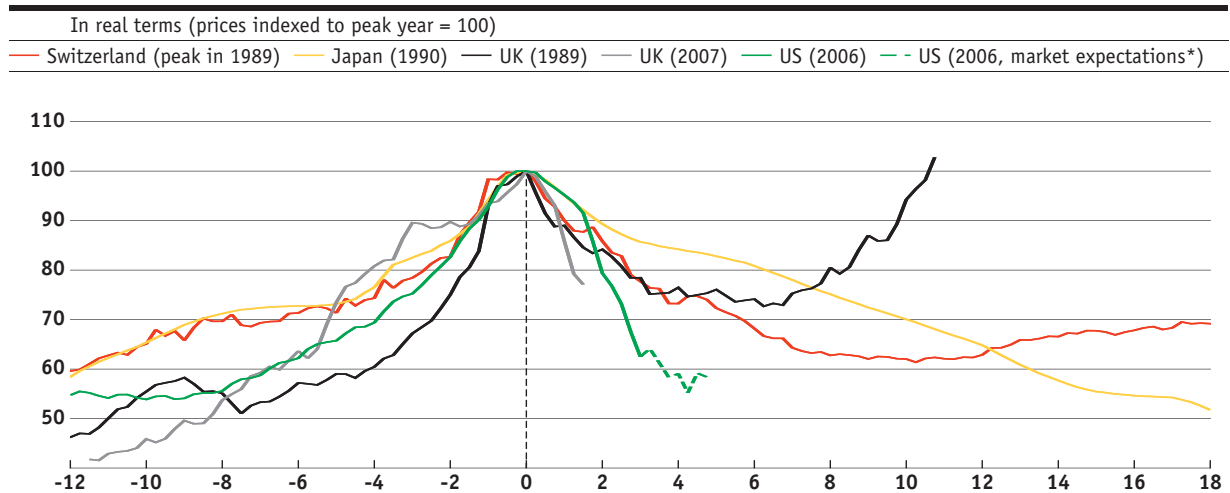


Chart 6: Source: Thomson Datastream
* Earnings are realised earnings per share.

Chart 7: Sources: BIS, Standard & Poor's/Case-Shiller, IMF
* Market expectations for the Case-Shiller Index as reflected by the corresponding futures.

18 It should be noted that the reliability of the futures on the Case-Shiller Index as a proxy for market expectations of house prices is limited, due to the low liquidity of the market for these instruments.

19 Cf. C. M. Reinhart and K. S. Rogoff, 'The aftermath of financial crises', *NBER Working Paper 14656*, 2009. The authors look at house price cycles surrounding banking crises.

Should the adverse scenario of a deep and long-lasting global recession materialise, however, unexpectedly large housing market price adjustments are likely to occur due to negative feedback loops. In this case, even countries where no widespread price corrections are currently expected, such as Switzerland, could be affected.

Credit quality

Falling real estate prices, the weakening economic environment and tighter lending conditions have led to a decline in credit quality in the US. Whereas at the beginning of the financial turmoil, mainly real estate loans were affected, the problems have now spread to consumer and business loans. Delinquency rates on consumer and real estate loans have already reached multi-year highs, while those on business loans are still below their levels of the early 1990s (cf. chart 8). A decline in the credit quality of corporate borrowers is also indicated in Moody's ratio of downgrades to upgrades of US companies. This ratio increased substantially in 2008, reaching its previous peak of 2003.

According to the European Central Bank (ECB) and the Bank of England, the balance sheets of European companies remained resilient in 2008.²⁰ However, due to the contracting economy, decreasing house prices, high leverage of borrowers and tighter lending conditions of banks, European companies and households have become more vulnerable. This is also indicated by Moody's ratio of downgrades to upgrades of European companies. As with the US, this ratio has recently increased to its previous peak level of 2003.

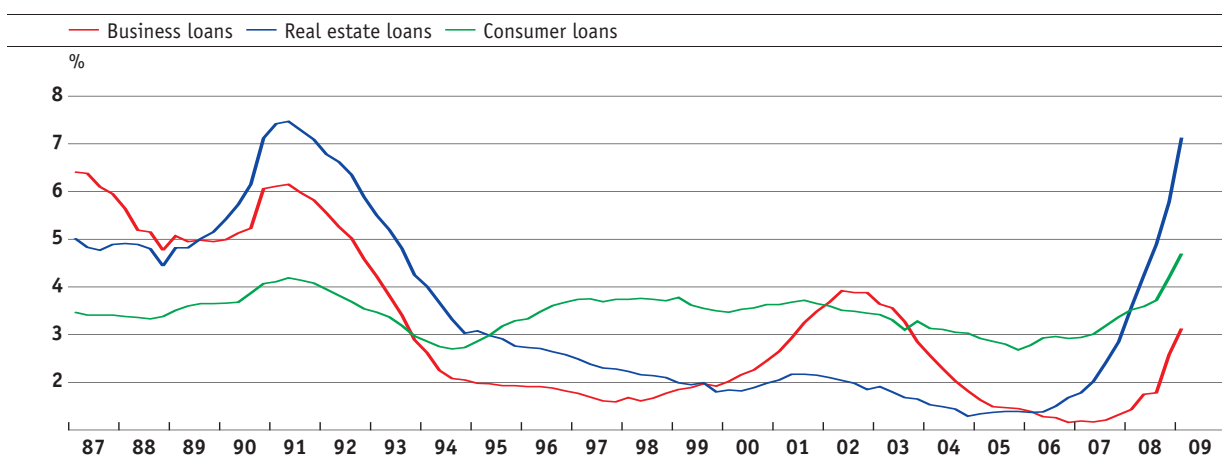
The overall credit quality of Swiss borrowers remained robust in 2008. In Switzerland, house prices remained relatively stable overall, while unemployment rates started to increase slightly towards the end of 2008, but maintained a low level. As a result, the credit quality of Swiss households did not deteriorate. On the contrary, for the first time in eight years, the number of household insolvencies decreased in 2008. The number of corporate insolvencies, however, increased in the fourth quarter of 2008.

In the near future, a further and substantial decrease in overall credit quality is anticipated. The development of corporate bond spreads, for example, indicates that market participants expect delinquency rates among US and European companies to reach levels that are far higher than at their previous peak in 2002 (cf. chart 9, p. 16).

According to IMF estimates, commercial bank loan charge-offs in the US and Europe will also exceed the levels reached in the 1991–1992 recession, even though they should remain below the levels experienced in the US during the Great Depression.²¹ Reasons for the anticipated deterioration in creditworthiness are the expected further deepening of the recession and the fall in house prices in many countries. In addition, according to the lending surveys of the ECB and the Federal Reserve, banks in the euro area and the US tightened their lending standards in 2008. Companies that rely on bank credits are therefore being confronted with increasing refinancing difficulties. Nevertheless, under the condition that economic output will gradually recover in 2010 and the house

US delinquency rates

Chart 8



Source: Federal Reserve

20 Cf. ECB, *Financial Stability Review*, December 2008, and Bank of England, *Financial Stability Report*, October 2008.

21 Cf. IMF, *Global Financial Stability Report*, April 2009. US charge-off rates are expected to peak at 4.4% vs. below 2% in the 1990s and about 5% during the Great Depression. European charge-off rates are expected to peak at 2.9% vs. about 1.5% in the 1990s.

price decrease will slow, default rates might already peak in 2010. This is also indicated by the aforementioned IMF estimates.

According to bond spreads, the increase in default rates in Switzerland might be lower than in the US or some European countries (cf. chart 9). The relative optimism of market participants regarding future default rates in Switzerland might reflect the overall soundness of the Swiss credit and housing markets, which have experienced moderate growth rates in the last decade. Furthermore, in contrast to the observations made in the EU and the US, credit standards remained almost unchanged in Switzerland for most of 2008 and were only slightly tighter in the fourth quarter of 2008 and the first quarter of 2009, according to the SNB lending survey.

The SNB's baseline scenario assumes that delinquency rates in the US and Europe will peak soon. However, if these economies do not gradually recover in 2010, a stronger and longer-lasting increase in delinquency rates could become likely. The future development of the creditworthiness of households also depends on the development of house prices. If prices continue to fall in the US and drop strongly in some European countries, delinquency rates among households might increase far above the already high levels that are expected to be reached in the baseline scenario. Although the outlook for the credit quality of Swiss borrowers appears less worrisome, a deep and long-lasting recession in Switzerland would also lead to high delinquency rates among Swiss companies and households by historical standards.

International financial institutions

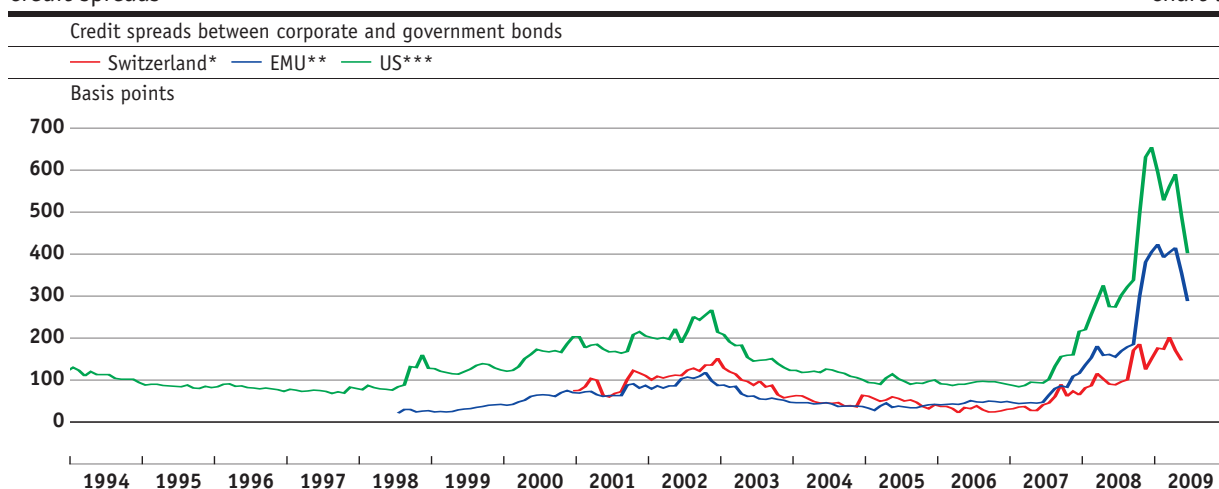
The fall in many asset prices has led to high trading losses for a large number of international financial institutions in Switzerland and abroad. In addition, they have been faced with a deterioration in the quality of their loan portfolios, as well as severe and mounting refinancing difficulties. As a result, many of them reported record losses in 2008 and were forced to raise additional capital. In the meantime, write-downs and credit losses of banks around the globe have added up to almost USD 1,500 billion. At the same time, they raised about USD 1,200 billion in new capital, including substantial amounts of public money.²²

As a consequence, the market participants' assessment of the value and solidity of these financial institutions has deteriorated. The risk and liquidity premia that banks have to pay on the money markets (cf. chart 4, p. 12) have increased, their market value has dropped and the credit default swap (CDS) premia on their debt has increased substantially since early 2007 (cf. chart 10, p. 17).

Insurance companies were affected, too. As a result, stock prices of many insurance companies – in particular in Switzerland – decreased significantly and the CDS premia on their debt spiked. American International Group (AIG), a large international US-based insurance company, even had to be supported by the public sector. This support was motivated by financial stability concerns, given the company's large-scale involvement in the insurance of credit risk, in particular through the issuance of CDSs.

Credit spreads

Chart 9



Source: Thomson Datastream

22 Source: Bloomberg

- * Yields (spot rates) for Swiss investment grade corporate bonds and for Swiss Confederation bonds, calculated by the SNB.
- ** Euro-Aggregate Corporate (investment grade, EUR-denominated) and Euro-Aggregate Government AAA indices, Barclays Capital.
- *** US Corporate (investment grade, USD-denominated) and US Treasury indices, Barclays Capital.

Although the increasing role played by insurance companies in the credit risk market has allowed that risk to be spread more widely, it has also created a direct and important contagion channel between the insurance and banking sectors. In Switzerland, this contagion channel is relatively narrow, however, as the Swiss insurance sector does not insure a material share of the credit risk in the Swiss banking sector. Hence, while the negative developments affecting this sector in Switzerland have added to the general deterioration of financial and economic conditions, they do not represent a direct threat to the stability of the Swiss banking sector.

The outlook for large international financial institutions abroad remains gloomy. The IMF estimates that, from 2007 to 2010, aggregate write-downs on global holdings of US, European and Japanese loans and related securities will be about USD 4.1 trillion. Banks are expected to bear about USD 2.5 trillion of these write-downs.²³ Given that banks have already realised write-downs and losses of about USD 1.5 trillion, they would still have to write down about USD 1 trillion. Since these estimates are based on a broad range of assumptions, the results are highly uncertain and should be interpreted with caution. Nevertheless, the results indicate that potential future losses of banks are very high.

An estimate of potential future losses of the largest US banks is provided by the Federal Reserve and other US bank supervisors within the context of the Supervisory Capital Assessment Program (SCAP).²⁴ In the adverse scenario, the 19 largest US

bank holding companies (BHC) would suffer losses of USD 600 billion in 2009 and 2010. It is important to note that, due to the smaller sample (19 US BHCs vs. global banks), the shorter time horizon (two vs. four years) and the different focus (estimates vs. adverse scenario), the potential losses cannot be compared directly with the IMF estimates. However, the SCAP results also suggest that, should the environment continue to deteriorate, banks will suffer further, substantial losses.

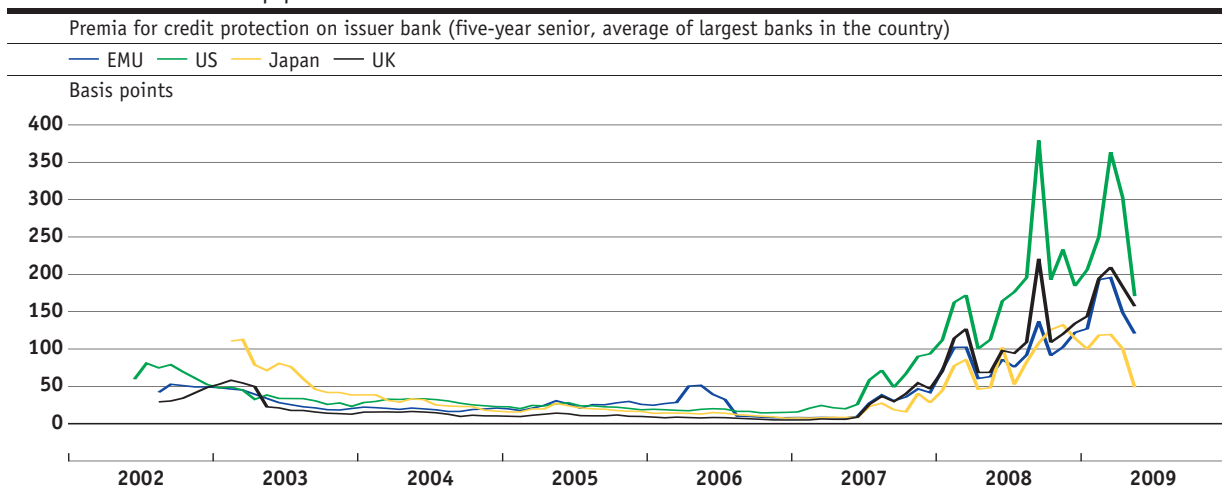
Since the beginning of the crisis, most financial institutions were able to cover a large part of their losses by raising additional capital, in many cases with substantial government assistance. However, a further strengthening of the capital base might be necessary – particularly in the banking sector – in order to ensure an adequate level of resilience against potential adverse macroeconomic developments. For the largest US BHC only, SCAP estimates show that capital requirements will amount to USD 75 billion.

Sovereign risk

As a consequence of the crisis, the perceived credit risk on sovereign debt increased substantially in 2008. Fiscal stimulus packages and measures to stabilise the financial sector are very costly and have increased the risk exposure of the public sector. Furthermore, with economic output contracting sharply, tax revenues are expected to decrease. In addition, the higher risk perception has led to a sharp drop in capital inflows for several emerging markets. These developments are reflected by the

Bank credit default swap prices

Chart 10



Source: Bloomberg

23 Cf. IMF, *Global Financial Stability Report*, April 2009.

24 Cf. Federal Reserve, *The Supervisory Capital Assessment Program: overview of results*, 7 May 2009.

significant increase in the premia charged in the markets as an insurance against the default on sovereign bonds. While this also impacted G10 countries, emerging markets, such as Argentina, Russia or Ukraine, were particularly affected. Some euro area countries also saw CDS premia increase substantially (cf. chart 11). In most countries, CDS premia have come down since their peaks in late 2008/early 2009. However, they are still much higher than before the onset of the current crisis.

The deteriorating financial strength of some countries might reduce their governments' ability or willingness to take further fiscal and financial sector stabilisation measures. This, together with higher risk of default on sovereign debt, represents an additional threat to global financial stability.

Outlook

The general economic and financial conditions for the Swiss banking sector are expected to deteriorate moderately in the near future. The GDP outlook for 2009 is negative for all major economies. In addition, house prices are expected to decrease further in the US and some European countries. These developments are likely to translate into increasing default rates on consumer and corporate loans. While the situation appears less serious in Switzerland, default rates are expected to rise

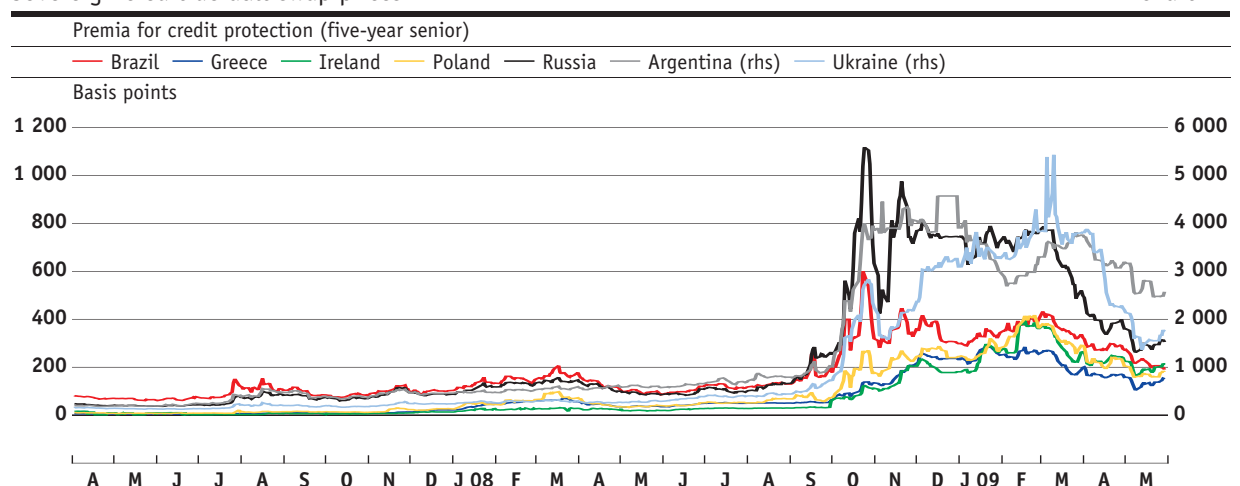
significantly here too. Measures by governments and central banks should, however, help economies to gradually recover as of 2010 and restore confidence in the financial sector. As a consequence, default rates are expected to peak in 2010 and the scope for further material price corrections on the financial markets appears limited.

The materialisation of this baseline scenario, however, depends to a large extent on the success of the efforts made to revive economic activity and to restore and maintain confidence in the financial sector. Should such efforts fail, there is a risk of a substantially more adverse scenario, where global recession could be deep and long lasting. In such a scenario, conditions for the stability of the Swiss financial system would deteriorate even further. Default rates on consumer and corporate loans could reach levels in excess of previous historical peaks. Furthermore, the likelihood of large and broad-based price corrections affecting many classes of financial assets would increase, both in Switzerland and abroad.

Large international financial institutions should take the necessary steps to ensure that they are resilient enough to withstand such adverse developments. This should prevent the crisis from escalating to new heights if such a scenario were to materialise.

Sovereign credit default swap prices

Chart 11



Source: Thomson Datastream

Box 2. Chronology of the financial crisis

Phase 1: Prior to 9 August 2007

Falling US house prices and increasing financial market nervousness.

Prior to 2007, the world economy is characterised by rapid growth in economic activity and asset prices, highly liquid financial markets and low levels of perceived economic and financial risk. The US housing market is booming. Financial institutions are very active in these years, securitising US mortgages of all qualities into mortgage-backed bonds, which in turn are increasingly used as underlying assets for more complex mortgage-backed securities. The resulting securities are sold worldwide, and in particular to banks and financial institutions. At the same time, many financial institutions, among them Credit Suisse and UBS, increase their risk-taking, leverage and profitability in these years. Demand for mortgage-backed securities is strong.

Key events:

February 2007:

- Prices of sub-prime mortgage-backed securities start falling.

May 2007:

- UBS announces the reintegration of one of its hedge funds (Dillon Read Capital Management) into its investment bank, after suffering losses related to the US mortgage-backed securities market.

June 2007:

- Moody's, a rating agency, downgrades a range of sub-prime mortgage-backed bonds.
- Two hedge funds of Bear Stearns, a US investment bank, collapse due to losses related to sub-prime securities.
- The SNB raises the target range for the three-month Libor.

Phase 2: 9 August 2007 to 15 September 2008

Three waves of money market stress.

US house prices continue to fall over the coming months, and as a result, security prices backed by US mortgages also decline. Risk premia increase across the board, and stock prices embark on a long decline. Gradually, large banks and financial institutions across the world reveal major write-offs and losses as a consequence of exposure to the US real estate market. These write-offs reach a total of USD 504 billion in September 2008.²⁵ Many banks take measures to increase their capital base. In late 2007, Northern Rock (UK) nearly collapses, as does Bear Stearns (US) in early 2008, in both cases following a loss of market confidence that severely reduces their capacity to fund their operations. Fannie Mae and Freddy Mac, the big US government-sponsored mortgage lenders, nearly fail due to severe capital deficiency in late summer 2008. In all of these cases, different types of public sector intervention and support prevent outright bankruptcy and failure.

In Switzerland, UBS makes a series of announcements of losses attributable to the drop in the market value of its large holdings of securities backed by US sub-prime mort-

gages. Economic growth loses momentum in late 2006 and house prices in major US cities stall. In early 2007, an effective US housing market bust leads to an increase in delinquency rates in the sub-prime segment of the US mortgage market. Prices of mortgage-backed securities begin to fall. The US housing market bust is instantly propagated to financial institutions around the world through securities backed by US mortgages. By early summer, the first casualties among financial institutions occur. Concerns among market participants regarding the magnitude and concentration of the exposures of financial institutions – and notably those of the Swiss big banks – to the US housing market escalate in the first week of August. By 9 August, a crisis of confidence has developed on the interbank money markets, and liquidity in many markets has dried up.

July 2007:

- UBS replaces its CEO.
- Several more hedge funds fail due to sub-prime-related losses.
- HSBC, a British banking group, announces sub-prime-related losses, and IKB, a German Landesbank, reports substantial sub-prime-related losses in one of its special investment vehicles (SIVs).

August 2007:

- In the first week of August, IKB brings the troubled SIV on to its balance sheet, and is in turn rescued by the German government.
- Rumours about other institutions – notably Northern Rock, a UK mortgage lender – intensify.
- On 9 August, BNP Paribas, a French banking group, freezes three funds due to losses related to US sub-prime mortgage markets.

gages. UBS's disclosed gross losses on these positions amount to USD 44.2 billion by September 2008.²⁶ The bank incurs an annual net loss of about CHF 4.4 billion for 2007, and CHF 11.9 billion in the first half of 2008. UBS takes measures to significantly strengthen its capital base during this period. By September 2008, it has raised about CHF 28.3 billion of fresh capital from private investors since the beginning of the financial crisis.²⁷ UBS also sells off part of its exposures to the US real estate market. Credit Suisse stays profitable in 2007, but suffers a loss of CHF 0.9 billion in the first half of 2008. By September 2008, Credit Suisse has gradually disclosed what amounts to USD 10.1 billion of gross losses and write-downs related to the crisis.²⁸ In contrast, Swiss banks with a domestic business focus prove not to be substantially exposed to the US real estate market, and are therefore not materially affected by the financial turmoil at this point.

The magnitude of banks' disclosed exposures on the US sub-prime mortgage market, and the uncertainty regarding exposures that have not yet been disclosed, give rise

25 Source: Bloomberg

26 Source: Bloomberg

27 Source: Bloomberg

28 Source: Bloomberg

to money market stress during this period. As can be seen in chart 4 on p. 12, it is possible to distinguish three waves of loss of confidence in the interbank money market over the 13 months from August 2007 to September 2008, as expressed by surges in money market spreads. The first wave hits global money markets in August and September 2007, and the second in November and December 2007. After relative calm in money markets in early 2008, the third wave gathers momentum in late February, and breaks on Wall Street with the rescue of Bear Stearns by the Federal Reserve in mid-March. This third wave subsides during April, after which money markets remain relatively calm until September. Each of the three waves triggers extraordinary liquidity operations by central banks. In order to keep

Key events:

August 2007:

- The SNB and other central banks commence extraordinary temporary liquidity provision to the markets on 9 and 10 August.

September 2007:

- Northern Rock is faced with a bank run following rumours that it has received emergency liquidity assistance from the Bank of England. The run ceases a few days later when the government guarantees all Northern Rock deposits.

October 2007:

- UBS issues a profit warning, and later announces a Q3 loss of CHF 830 million and write-downs related to US sub-prime exposure in the order of CHF 4.2 billion.
- Standard & Poor's (S&P), a rating agency, downgrades UBS.

November 2007:

- Major US banks report losses due to sub-prime exposure in the first half of November; some of them also announce measures to raise new capital.
- Moody's downgrades UBS.
- Credit Suisse announces Q3 profits of about CHF 1.3 billion, despite write-downs of about CHF 2.2 billion.

December 2007:

- UBS announces further write-offs of USD 10 billion related to US sub-prime exposure, and measures to raise CHF 13 billion of fresh capital through a mandatory convertible notes issue (accepted by UBS shareholders in February 2008).
- Fitch, a rating agency, downgrades UBS.
- Coordinated liquidity operations by major central banks are announced. The SNB provides temporary USD liquidity to repo counterparties.
- Bear Stearns announces a loss for Q4, its first ever quarterly loss.

January 2008:

- The SNB renews its USD liquidity operations with repo counterparties.
- Société Générale, a French financial services company, discloses an unauthorised trading loss of about USD 4.9 billion.
- Major US banks announce losses and write-downs for 2007, and several also announce related measures to raise capital.
- At the end of the month, UBS warns of new write-offs, implying a Q4 net loss of about CHF 12.5 billion and a net loss for 2007 in the order of CHF 4.4 billion.

money markets functioning, some central banks provide additional liquidity to the banking sector over longer time horizons and against a broader set of collateral than usual. During the money market stress surrounding the near-collapse of Bear Stearns in March 2008, the Federal Reserve Bank of New York decides to provide liquidity (indirectly) to securities dealers. Moreover, as part of concerted actions between central banks, the SNB – for the first time in its history – engages in currency swaps with the Federal Reserve to provide US dollar liquidity to market participants in December 2007. The central bank currency swaps and liquidity operations are repeated regularly throughout this period.

February 2008:

- UBS confirms a 2007 net loss of about CHF 4.4 billion.
- Credit Suisse announces an annual profit of CHF 8.5 billion for 2007, and shortly thereafter discloses preliminary findings of additional US real estate-related write-offs of USD 2.9 billion.

March 2008:

- A wholesale run on Bear Stearns occurs and its stock price plunges. Bear Stearns faces difficulties in funding its operations, even against high-grade collateral on the secured funding market. It is rescued by the Fed and JP Morgan Chase, a US banking group, the following day.
- The Fed announces exceptional temporary measures whereby primary brokers are given access to its lending facilities.
- The SNB and other G10 central banks announce coordinated liquidity operations. The SNB renews its USD liquidity operations with repo counterparties.
- Credit Suisse announces adjustments in connection with US sub-prime-related losses amounting to about CHF 1.18 billion in Q4 2007 and CHF 1.68 billion in Q1 2008. Annual net profit for 2007 is revised to CHF 7.76 billion and net profit in Q4 to CHF 0.54 billion.

April 2008:

- Major US banks announce losses and write-downs for Q1 2008, and several banks announce measures to raise additional capital.
- UBS announces about USD 19 billion of gross losses and write-downs on US real estate and related structured credit positions, and a net loss of about CHF 12 billion in Q1. UBS simultaneously announces an ordinary capital increase of about CHF 15 billion and the departure of its Chairman.
- S&P, Moody's and Fitch downgrade UBS.
- Credit Suisse announces a Q1 net loss of CHF 2.1 billion, and write-downs in the order of CHF 5.3 billion.
- The SNB renews its repo operations in USD, providing USD 6 billion in temporary liquidity to Swiss money markets.

May 2008:

- AIG and Citigroup announce measures to raise additional capital.
- The SNB increases the amount of its USD repo auctions.
- UBS sells USD 15 billion worth of US real estate-related assets to BlackRock, a US asset manager.
- UBS reports a Q1 net loss of CHF 11.5 billion, in line with its 1 April 2008 pre-announcement, and around USD 19 billion of losses on US real estate and certain structured credit positions.

June 2008:

- S&P downgrades major US banks (Merrill Lynch, Lehman Brothers, JP Morgan Chase).
- Lehman Brothers reports a USD 2.8 billion Q2 loss, the first loss in the company's 14-year history under public ownership. Measures to raise new capital are also announced.

July 2008:

- Freddy Mac and Fannie Mae, the big US government-sponsored mortgage lenders, announce substantial write-downs and are given access to credit lines with the Fed. Short-selling of certain shares, especially those of Fannie Mae and Freddy Mac, is banned, and a housing bill is passed, notably allowing for the US government to provide equity or debt to the two troubled institutions.
- Major US banks report weak results for Q2 2008 and further write-downs associated with real estate-related positions and leveraged loans.
- Moody's downgrades UBS.
- Credit Suisse reports Q2 net profits of CHF 1.2 billion and strong net new money inflows.

August 2008:

- Fannie Mae and Freddy Mac announce Q2 losses, a cut in dividends and increases in loss provisions. The US Securities and Exchange Commission's (SEC) ban on short-selling comes to an end.
- Moody's downgrades Fannie Mae and Freddy Mac.
- More large international banks announce weak or negative Q2 results and further write-downs associated with real estate-related positions.
- UBS reports a Q2 net loss of CHF 358 million, and associated realised and unrealised gross losses of USD 5.1 billion on mainly US residential real estate-related securities and other credit positions. UBS also reports substantial net new money outflows.

First half of September 2008:

- The US government effectively nationalises Fannie Mae and Freddy Mac, by placing them into 'conservatorship'.

Phase 3: 15 September 2008 to present

The money market panic of 2008 and its aftermath.

After some months of relative calm, the financial turmoil takes a dramatic turn for the worse on 15 September 2008, when Lehman Brothers, the US investment bank, goes into bankruptcy. In the immediate aftermath of the default, money market spreads surge to a level which dwarfs the three previous waves – a financial tsunami (see chart 4, p. 12). Stock prices plunge in September 2008 and then continue their previous decline into 2009.

The crisis takes on a new dimension in the real economy as well, as the financial turmoil increasingly spills over into economic activity. Industrialised economies, in particular, are slowing down, and generally enter into recession during the latter part of 2008. Commodity prices and world trade plunge, propagating the downturn to emerging markets and developing countries which were previously shielded from the financial turmoil. In March 2009, the International Monetary Fund forecasts that the world as a whole will enter recession in 2009 for the first time since World War II. While the Swiss real economy has remained strong in the previous phases of the financial turmoil, it now succumbs to the faltering growth in its main export markets. Switzerland enters recession in the second half of 2008, and deflationary pressures emerge. A number of current and leading Swiss and international indicators improve in the spring of 2009, however, suggesting that the contraction in economic activity is becoming less sharp.

Large numbers of financial institutions throughout the world experience severe stress in the months following the Lehman Brothers bankruptcy. This stress results partly from direct exposures to Lehman Brothers, but mainly from the extreme difficulty experienced in funding operations in the frozen markets. Government involvement with bank rescues also takes on a whole new dimension in the months following the Lehman Brothers bankruptcy, as numerous systemically important institutions such as Citigroup, Bank of America and American International Group in the US, as well as the Royal Bank of Scotland in the UK, are rescued by their national authorities, often through partial or full

nationalisation. In addition to the turbulent market conditions and high money market spreads, the persistent fall in US house prices continues to cause losses and write-downs in institutions with exposure to US real estate in this period. By the end of May 2009, financial institutions worldwide have disclosed almost USD 1,500 billion of losses related to the financial crisis.²⁹ In addition, the real economic downturn starts causing losses on consumer and business loans during this period.

The two big Swiss banks continue to be adversely affected by the crisis. UBS reports further substantial losses related to the US real estate market, leading to a net loss for 2008 of CHF 21.3 billion and a further net loss of CHF 2 billion in the first quarter of 2009. Up to the end of May 2009, UBS has disclosed a total of USD 53.1 billion³⁰ of gross losses and write-downs related to the US mortgage market. Moreover, UBS reports substantial net new money outflows in this period. The fragility of UBS, combined with the turbulent market environment, leads to a joint package of support measures for UBS by the Swiss government, the SNB and FINMA in the autumn of 2008. These measures provide for UBS to transfer a portfolio of illiquid assets of up to USD 60 billion from its balance sheet to a fund controlled by the SNB, combined with a capital injection of CHF 6 billion decided by the Swiss government. The transfer of assets is completed in April 2009. The final amount of transferred assets totals CHF 38.7 billion. Credit Suisse also reports further losses related to exposures to the US real estate market, although to a smaller degree than UBS. By the end of May 2009, Credit Suisse has disclosed a total of USD 17.1 billion³¹ of such losses. Moreover, and largely due to the adverse trading conditions that prevail in September 2008, Credit Suisse suffers a net annual loss of CHF 8.2 billion in 2008, but returns to profitability in the first quarter of 2009 with CHF 2 billion net income. Swiss banks with a domestic business focus continue to be very little affected by the financial turmoil and real economic downturn, as the general quality of Swiss credit continues to be strong.

29 Source: Bloomberg

30 Source: Bloomberg

31 Source: Bloomberg

A period of intense policy activity follows the Lehman Brothers bankruptcy and associated financial and economic stress. Central banks extend liquidity on a massive scale, with longer maturity and against a wider range of collateral. Currency swaps between central banks are used to ensure the liquidity of foreign currency in international markets, and policy rates are cut in order to counter the emerging threat of deflationary pressures. Policy rates generally move towards the zero lower bound in the spring of 2009, resulting in a shift to alternative – or unconventional – monetary policy measures, such as balance sheet expansion through asset purchases. In Switzerland, the SNB addresses the money market crisis in the immediate aftermath of the Lehman Brothers failure with massive and prompt liquidity operations in US dollars, through currency swaps with the Federal Reserve. The SNB also supports the liquidity of Swiss francs in Eastern European markets through currency swaps against euros with the affected central banks. Looming deflationary pressures are addressed with a series of cuts in the target range for the Swiss franc Libor. The range reaches 0–0.75% in March 2009, at which point the SNB deploys a set of unconventional mea-

asures to address deflationary tendencies and increase liquidity in Swiss markets. These measures consist of offering repo operations at longer maturities, purchasing Swiss corporate bonds, and intervening in currency markets in order to prevent a further appreciation of the Swiss franc against the euro.

Fiscal policy also becomes very active in this period. Governments across the world announce sizeable fiscal stimulus programmes to support faltering domestic demand, bank recapitalisation schemes, state guarantees for bank debt and measures to strengthen deposit insurance schemes. The fiscal cost of these measures is high. Government budget deficits and public debt grow with exceptional speed by historical standards. In Switzerland, the government agrees on two fiscal stimulus packages, one in November 2008 and a second in February 2009. These fiscal measures remain relatively modest by international standards.

Moreover, as part of the package of measures to strengthen the financial system announced in autumn 2008, capital requirements for big banks are tightened, effective as of 2013, and the Swiss deposit guarantee scheme is expanded with immediate effect (cf. box 1, p. 9).

Key events:

Second half of September 2008:

- Lehman Brothers files for Chapter 11 bankruptcy.
- Bank of America, a US bank, agrees to take over Merrill Lynch.
- American International Group (AIG), a large international US-based insurance company, receives a capital injection from the government.
- HBOS, a financial services group in the UK, is taken over by Lloyds TSB, a UK banking group, after a run on HBOS's shares.
- Goldman Sachs and Morgan Stanley, the only two remaining US investment banks, convert to commercial bank holding companies.
- Multiple financial institutions worldwide fail, or are rescued by the authorities in partial or full nationalisations.
- Government authorities around the world, including in Switzerland, place bans on short-selling of stocks.
- Major central banks cooperate to increase dollar liquidity in international money markets. The SNB announces new overnight USD repo auctions to take place daily for a maximum of USD 10 billion.
- UBS announces that its direct and counterparty exposures to Lehman Brothers, net of hedges, are substantially closed out.

October 2008:

- Partial or full nationalisations of financial institutions continue worldwide.
- Governments across the world announce financial measures to prop up national banking systems.
- Coordinated liquidity operations in USD by major central banks, including the SNB, are further expanded. Moreover, the SNB and other major central banks announce joint interest rate cuts.
- Run on Icelandic bank shares and currency. The Icelandic government introduces sweeping new measures to deal with the ailing banking sector and nationalises its largest banks.
- Iceland, Hungary and Ukraine receive official monetary assistance from different international donors, notably the IMF, the EU and the World Bank.

- The Swiss government, the SNB and the Swiss Federal Banking Commission announce a package of measures to stabilise the Swiss financial system, including the possibility for UBS to transfer a portfolio of illiquid assets to a fund entity managed by the SNB (the SNB StabFund), a CHF 6 billion recapitalisation of UBS decided by the government, a tightening of capital requirements for the big banks, and a strengthening of the deposit guarantee scheme.

- Fitch downgrades UBS.

- Credit Suisse announces a CHF 1.3 billion net loss in Q3, mainly attributed to exceptionally adverse trading conditions in September.

- The SNB issues SNB Bills – a new monetary policy instrument – for the first time.

November 2008:

- Further interest rate cuts and fiscal stimulus measures are announced around the world, and more financial institutions are rescued by governments.

- The US Federal Reserve Board announces the beginning of purchases of asset-backed securities – notably mortgage-backed bonds.

- The G20 meeting produces support for world trade and quick regulatory reform.

- The package of measures to stabilise the Swiss financial system is approved by parliament and implemented.

- The SNB makes two additional cuts in the target range for the three-month Libor during the month.

- UBS announces Q3 results of a CHF 296 million profit, with realised and unrealised gross losses of USD 4.4 billion on exposures related mainly to US real estate. UBS, moreover, adopts a new compensation model for top management.

- The first Swiss federal fiscal stimulus package is introduced.

December 2008:

- The National Bureau of Economic Research declares that the US economy entered into recession in 2008.

- Further interest rate cuts and fiscal stimulus measures are announced around the world, and more financial institutions are rescued by governments.

- S&P downgrades a number of international banks on a worsening economic outlook
- A complaint is filed against Bernard Madoff for an alleged USD 50 billion Ponzi scheme.
- The SNB projects that Switzerland will be in recession in 2009, and lowers the target range for the three-month Libor.
- UBS transfers the first tranche of illiquid assets amounting to USD 16.4 billion to the SNB StabFund.
- The SNB acts as a mediator in a transaction which allows UBS and Credit Suisse to obtain funding from smaller Swiss banks against Swiss Pfandbriefe (covered bonds).
- S&P downgrades UBS and Credit Suisse.

January 2009:

- The IMF projects world growth to fall to 0.5% in 2009, its lowest rate since World War II.
- Policy measures to counter the crisis continue to be announced around the world.
- Bank of America and the Royal Bank of Scotland are bailed out by their national governments.
- The UK government instructs the Bank of England to buy up to GBP 50 billion of assets directly from firms – paving the way for quantitative easing.
- The Fed announces the extension of existing liquidity programmes and swap lines between the Fed and other central banks.
- The new administration, led by Barack Obama, is inaugurated in the US.
- Major US banks announce generally weak or negative quarterly results for Q4 2008, and further write-downs associated with real estate-related exposures, and – increasingly – more general credit fallouts and loan loss provisions.
- The SNB announces that it is cooperating with the European Central Bank, the National Bank of Poland and Magyar Nemzeti Bank to provide CHF liquidity to European markets.
- Fitch downgrades UBS and Credit Suisse.

February 2009:

- The US Treasury presents its Financial Stability Plan, and US financial authorities announce that they will conduct stress tests of large US banks.
- Central banks further extend their cooperation to provide USD liquidity in international markets.
- Major European banks announce mixed Q4 and annual results for 2008, and increasingly cite provisions for credit losses due to a deteriorating credit environment.
- Citigroup is bailed out by the US government.
- The second Swiss federal fiscal stimulus package is introduced on the back of a worsening economic outlook.
- The SNB continues USD liquidity operations, and announces that it will issue SNB Bills in USD.
- The ordinance on mortgage bonds (Pfandbriefverordnung) is revised, allowing the two big banks to raise further funding against Swiss Pfandbriefe.
- The SNB and UBS announce that the originally planned asset transfer from UBS to the SNB StabFund will be reduced from CHF 60 billion to CHF 39.1 billion.
- UBS warns of a CHF 19.7 billion annual 2008 loss and a Q4 loss of CHF 8.1 billion. UBS says it will cut 2,000 more jobs. It replaces its CEO.
- Credit Suisse reports a full-year 2008 net loss of CHF 8.2 billion, and a CHF 6 billion loss in Q4 2008.

- Swiss Re announces a net loss of CHF 1 billion, driven by mark-to-market losses on financial instruments including credit default swaps of CHF 5.9 billion for 2008. Swiss Re simultaneously announces measures to raise fresh capital. It is downgraded by Moody's and S&P.

March 2009:

- The IMF projects world economic output to contract by 0.5–1% in 2009 – the first such fall in 60 years.
- The World Trade Organization projects that the collapse in global demand will drive exports down by roughly 9% in volume terms in 2009, the biggest such contraction since World War II.
- AIG discloses a USD 61.7 billion loss for Q4, and nearly USD 100 billion for the year 2008. It receives further support from the US government.
- The Fed and the Bank of England turn to unconventional monetary policy measures in the form of direct purchases of government, agency and corporate debt. The Bank of Japan increases its purchase of government bonds.
- Revised GDP data show that Switzerland was already technically in recession from the second half of 2008.³²
- The SNB lowers the target range for the three-month Libor and announces the beginning of unconventional measures to counter deflationary tendencies, including currency intervention to keep a lid on further appreciation of the Swiss franc, in addition to purchases of corporate bonds and longer-maturity repo operations.
- UBS publishes its 2008 annual report, recording an annual loss of CHF 20.9 billion, the nomination of a new Chairman and the creation of authorised capital.
- In the second such transaction, UBS and Credit Suisse obtain funding from smaller Swiss banks against Swiss Pfandbriefe.

April 2009:

- S&P downgrades the junior debt of many large banks on a further worsening of the economic outlook.
- Major international banks announce Q1 earnings, with several returning to modest profitability. The real economic slowdown and provisions for credit losses are increasingly cited as negative factors in net earnings, however.
- The SNB StabFund concludes the transfer of UBS assets. After a valuation adjustment of USD 700 million, the value of total assets transferred amounts to USD 38.7 billion.
- UBS warns of a loss of almost CHF 2 billion in Q1 2009.
- Credit Suisse announces Q1 profits of CHF 2 billion.
- In the third such transaction, UBS and Credit Suisse obtain funding from smaller Swiss banks against Swiss Pfandbriefe.

May 2009:

- The US Federal Reserve Board announces the results of stress tests on major US banks. Ten banks are required to raise USD 74.6 billion in capital by November.
- The ECB announces its decision to undertake asset purchases.
- UBS revises its net loss for 2008 to CHF 21.3 billion, confirms a Q1 loss of CHF 2.0 billion and a quarter-end BIS Tier 1 ratio of 10.5%, and announces continued – although weaker – net new money outflows.

32 According to GDP data, as released by SECO.

2 Profitability

The deterioration of the international financial markets and worsening economic conditions have heavily affected the overall profitability of the Swiss banking system. In terms of profitability, 2008 was the worst year in recorded history. Trading income for the big banks was particularly hard hit, translating into considerable net losses. Other bank categories were affected only moderately, with profits for 2008 falling marginally compared with 2007, but remaining positive. The outlook for the short and medium term remains gloomy. Even if, as expected, the world and the Swiss economy were to gradually recover as of 2010, profitability for all bank categories is likely to remain relatively low by historical standards over the next few years. In the event of a deep and long-lasting recession, significant losses for the banking sector as a whole are to be expected.

Big banks with record losses, other bank categories remain profitable

Overall, the Swiss banking sector recorded an aggregate net loss of CHF 21 billion for 2008, down from a profit of CHF 15 billion in 2007. The decline was driven by the big banks, which have been hardest hit by the international financial conditions. Together, net losses incurred by the big banks in 2008 totalled CHF 29 billion. This is the largest loss on record (cf. chart 12). To put the loss of 2008 into perspective: the big banks' aggregate profit in the previous record year, 2006, amounted to CHF 20 billion, while, in the pre-crisis years (2002–2006), the

big banks paid out nearly CHF 40 billion in dividends and share buyback programmes. By way of further comparison: loan losses incurred by Swiss banks between 1991 and 1996, as a result of the real estate crisis affecting Switzerland at that time, were around CHF 40 billion. In the first quarter of 2009, UBS reported a net loss of CHF 2 billion while Credit Suisse reported a CHF 2 billion net profit.

Banks with a domestic business focus, such as cantonal, regional and Raiffeisen banks, have been only moderately affected by the deteriorating economic and financial conditions. Excluding the big banks, the Swiss banking sector recorded a net profit of CHF 8 billion, a drop of 32% on profits recorded in 2007.

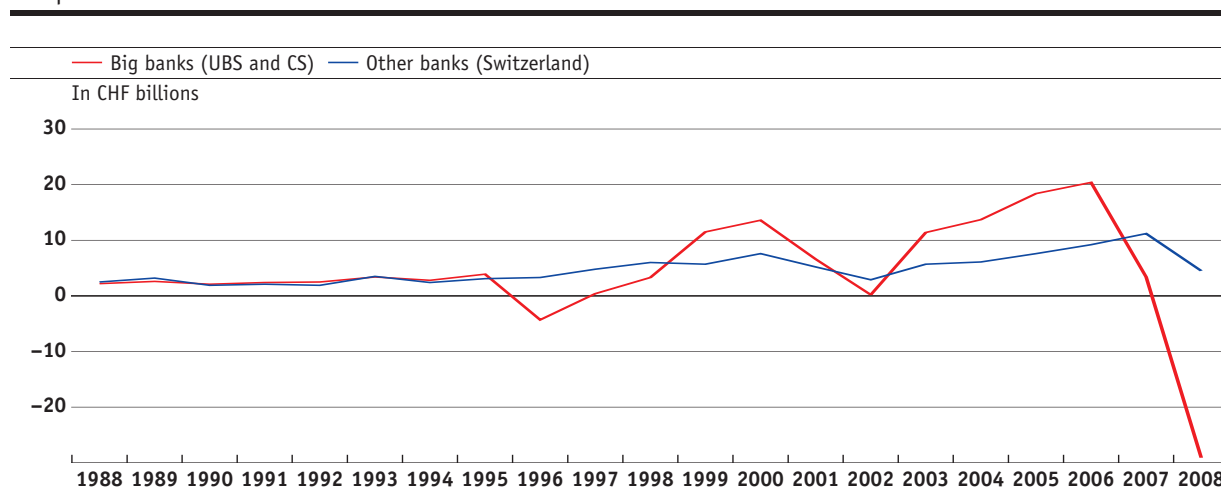
Aggregate return on assets (RoA) decreased substantially in 2008, driven almost entirely by big bank results. Big bank profitability fell from 0.1% in 2007 to -1% in 2008. For other bank categories, RoA decreased slightly, but on the whole remained relatively stable (cf. chart 13, p. 25). For the cantonal, regional and Raiffeisen banks, RoA remained significantly above the 20-year historical average, highlighting the limited impact that the current turmoil has had on the profitability of these bank categories so far.

Big bank losses driven by a substantial fall in trading income

Costs and income both dropped significantly in the Swiss banking system as a whole in 2008. The speed at which costs decreased (-16%), however, was too slow to compensate for the fall in income (-58%). Total income in the banking sector

Net profits

Chart 12



Sources: FINMA, SNB

decreased to CHF 46 billion, from CHF 107 billion in 2007. Only the Raiffeisen banks reported a slight increase in total income from 2007 (+1%).

For the big banks, income amounted to only CHF 11 billion, compared to CHF 69 billion in 2007. This decline was driven predominantly by substantial trading losses (cf. chart 14), amounting to CHF 37 billion. Deteriorating market conditions, marked by a significant increase in volatility and an extreme scarcity of liquidity, negatively affected many trades and positions. For UBS, trading losses were driven by substantial legacy risk positions, particularly related to real estate and other credit positions, that resulted in sizeable write-downs and asset sales. Before October 2008, these losses, amounting to CHF 32 billion, were booked directly as

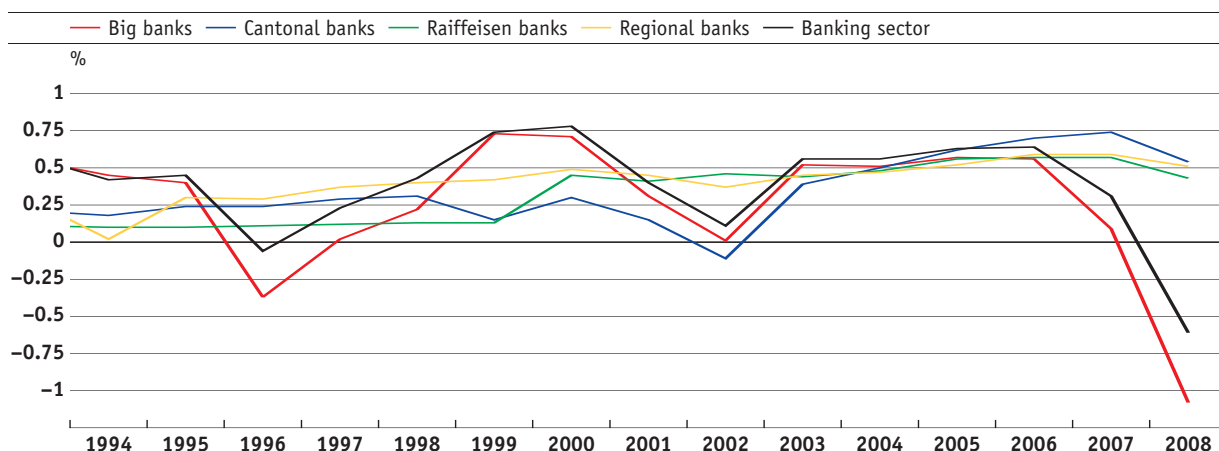
losses to trading income. In the fourth quarter of last year, financial assets with a fair value of CHF 26 billion were reclassified from the trading portfolio to loans and receivables, meaning that any further losses on these positions were recorded as write-downs and provisions.

For the big banks, income from fees and commissions also decreased, particularly in the fourth quarter of 2008. This decrease reflects a decline in average assets under management and reduced transaction-based revenues associated with low client activity in underwriting, mergers and acquisitions and corporate finance, brokerage, fiduciary and insurance-related activities (cf. table 1, p. 26).

Interest income, however, has increased 7% since 2007, mainly due to higher deposit volumes.

Return on assets

Chart 13



Income components

Chart 14

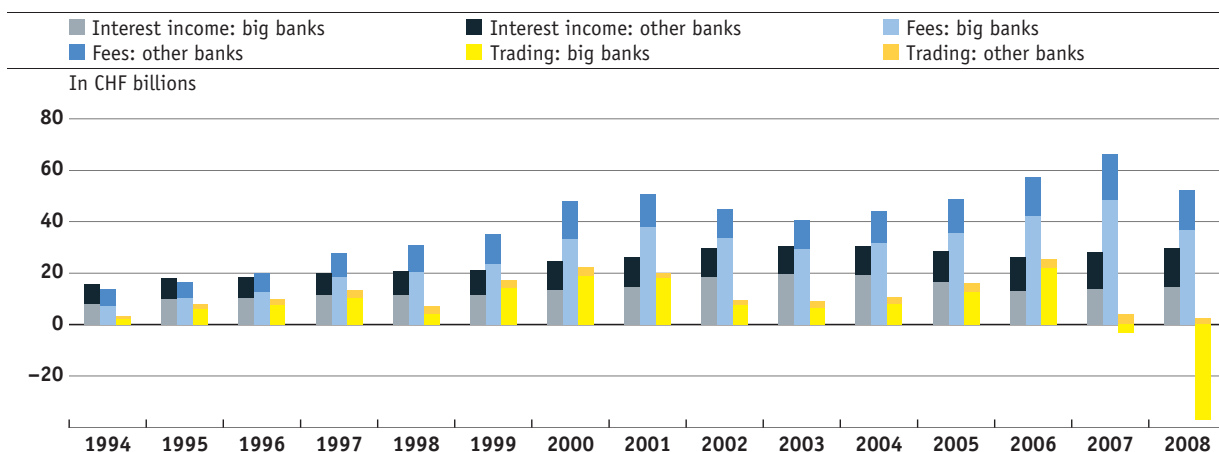


Chart 13: Sources: FINMA, SNB

Chart 14: Sources: FINMA, SNB

For UBS, the expansion of lombard lending activities further accentuated this revenue stream, as did the reclassification of assets from the trading portfolio to the banking book. Furthermore, some investment banking businesses, such as commission-generating equity and foreign exchange trading, did remain profitable. Underwriting and advisory businesses generated lower revenues compared to 2007, but remained profitable due to volatile markets and strong client flows.

For all bank categories, interest income as well as income from fees and commissions remain high by historical standards, both in nominal terms and as a percentage of the balance sheet total. The stability in these revenue streams highlights the benefits of diversification in the Swiss banking system so far (cf. chart 14, p. 25).

The significant fall in income was accompanied by a reduction in costs. Both the big banks and the trading banks reduced their costs considerably (by 23% and 19% respectively) compared to other bank categories, for which costs remained relatively stable. Big banks have reduced personnel costs (-28%) by significantly more than other costs (-10%). Overall, however, the cost/income ratio for

the Swiss banking sector as a whole has deteriorated substantially since 2007, from 71% to 140%. The big banks experienced the sharpest increase in their ratio, from a previous record high of 80% in 2007 to 381%. This illustrates the fact that cost structures in the banking sector are relatively slow to adjust. Ratios for other bank categories remain relatively stable, at around 60% on average.

Finally, new write-downs and provisions increased substantially in 2008 as a result of the financial turmoil. Allowances, provisions and losses for the big banks amounted to CHF 8 billion in 2008, of which CHF 3.6 billion accounted for credit losses. This includes an impairment charge (around CHF 1 billion) recognised as a credit loss expense incurred by UBS as a result of the above-mentioned reclassification of financial assets. The banking sector excluding big banks has increased provisions by CHF 0.9 billion. Of these bank categories, only the private banks have reduced their provisions since 2007 (by 11%). Excluding big banks, allowances, provisions and losses for the Swiss banking sector remain low in historical terms, at around CHF 2.4 billion.

Table 1: Swiss banking sector: Results for 2008 (in CHF billions)

	Big banks		Commercial banks with a domestic focus		Other banks	
	2008	Annual growth	2008	Annual growth	2008	Annual growth
Total income	11.1	-84%	11.8	-6%	22.7	-13%
of which:						
Interest income	14.7	7%	8.6	2%	6.6	6%
Income from commission and services	36.5	-25%	2.3	-12%	13.3	-13%
Trading income	-37.1	-1,033%	0.5	-44%	1.3	-38%
Other income	-3.0	-129%	0.4	-37%	0.9	-34%
Total expenses	42.3	-23%	6.4	3%	14.9	0%
of which:						
Personnel expenses	30.4	-28%	3.9	0%	9.8	-1%
Other expenses	11.9	-10%	2.5	4%	5.1	2%
Gross profit	-31.2	-320%	5.3	-15%	7.9	-30%
Depreciation and write-offs on investments in associated companies and fixed assets	3.1	28%	0.8	6%	1.2	25%
Allowances, provisions and losses	8.0	874%	0.6	148%	1.8	45%
<i>of which provisions for credit losses</i>	3.6	1,151%	0.2	162%	0.3	-52%
Profit before extraordinary items and taxes	-42.3	-488%	3.9	-26%	4.9	-44%
other income and expenses (including income tax and minority interest)	13.2	23%	-0.9	-36%	-0.2	-19%
Net profit	-29.1	-962%	3.1	-20%	4.6	-39%

Sources: FINMA, SNB

Outlook

The outlook for the profitability of the Swiss banking system remains gloomy. The profitability of both the big banks and the banks with a domestic business focus is expected to be significantly affected by the anticipated deepening of the worldwide recession and any associated decline in credit quality in Switzerland and abroad.

Furthermore, and of particular relevance for the two big banks, income from fees and commissions should remain relatively low, due to both cyclical and structural factors. Reputational factors are likely to reinforce the marketwide impact of slowing economic activity and low equity prices on revenue from wealth management and investment banking businesses. This does not imply that the big banks will not return to profitability. Credit Suisse, for instance, was profitable in the first quarter of 2009. However, coupled with the relative rigidity of the banks' cost structure, these developments should lead to low short and medium-term levels of profitability in the Swiss banking sector. This should apply even if economic activity gradually recovers as expected as of 2010, and no further major asset price corrections occur. Banks with a domestic business focus are also expected to be affected, due to the anticipated decline in credit quality in Switzerland. Furthermore, should the 'adverse scenario' of a deep and long-lasting recession materialise, large losses for the Swiss banking sector as a whole would become likely in the medium term.

Box 3. Structure of the Swiss banking sector

The Swiss economy is characterised by a comparatively large banking sector by international standards, and by the dominance of two banks, Credit Suisse and UBS. At the end of 2008, the banking sector's total assets amounted to CHF 4,361 billion or just over eight times the size of Swiss annual GDP. This is a considerable drop compared to 2007, when the banking sector was more than nine times larger than GDP. Nevertheless, it is still the biggest ratio among the G10 countries, followed by Belgium and the Netherlands, where total bank assets are five to six times the size of annual GDP. Measured in absolute terms, the US has the largest banking sector. However, total assets of all banks in the US only equate to one year's GDP (cf. table below).

	Size of the banking sector (ratio of total assets to annual GDP)	Concentration (assets of the largest three banks as a percentage of total assets)
Belgium	6.3	89
Canada	1.8	58
France	3.3	75
Germany	3.4	41
Italy	1.6	75
Japan	1.9	52
Netherlands	5.3	93
Sweden	3.3	82
Switzerland	8.2	76
United Kingdom	4.3	72
United States	0.9	46

Sources: Annual reports (2007 and 2008), IMF, SNB

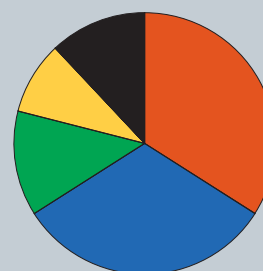
In spite of the recent decline, the Swiss banking sector remains large in historical terms. Up to the end of 2006, the ratio of total assets to annual GDP had been growing steadily and rapidly. This rapid growth almost exclusively reflected the development of foreign business at the two big banks. In 2008, the ratio fell, as had already been the case in 2007. The drop in the ratio was more pronounced

and longer than during the previous two periods of major turbulence on the international financial markets (i.e. 1998, when the Russian and LTCM crises occurred, and the 2001–2002 stock market crash and economic slowdown), thereby confirming the scale of the current crisis. By contrast, the ratio of domestic assets to GDP has remained comparatively stable over the past 15 years, at just over 200% (cf. chart below).

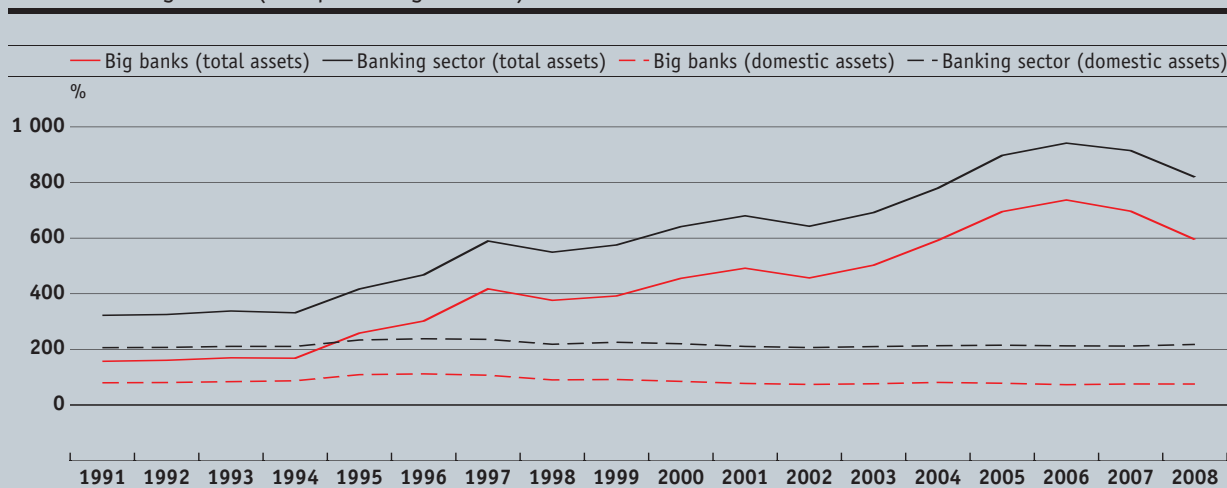
Market concentration in the Swiss banking sector is high, but not exceptional, compared to other countries. The market share (measured in terms of total assets) of the three largest banks (CR3) is a typical measure of market concentration. In Switzerland, it amounts to 76%. This is lower than in countries such as the Netherlands (93%), Belgium (89%) or Sweden (82%), but above the (unweighted) G10 average (68%) (cf. table). However, Switzerland is exceptional in that the bulk of CR3 (73 of the 76 percentage points) is accounted for by the two largest banks. The rest of the Swiss banking sector comprises 24 cantonal banks (9%), 367 independent bank members of the Raiffeisen group (3%) and 75 regional banks (2%). The remaining 225

Market share: Domestic lending

In percent	
Big banks 34	Cantonal banks 32
Raiffeisen banks 13	Regional banks 9
Other banks 12	



Size of banking sector (as a percentage of GDP)



Sources for charts: FINMA, SNB

banks have a 13% share of total assets. Though the two big banks dominate the Swiss market in terms of total assets, their relative importance in the domestic credit market is less significant. Their combined market share in the domestic credit market is approximately 34%, closely followed by cantonal banks (32%). The share for Raiffeisen banks is 12% and for regional banks 9% (cf. chart on p. 28). This structure has been relatively stable over the last 15 years. The deposit side was also quite stable until 2008, when a shift of 4 percentage points from the big banks to the cantonal banks was observed. These figures emphasise the importance of analysing all main bank categories – the big banks (Credit Suisse and UBS), cantonal banks, Raiffeisen banks and regional banks – when assessing financial stability in Switzerland. However, due to their size and international exposure, special attention is given to the two big banks in this report.

3 Risks

In 2008, the two Swiss big banks further reduced their exposures to the credit markets most affected by the crisis. There was also a sharp reduction in trading assets overall. Market risk decreased as a result, although it remains elevated due to continued high volatility on financial markets and the fact that trading assets are still sizeable. Risk in traditional lending business rose markedly for the big banks in 2008. For banks with a domestic focus, credit risk – and thus these banks’ total risk – also appears to have increased. However, a degree of uncertainty attaches to these assessments. This is particularly true for the big banks. Their complexity, plus the fact that the crisis now affects more than one clearly defined portfolio, makes it hard to assess these banks’ risk exposure.

The big banks

This discussion of the big banks’ risk exposure focuses on the following risk categories: credit, market, liquidity and business risk. However, it is not always easy to clearly delineate these categories. In particular, it is increasingly hard – especially in the case of the big banks – to differentiate between credit and market risks according to simple criteria such as product type, market liquidity, accounting method or holding period. For example, credit portfolios can be valued at both amortised

cost and at fair value.³³ Or positions in banks’ trading books can have exposure to credit risk as well as market risk.

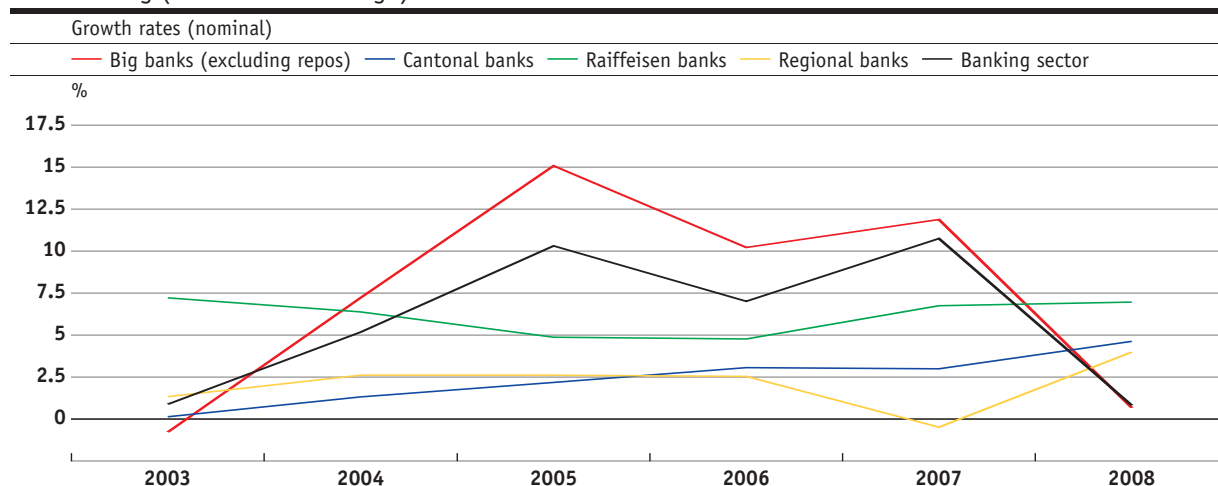
Markedly higher risk in traditional lending business

As well as traditional loans, big banks’ exposures to credit risk also include loans held for sale, traded loans, loan obligations, repos, and securities lending and borrowing (SLB) transactions.³⁴ In 2008 such exposures, most of which are valued at amortised cost, fell from almost CHF 2,000 billion to CHF 1,600 billion (–17%).³⁵ This decline is mainly due to a reduction in repos, SLB transactions, loans held for sale and traded loans. For instance, Credit Suisse substantially reduced its loans held for sale from CHF 48 billion to CHF 23 billion. By contrast, the volume of big banks’ traditional lending has remained virtually unchanged (+0.7%) (cf. chart 15). At the end of 2008, it amounted to CHF 650 billion, of which CHF 346 billion was accounted for by foreign borrowers and CHF 226 billion by domestic mortgages. The figure for traditional lending volume also contains around CHF 26 billion worth of UBS assets that were reclassified from the trading book to the banking book, including assets guaranteed by monoline insurers, leveraged finance exposures, real estate loans and auction rate securities.³⁶

Credit quality – particularly for foreign exposures – deteriorated markedly in 2008. This assessment is based on a number of indicators.

Total lending (domestic and foreign)

Chart 15



Sources: FINMA, SNB, annual reports

33 Fair value is understood to mean the price at which assets can be exchanged or liabilities settled between professional, independent and willing parties. Write-downs are performed on these positions if the market price (or the model-derived value) changes. For positions accounted for at amortised cost, in contrast, write-downs and provisions for credit risks take place if objective criteria indicate that it will not be possible to recover the entire amount owed as foreseen in the original contract.

34 In principle, credit risk exposures also include credit derivatives (especially CDSs). However, in this report, these exposures are discussed in the section on market risk.

35 Excludes traded loans. Source: Annual reports, 2008.

36 Source: UBS, *Annual Report 2008*.

First, various market indicators, such as credit spreads on corporate bonds and prices for credit default swaps (CDS), suggest a sharp deterioration in credit quality (cf. charts 9, p. 16 and 10, p. 17). Despite the recent decrease, credit spreads for US and EU companies are now far higher than the previous peak observed in 2002. In Switzerland, they are slightly above their 2002 level.

Second, a few indicators already point to a materialisation of credit risk. For instance, commercial banks in the US are reporting a marked increase in non-performing loans, as well as write-downs on credit risks in a number of loan categories (cf. chart 8, p. 15). In the fourth quarter of 2008, corporate bankruptcies in Switzerland rose substantially for the first time in four years, and continued to rise in the first quarter of 2009, albeit at a slightly lower rate.

Third, the value of many assets used as loan collateral has fallen markedly. For example, in 2008 there was a worldwide slump in share prices, and real estate prices in the US and some European countries dropped sharply (cf. charts 5, p. 13 and 7, p. 14).

Finally, a number of backward-looking indicators show a deterioration in credit quality in the big banks' portfolios. For instance, the share of non-performing loans in total lending volume has increased, although the level remains very low in historical terms (cf. chart 16). New loan loss provisions also registered a marked increase. At Credit Suisse, they rose from CHF 240 million in 2007 to CHF 813 million

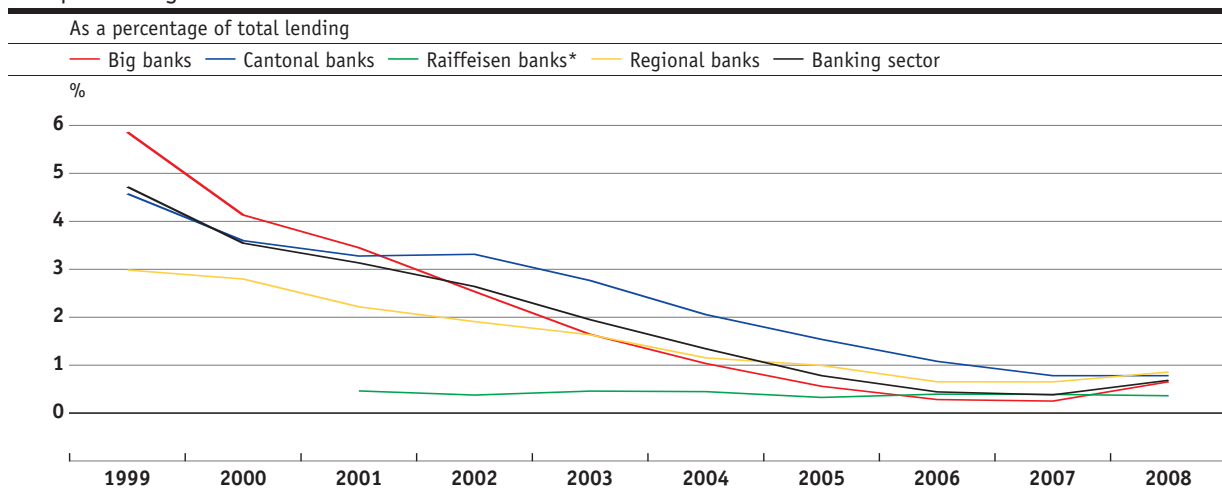
in 2008.³⁷ At UBS, they expanded from CHF 238 million to CHF 2,996 million.³⁸ Credit Suisse's provisions were primarily on loans by its investment bank in Asia, and on lombard loans. UBS set aside substantial provisions (CHF 1,329 million) on assets transferred from the trading to the banking book. Further provisions were made on repos, SLB transactions, real estate loans and asset-backed securities of the investment bank, as well as on lombard loan business. At both big banks, the investment bank accounted for the bulk of provisions.

These backward-looking indicators do not cover credit exposures designated at fair value. Such exposures are mainly included under 'loans' and 'loans held for sale'. At Credit Suisse, for instance, 14% of loans are recorded at fair value. The market indicators mentioned previously would seem to suggest that substantial write-downs had to be made on credit exposures designated at fair value.

The fact that the volume of traditional lending has remained virtually unchanged compared to one year previously, while credit quality has deteriorated sharply, suggests that risk in traditional lending business has risen substantially. This is borne out by internal bank indicators. According to Credit Suisse's internal risk indicator, position risk in corporate and consumer loans in the private banking area rose by 9% in 2008. In other credit risk categories, the picture is less clear. The sometimes substantial reductions in exposures stand in contrast to a sharp deterioration in credit quality.

Non-performing loans

Chart 16



Sources: FINMA, SNB

* Statistics for the Raiffeisen banks are only available from 2001.

³⁷ Source: Credit Suisse, *Annual Report 2008*.

³⁸ Source: UBS, *Annual Report 2008*.

Market risk lower, but still at high levels

In 2008, the big banks were able to scale back their exposure to market risk. There was a substantial reduction in their exposure to those credit markets that were particularly hard hit by the crisis. Credit Suisse, for instance, drastically cut its exposure to the leveraged finance market from CHF 35.1 billion to CHF 0.9 billion.³⁹ UBS was also able to considerably reduce its exposure, especially to the US real estate market. Exposures related to the US real estate market declined from around USD 69 billion at the end of 2007 to about USD 3 billion at the end of 2008.⁴⁰ The main reason for this – apart from sales and write-downs – was the transaction with the Swiss National Bank (SNB) (cf. box 2, p. 19).

The big banks' total trading portfolios also contracted sharply in 2008, from around CHF 1,200 million to CHF 550 million (–55%), and are now well below their end-2005 levels (CHF 1,030 million). This decrease cannot be solely attributed to the reduction in exposure to the credit markets most affected by the crisis, or to market price declines. The big banks also actively reduced other portfolio holdings, for example shares. The banks' internal measures of risk indicate that the reduction of trading portfolios has been accompanied by a decline in market risk. According to Credit Suisse's internal risk indicator – economic capital – its position risk fell by 22% in 2008.⁴¹ This is above all due to a reduction in exposures related to commercial real estate and leveraged finance.⁴² However, the following points must be made in qualification of these positive developments:

First, in the fourth quarter of 2008 a high proportion of the losses was incurred on positions not previously identified as risk positions. Pinpointing problem assets within banks' trading portfolios is thus no longer as easy as it was at the onset of the crisis.

Second, portfolio holdings remain high even after such massive reductions, and could still incur heavy losses owing to the extreme market conditions. Thus, for example, the high volatility in the fourth quarter of 2008 resulted in the failure of hedges on various trading positions, with correspondingly heavy losses.⁴³

Third, part of the portfolio reduction by UBS is in fact a reclassification of positions from the trading book to the banking book. UBS still has some USD 24 billion worth of exposures to monoline insurers, leveraged finance and auction rate securities – the credit markets most affected by the crisis.⁴⁴ The bank has now transferred a large pro-

portion of these exposures to the banking book. Although no longer exposed to market risk, these positions remain on the bank's balance sheet as credit risk positions.⁴⁵

Finally, the trading portfolio does not include the replacement values of derivatives products such as interest rate and credit derivatives. The size of these positions, measured on the basis of replacement values,⁴⁶ has grown extremely rapidly over the last two years. This applies in particular to credit derivatives. The positive replacement value of these contracts has increased ninefold over the same period, from CHF 45 billion in December 2006 to almost CHF 400 billion in December 2008.⁴⁷ These positions represent another source of risk related to banks' trading activities. Various factors suggest that, in spite of their size, these positions' contribution to the big banks' overall risk exposure should be relatively small. First, the associated counterparty risk is generally fully collateralised. Second, the big banks are both buyers and sellers of derivatives products for similar amounts. As a consequence, movements in positive and negative replacement values – the value at which these positions are reported in the banks' balance sheet – broadly offset each other.

Managing the risk related to these positions, however, is very difficult. In particular, banks must be able to assess their counterparty risk almost on a real-time basis. Furthermore, the valuation of these derivatives contracts is mostly based on models. Hence, the uncertainty attached to their valuation is large, especially in periods of high market volatility, like the one we are now experiencing. Considering these aspects on the one hand, and the size and extremely rapid growth of the positions involved on the other hand, these positions could still constitute a large and volatile source of market, counterparty or funding risk for both big banks.

Liquidity risk

For the big banks, the current crisis has led to a materialisation of the liquidity risks to which they were exposed.

First, the banks have been confronted with a reduced supply of longer-term funding on the capital markets for almost two years. This has contributed to weakening the banks' funding structure. Thanks to the high duration of both banks' outstanding long-term capital market debt, however, the overall impact of these developments on their funding structure has been relatively small so far.

39 Source: Credit Suisse, *Annual Report 2008*. The figures cited refer to total exposure – i.e. including the portion of exposures that Credit Suisse treats as credit risk.

40 Source: UBS, *Annual Report 2008*. These figures also contain exposures that UBS treats as credit risk. The US Reference-Linked Note Program, which also contains exposures to the US real estate market, is not included in the figure for exposures at end-2008.

41 The position risk is the level of unexpected loss in economic value on the portfolio of positions over a one-year horizon which is exceeded with a given small probability (1%).

42 Source: Credit Suisse, *Annual Report 2008*.

43 More specifically, basis risk materialised. Basis risk is the risk that the hedge instrument and the position being hedged do not move in parallel.

44 Exposure at 31 March 2009. For end-2008, the exposure amounted to USD 22 billion. The increase is attributable to the repurchase of auction rate securities from customers, to which UBS has committed itself. The auction rate security exposure could rise by a further USD 10 billion at most. Data refer to net exposures. Source: UBS, *Annual Report 2008* and *Quarterly Report Q1 2009*.

45 At the end of 2008, UBS announced that it would not transfer its student auction rate securities and its monoline-backed securities to the SNB. As a result, the value of the transferred assets fell from the

Second, funding conditions on the short and medium-term unsecured money market and inter-bank market remain very volatile, even though the extraordinarily expansionary monetary conditions have led to a decrease in the average funding cost on these markets in most countries compared to pre-crisis levels. Repeated periods of acute stress (cf. chart 4, p. 12) have shown that the mere possibility of accessing these markets for funding is uncertain. Given the amounts of unsecured money market and interbank borrowing that are maturing on a daily basis, this uncertainty is a material component of banks' liquidity risk.

Third, banks' capacity to generate liquidity through asset reduction at acceptable cost remains low due to the reduced market liquidity for most non-government securities. Finally, as a result of the concerns regarding the banks' health, the stability of wholesale and even retail clients' deposits as a source of funding has decreased compared to normal times.

Counteracting measures taken both by the banks and by the public sector have limited the liquidity risk to some extent. Measures taken by the banks include building up liquidity reserves at an early stage of the crisis and reducing the size of their trading book. Measures taken by the public sector include the efforts by the SNB to prevent a collapse of the money market and to facilitate the big banks' access to long-term secured funding through the issuance of covered bonds collateralised with first-class Swiss mortgage loans (Pfandbrief bonds). Thereby, the SNB helped redistribute funding between banks and alleviate the big banks' refinancing difficulties. Nonetheless, in spite of these measures, liquidity risk remains significant.

Business risk

The profitability of the Swiss big banks, and thus their ability to absorb losses through current earnings, is likely to remain low in the short to medium term – at least compared to previous years. The reasons for this are partly cyclical. In a difficult economic climate, the volume of fees and commissions falls as business activity declines. Moreover, the profit margin on interest rate business is reduced as a result of higher risk premia on the liabilities side, and the lower market liquidity limits the opportunities for trading and arbitrage.

There are also structural causes. It is likely, for example, that the assets under management at the big banks are declining or growing much more slow-

ly than in the past, owing to the weakening of banking secrecy and to reputational factors. In addition, the volume of high-margin business with structured products is likely to remain low even after the financial crisis has ended. Finally, UBS, at least, faces high restructuring costs.

Outlook

In 2008, the two Swiss big banks further reduced their exposures to the markets most affected by the crisis. Nevertheless, in the areas of mono-line insurers, leveraged finance and auction rate securities, UBS remains exposed to these markets.⁴⁸ In addition, the extreme market conditions and the unfavourable economic climate have led to losses or write-downs on positions that do not belong to this relatively clearly defined problem portfolio.

In the baseline scenario of a deep but relatively short-lived recession, it is assumed that the situation on financial markets will remain stable. The main risk in such a scenario is credit risk. Losses could be expected above all on loans booked at amortised cost. The foreign loans portfolio would probably be harder hit than the domestic portfolio.⁴⁹ On the one hand, in contrast to the US and some European countries, Switzerland has not witnessed any major structural imbalances in credit and real estate markets. On the other hand, the share of secured loans is much higher in the domestic than the foreign portfolio. Prices for loans designated at fair value should, at least in part, already reflect this scenario.⁵⁰ Similarly, following a return to calm on financial markets, lombard business should not suffer any further significant losses.

It is difficult to arrive at a quantitative assessment of potential losses for this kind of scenario. One rudimentary method would be to estimate the provisioning requirement for the credit portfolio valued at amortised cost, using empirical observations of both big banks from the last mild downturn in 2002–2003. Based on the average provisioning ratio⁵¹ for 2002–2003, the big banks would have to make additional provisions of around CHF 15 billion over the remaining lifespan of the crisis.⁵²

In an adverse scenario with a longer-lasting recession and a further deterioration on financial markets, the losses would be considerably higher and would affect large areas of the balance sheet. Loans designated at fair value, lombard loans and loans to Swiss borrowers would also be severely affected. Moreover, heavy losses on trading pos-

originally agreed figure of USD 60 billion to USD 38.7 billion.

46 Replacement values are the assessment of the value of these derivative contracts. In most cases they are based on models.

47 Replacement values after netting. Source: Annual reports.

48 The net exposure is around USD 24 billion. UBS has committed itself to buying back auction rate securities from customers at nominal value. The maximum additional repurchase value of these instruments of USD 10 billion is not included in the USD 24 billion. Source: UBS, *Quarterly Report Q1 2009*.

49 This is also implied by banks' provisions in the first quarter of 2009. At both big banks, the majority of provisions for credit risk were on holdings abroad.

50 Since there is no directly observable market price for loans, this also provides a certain room for manoeuvre in accounting for loans at fair value.

51 The provisioning ratio represents the share of credit risk provisions in total lending volume.

52 Of course, this simple calculation can only provide a rough indication of potential losses. It should be noted that, owing to the short time series, only a period of mild recession is available as a comparator. Moreover, the structure of the loan portfolio can change over time. Particularly noteworthy in this regard is the transfer by UBS of relatively risky assets from the trading book to the banking book.

itions would be likely, despite elaborate hedging strategies.

Simulations based on estimated sensitivities of loss provisions to the macroeconomic environment imply an additional provisioning requirement for the big banks' credit risks valued at amortised cost of around CHF 20 billion over the remaining lifespan of the crisis under this adverse scenario. Coupled with additional losses on trading positions, these numbers suggest that such an adverse scenario might lead to a depletion of a substantial share of the big banks' current capital reserves, i. e. of the capital held over and above the regulatory minimum. This might in turn impair market confidence in their soundness. Given the uncertainty surrounding such estimations, the materiality of the potential losses and the associated risk for the stability of the Swiss financial sector, it is imperative that the big banks keep working together with the authorities to assess – using conservative assumptions – the consequences of such a scenario.⁵³ Where necessary, banks should adjust their risk profile so as to enable them to bear the risks themselves, i. e. without financial support from the public sector.

Banks with a domestic business focus

Rise in credit risk

For banks with a domestic business focus – the cantonal banks, regional banks and Raiffeisen banks – credit risk increased in 2008. Following the changeover from Basel I to Basel II last year, it is not possible to use capital charges for credit risk as

an indicator of changes in overall credit risk at these banks.⁵⁴ However, five banks, including the Cantonal Bank of Zurich and the Raiffeisen banks, already switched to Basel II in 2007. Their capital charges for credit risks rose slightly in 2008.

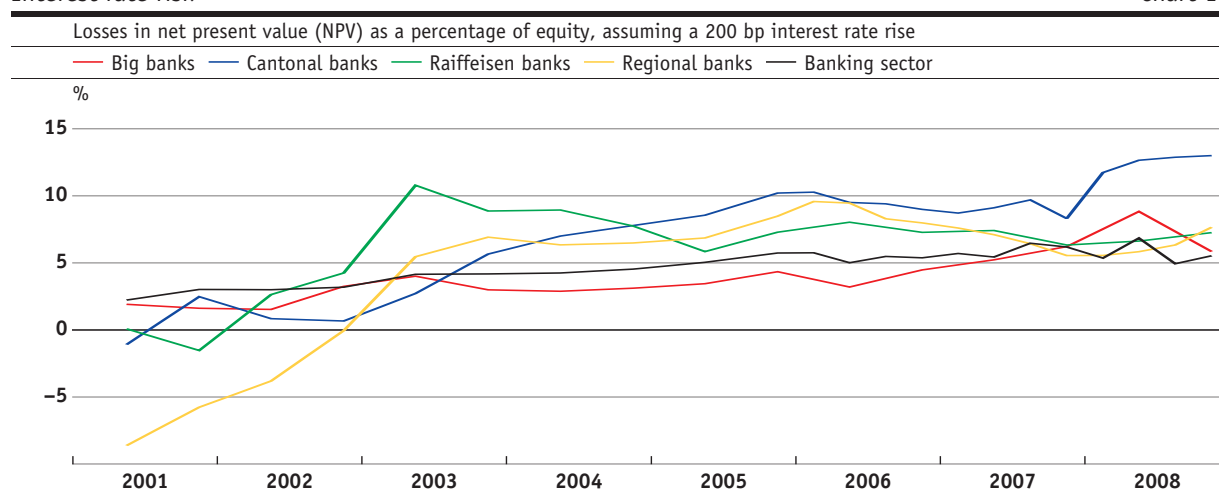
There are few reliable forward-looking indicators available to assess the credit quality at these banks. Credit spreads on Swiss corporate bonds, together with the higher bankruptcy rates for Swiss companies recorded for the fourth quarter of 2008 and the first quarter of 2009, suggest a deterioration in credit quality (cf. chart 9, p. 16). However, the information value of these indicators of credit quality is limited, as mortgages make up the main component of many domestically focused banks' portfolios. Moreover, corporate lending by these banks is often only on a secured basis – with real estate usually serving as collateral. In these banks' most important credit market – the Swiss real estate market – and in their most important customer segment – Swiss households – there are as yet no signs of any significant deterioration.

Likewise, backward-looking indicators are showing only few signs of a decline in credit quality. The share of non-performing loans in total lending has risen slightly for the regional banks (cf. chart 16, p. 31). In addition, new write-downs and provisions for default risks are higher than last year for the cantonal banks. Overall, however, the domestically focused banks are entering an economically difficult period in a relatively strong position.

First, various indicators suggest that, overall, banks have tended to pursue a cautious domestic

Interest rate risk

Chart 17



Sources: FINMA, SNB

⁵³ FINMA and the SNB are currently developing a stress testing framework together with the big banks. In the future, these stress tests will constitute an important instrument in the SNB's periodic assessment of these banks' resilience to severe but realistic shocks.

⁵⁴ The changeover from Basel I to Basel II may have had an impact on the capital requirements for these banks.

lending policy. Growth rates in lending over the last ten years have been moderate; claims of all banks (including the big banks) vis-à-vis domestic customers grew by an average of 1% between 1998 and 2008, while domestic mortgage claims expanded by 3%. In the same period, the share of relatively low-risk first-class mortgages (mortgages with a loan-to-value ratio of up to 66%) in total mortgage lending remained virtually unchanged. Second, real estate price growth was also moderate, with prices rising by 2% on average over the last ten years. There are thus no signs of major structural imbalances in Swiss credit and real estate markets.

Market risk less important

For the cantonal banks, and most particularly for the regional and Raiffeisen banks, market risk is of secondary importance. For instance, the share of trading assets in total assets amounts to no more than 2% in the case of the cantonal banks (2007: 4%), as compared to 13% for the big banks (2007: 30%).

An indicator of their market risk is changes in required capital for market risk. According to this measure, market risk for the cantonal and Raiffeisen banks dropped by 13% each compared to the previous year. For regional banks, in contrast, it rose by 15%.⁵⁵

Interest rate risk high at cantonal banks

Interest rate risk in 2008 increased slightly for the regional and Raiffeisen banks, and rose strongly – from an already high level – for cantonal banks.⁵⁶ For the latter category, figures are the highest ever recorded for a bank category in our historical time series (cf. chart 17, p. 34). If the general level of interest rates were to rise by 200 basis points, the discounted present value of the cantonal banks would decline by 13% of eligible capital (2006: 8%).

Outlook

Under the baseline scenario of a deep but relatively short-lived recession, the profitability of these banks overall would decline substantially. However, given the fact that, in contrast to countries like the US or the UK, there are no signs of major structural imbalances in Switzerland, it is likely that a deterioration in credit quality, and thus the level of loan losses, would be less pronounced than in these countries.

If the recession were to last longer than expected, loan losses could potentially be much higher. Under such an adverse scenario, the possibility cannot be ruled out that falling real estate prices in Switzerland would lead to severe losses on these banks' mortgage portfolios. Simulations based on estimated sensitivities of loss provisions to the macro-economic environment imply additional provisioning requirement for these banks of around CHF 12 billion under such a scenario. Overall, the domestically focused banks hold enough capital reserves over and above the regulatory minimum to absorb losses of this magnitude. Nonetheless, some individual institutions could end up being severely impaired under such a scenario.

⁵⁵ Market risk at cantonal banks accounts for 3% of total capital requirements (2007: 3.5%). The corresponding figure for the regional banks is 0.51% (2007: 0.44%) and for the Raiffeisen banks, 1.2% (2007: 1.5%). At the big banks, capital requirements for market risk accounted for 14.5% (2007: 9.2%).

⁵⁶ A direct interest rate risk exists if there is a serious mismatch between the repricing maturities of a bank's assets and liabilities. Banks typically use short-term liabilities to refinance long-term loans. As a result of such maturity transformations, interest rates on assets may be locked in for longer than interest rates on liabilities. If a bank is in this position, a rise in interest rates will reduce the present value of assets more substantially than the present value of liabilities, and the net present value of the bank will fall.

4 Capital base

The capital figures reported by the big banks at the end of 2008 suggest their capital situation improved over the previous year. However, in view of the expected worsening of the environment and the size of these banks (cf. box 3, p. 28), their capacity to absorb losses remains at a relatively low level. By contrast, the overall loss absorption capacity of the banks with a domestic business focus remains relatively high.

Mixed picture for the big banks

The figures reported for the end of 2008 indicate that the capital situation of the big banks improved over 2007. The risk-weighted total capital ratio rose from 10.7% to 12.6% (cf. chart 18), an increase attributable, on the one hand, to a decline in risk-weighted assets.⁵⁷ One of the factors contributing to this decline was the transfer of very risky UBS assets to the Swiss National Bank (SNB) last autumn. On the other hand, the big banks avoided a fall in eligible capital in that they more than offset their high losses through a number of recapitalisations (cf. chapter 2, p. 24). Although, in the case of UBS, one of these recapitalisations had to be carried out with state funds as part of the package of measures introduced last autumn, a very positive aspect remains the fact that both big

banks succeeded in raising substantial amounts of capital on the market, as well as the fact that some of the funds were raised at a relatively early stage of the crisis.

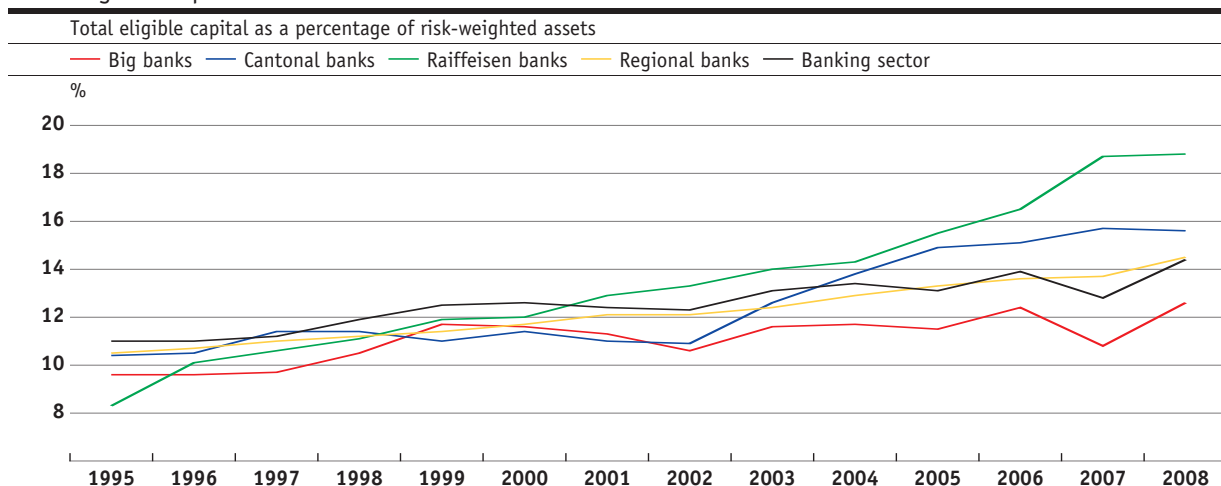
Due to a reduction of the size of the big banks' balance sheet, an improvement can also be observed with respect to leverage. Their capital-to-assets ratio rose in 2008, on average, from 2.5% to 3.0%, mainly driven by developments at Credit Suisse (cf. chart 19, p. 37).⁵⁸ While UBS's capital situation deteriorated slightly in the first quarter of 2009, Credit Suisse recorded a further improvement due to the earnings generated in the first three months.

However, there are several reasons for qualifying this favourable impression of the big banks:

First, the improvement in the risk-weighted ratios is mainly due to the revision of the capital requirements, rather than any more substantial change.⁵⁹ Under the revised framework (Basel II), the capital requirements as per the end of 2008 are considerably lower than under the previous rules (Basel I), also as per the end of 2008. The figures calculated according to Basel I show that the capital ratios of the big banks remained almost unchanged between the end of 2007 and the end of 2008. In other words, based on the risk definitions of Basel I, capital adequacy has not improved.

Risk-weighted capital ratios*

Chart 18



Sources: FINMA, SNB

* Ratios are based on Swiss capital regulations.

57 Cf. box 5, 'Capital regulation', on p. 35 of the SNB's *Financial Stability Report 2008* for an explanation of the terminology.

58 In the same time period, the Tier 1 capital-to-assets ratio rose from 1.9% to 2.1%.

59 Cf. box 5, 'Capital regulation', on p. 35 of the SNB's *Financial Stability Report 2008*, for a description of Basel II and how it differs from Basel I.

Second, the big banks' earning capacity has fallen sharply, as compared to previous years (cf. chapters 2, p. 24 and 3, p. 30). In the sense that 'the primary resource to absorb losses should be a firm's earnings stream',⁶⁰ their loss absorption capacity has decreased. Therefore, it is now more likely that, in an adverse scenario, losses will eat into the big banks' capital.

Third, despite the reduction, the leverage of the big banks remained very high at the end of 2008, both in international terms (cf. chart 20, p. 38) and in a long-term historical comparison (cf. chart 19). At the end of 2008, the ratio of Tier 1 capital to balance sheet total was 1.6% for UBS (Q1 2009: 1.6%) and 2.9% for Credit Suisse (Q1 2009: 3.2%). For UBS, this amounts to a leverage of 60, and for Credit Suisse, 33.⁶¹

Looking at tangible common equity, which is a narrower definition of capital,⁶² the capital-to-assets ratio for UBS came to 1.5% at the end of 2008 (Q1 2009: 1.5%),⁶³ while it was 1.9% for Credit Suisse (Q1 2009: 2.2%).⁶⁴ Hence, losses in the order of roughly 2% of total assets at UBS and 3% at Credit Suisse would currently deplete these banks' capital base unless simultaneous corrective measures were taken. By way of comparison: in 2008, the return on assets at UBS was -1.1%.

These factors suggest that despite the favourable developments and the high risk-weight-

ed capital ratios as compared to banks in other countries (cf. chart 20, p. 38), the capacity of the Swiss big banks to absorb losses remains at a relatively low level. In view of the size of the banks (cf. box 3, p. 28) and the significant uncertainty about risk measurements (cf. chapter 3, p. 30), it is important to ensure that the big banks are considerably better capitalised in future.

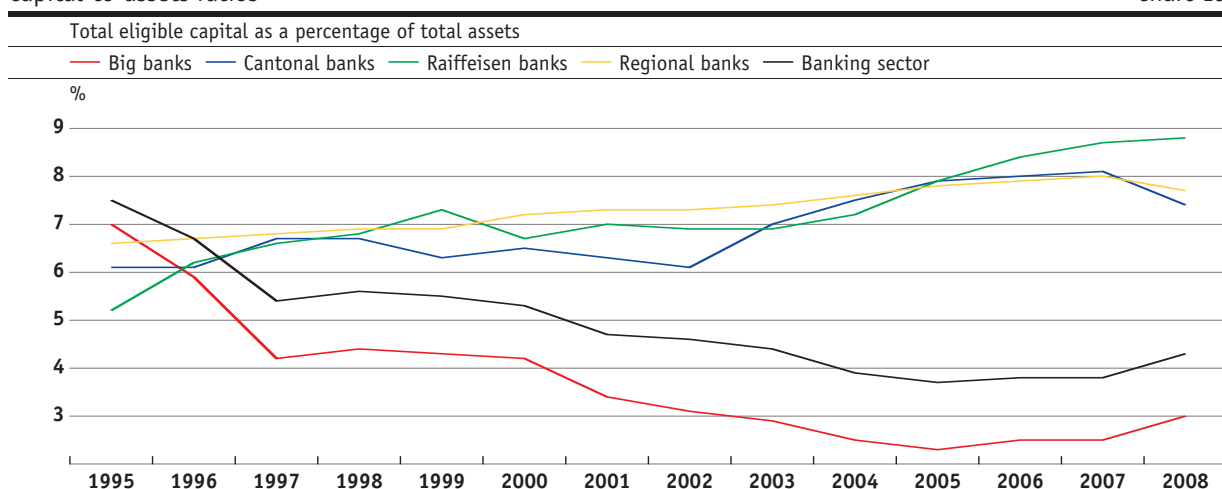
Practical measures have already been taken in this respect in Switzerland (cf. box 1, p. 9). The SNB has firmly supported these measures and is convinced that they will be effective. At the same time, additional steps will be needed. Therefore, the SNB is working at the international level for sounder capitalisation of large, systemically important banks. One of the views put forward is that, once the crisis has ended, the leverage of such banks should no longer exceed 20 in normal times.

Capital situation of banks with a domestic business focus unchanged at adequate levels

In the case of banks with a domestic business focus, the capital situation was almost unchanged as compared to 2007. For all these bank categories, eligible capital rose, while required capital either increased by a similar amount or, in some cases, even declined. Consequently, the risk-weighted capital ratio rose, from 13.7% to 14.5% in the case

Capital-to-assets ratios

Chart 19



Sources: FINMA, SNB

60 UBS, *Annual Report 2008*, p. 124.

61 As of 2013, at the earliest, the two big banks will be required to comply with a minimum 'FINMA leverage ratio' of 3% at group level (cf. box 1, p. 9). As at the end of 2008, the pro forma levels of this leverage ratio were 2.5% at UBS and 3.1% at Credit Suisse. Source: Annual reports, 2008.

62 Tangible common equity measures the portion of capital that is capable of absorbing a company's losses without triggering a default. Unlike regulatory capital, tangible common equity excludes

debt-like instruments, such as hybrid capital. Thus, tangible common equity is lower than regulatory capital.

63 In each case, the figures for UBS include the recapitalisation carried out last year in the form of mandatory convertible notes. They are stated after IFRS correction.

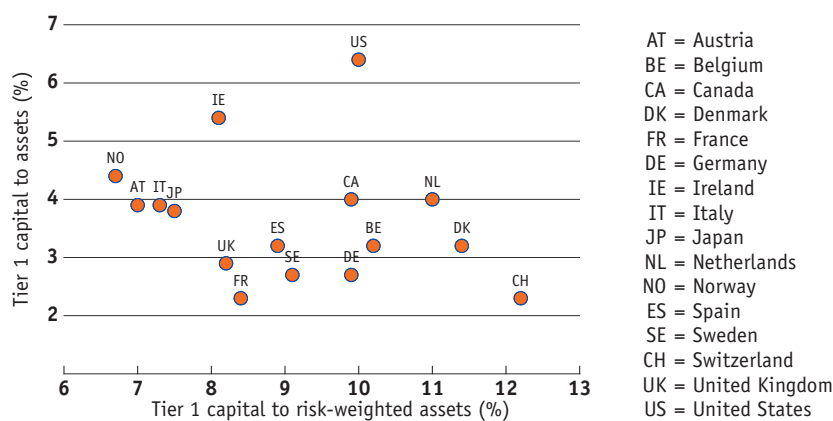
64 At the end of the first quarter of 2009, the risk-weighted tangible common equity ratio (tangible common equity divided by risk-weighted assets), which was an important element in the US Federal Reserve's stress test, came to 9.9% for Credit Suisse and 6.5% for UBS. Cf. *The Supervisory Capital Assessment Program: overview of results*, 7 May 2009, Board of Governors of the Federal Reserve System.

of the regional banks, and from 18.7% to 18.8% in the case of the Raiffeisen banks, while it slipped slightly for the cantonal banks, from 15.7% to 15.6% (cf. chart 18, p. 36).

The picture is similar for the capital-to-assets ratios. Both eligible capital and balance sheet totals increased for all bank categories. Consequently, capital-to-assets ratios remained almost unchanged (cf. chart 19, p. 37). As a result, leverage at all the bank categories with a domestic business focus remains low in historical terms.

The fact that most of the domestically focused banks have built up high levels of capital reserves in good times is laudable. These reserves will help them cope with the difficult times ahead. Set in relation to balance sheet totals, the excess capital of these banks is in the order of 3.5% to 5%. Consequently, the banks are in a position to make substantial write-downs without breaching the minimum statutory capital requirements.

Capital ratios of major international banks* Chart 20



Source: 2008 annual and quarterly reports

* Average ratios of largest banks in each country. Ratios are based on BIS Tier 1 and on BIS risk-weighted assets.

5 Market assessment

Credit spreads, credit default swaps (CDS), equity prices and ratings are indicators of market participants' assessment of the soundness of a bank. According to these indicators, 2008 and the first quarter of 2009 were – by any standards – an extraordinary period for the Swiss big banks. Their CDS prices reached levels many times higher than previous peaks, their market value fell dramatically and their ratings deteriorated.

The movements in these indicators in April and May 2009 suggest that, while market participants remain critical, they have become more optimistic regarding the big banks' capacity to withstand the current crisis.

The repercussions of the financial crisis on the rest of the Swiss banking sector have been far less pronounced. Market participants appear to be relatively confident that, as a whole, banks with a domestic focus should be resilient enough to withstand the impact of the recession currently unfolding in Switzerland.

CDS premia of big banks very high in historical terms

Credit default swaps (CDS) are credit derivatives that provide insurance against the default of some reference entity. The buyer of the insurance makes periodic payments – the CDS premium – to the seller and in return receives the notional amount of the bond issued by the reference entity in case the reference entity defaults. CDS premia thus reflect the premium which the market demands for insuring a bank's bonds against default. Hence,

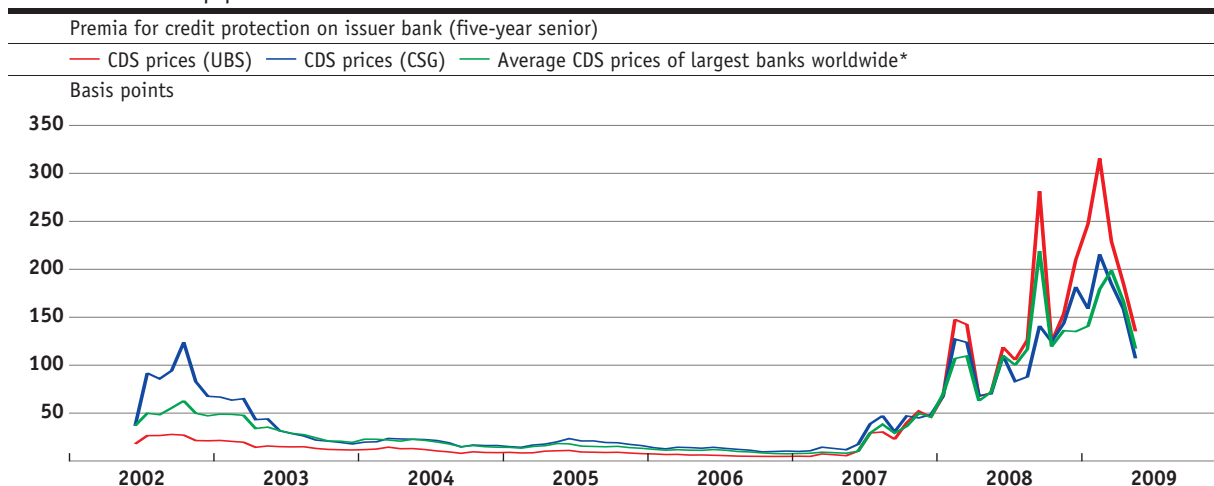
a higher CDS premium reflects, all else equal, a higher expected default probability.

Since May 2007 the premia for CDSs written on bank debt have risen considerably, reaching unprecedented levels during the first quarter of 2009 for most large international banks, including Credit Suisse and UBS. As can be seen in chart 21 below, for a prolonged period of about four years preceding August 2007, CDS premia were very low and decreasing, reaching around 10 basis points in early 2007. After increasing moderately throughout 2007, the first peak occurred at the beginning of 2008 in the run-up to the failure of Bear Stearns, a large US investment bank. Thereafter, CDS premia receded somewhat and returned to moderate levels during March and April. From then on, they rose steadily until March 2009. At that stage, average CDS premia had increased more than twentyfold compared to pre-crisis levels, reaching 220 basis points.

Whereas before 2008 the CDS premium for UBS had been systematically below the average premium for large banks worldwide, and the one for Credit Suisse mostly above, the pattern changed abruptly in February 2008. By September of that year, UBS's CDS premium was 60 basis points above the worldwide average, which had itself reached a historical high. Around the time when the Swiss government and the SNB announced their support measures for UBS in October 2008, UBS's CDS price declined to the worldwide average (around 120 basis points at that time) and remained there for several weeks. The support measures thus seem to have temporarily improved market participants' assessment of UBS's capacity to withstand the cri-

Credit default swap premia

Chart 21



Source: Bloomberg

* Comprises a sample of the largest banks from North America, Japan and Europe.

sis. However, the market's evaluation of the bank's creditworthiness subsided again considerably in late 2008 and early 2009. UBS's CDS premium peaked at over 350 basis points in March, considerably exceeding (by 130 basis points) the worldwide average, before easing significantly in April and May, and returning to levels close to the average observed since the beginning of the crisis.

Changes in yield spreads between bank bonds and Swiss Confederation bonds, another market indicator of a bank's soundness, convey a similar message.⁶⁵ Yield spreads for both Credit Suisse and UBS have increased strongly since the onset of the crisis, reaching levels far above former peaks before receding substantially in April and May 2009 (cf. chart 22).

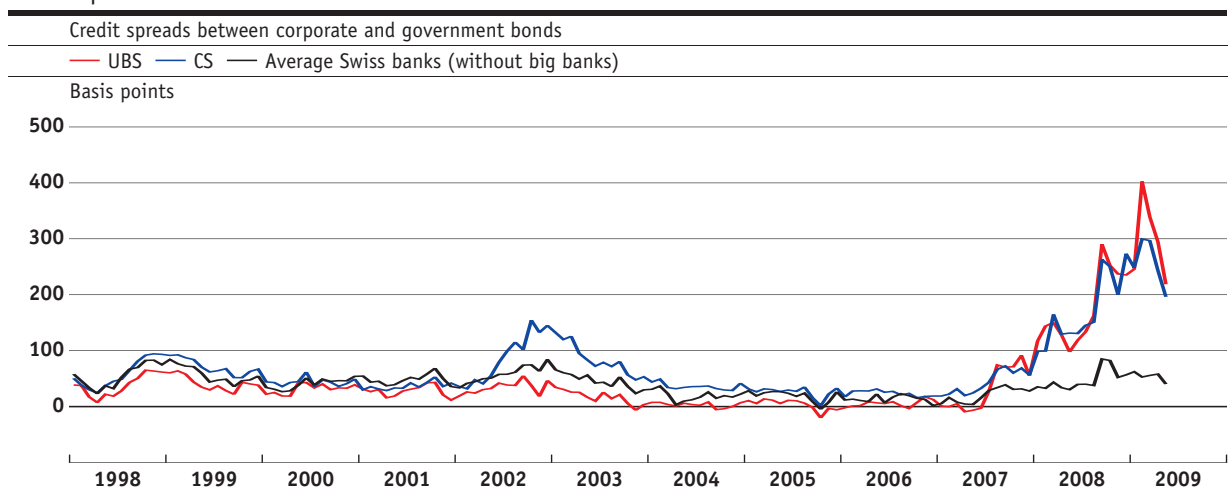
For most Swiss banks with a domestic focus, the analysis of the market's assessment of their creditworthiness has to rely on yield spreads only, since there are no CDSs written on their bonds. Although during September and October 2008 their yield spreads rose to a level comparable to those observed during the previous stress episodes of 1998–1999 and 2002–2003, they remain low when compared to the spreads for UBS and Credit Suisse (cf. chart 21, p. 39 and chart 22).

Marked fall in big banks' share prices

Share prices are indicators of banks' expected future profits. All else equal, a bank's share price falls if its expected future profit decreases. The exceptionally strong decline in banks' share prices

Credit spreads

Chart 22



Share prices

Chart 23

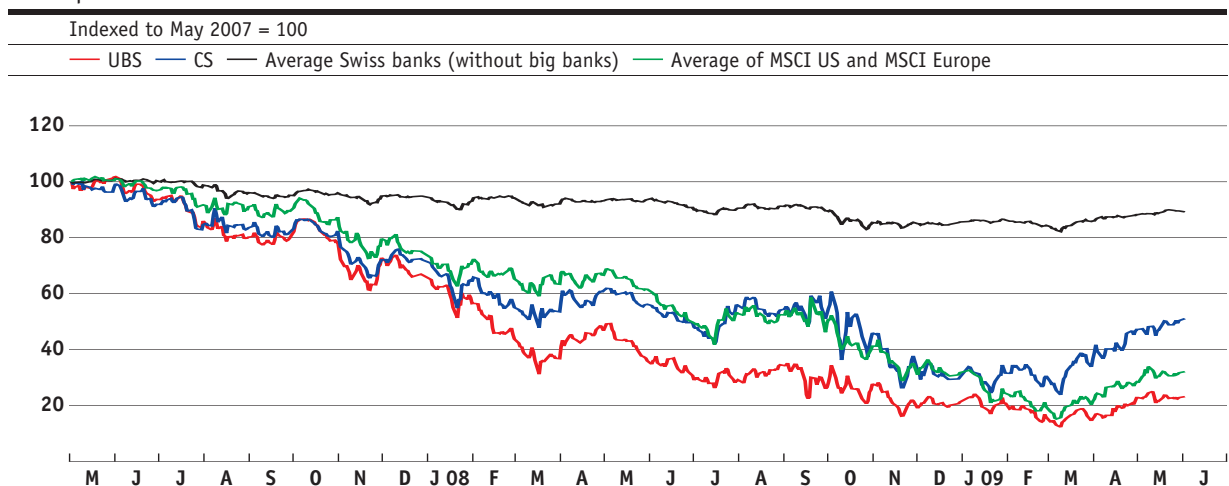


Chart 22: Sources: SNB, Thomson Datastream

Chart 23: Source: Bloomberg

65 In the calculation of bond spreads it is assumed that the government bond yield essentially reflects the risk-free interest rate. Recently, the premium for CDSs written on bonds of the Swiss Confederation has risen. Hence, government bonds need not reflect the true risk-free interest rate and, in the current circumstances, yield spreads might thus underestimate market participants' assessment of the banks' default probability.

worldwide since the outbreak of the crisis in mid-2007 mainly reflects market participants' negative assessment of banks' future prospects (cf. chart 23, p. 40). This also applies to the Swiss banks and particularly to the big banks.

The peak-to-trough price declines between May 2007 and March 2009 came to 85% for UBS and 70% for Credit Suisse. By comparison, the decrease was about 80% for US and European banks (measured by the average of the MSCI US and MSCI Europe bank indices), while the shares of other Swiss banks lost about 15% in value on average over the same time span. As a consequence of these developments, UBS's share price fell to an all-time low of around CHF 9, or about 50% below the previous low-water mark recorded in 1998 in the context of the LTCM and Russian crises. Credit Suisse's share price dropped to around CHF 22, close to its previous lows observed during the 2002–2003 stress episode. Even though prices recovered substantially in April and May 2009, they remain about 60% below their pre-crisis levels.

Rating downgrades

The assessment of banks' soundness by rating agencies provides a third and complementary source of information on market participants' perception of the soundness of the Swiss banking sector. Although only about 8% of all institutions in the Swiss banking sector are rated by Moody's, Standard & Poor's (S&P) and/or Fitch, these banks account for a large share of total assets in the sector. Long-term credit ratings assess a bank's creditworthiness and are thus a rough estimate of its

default probability. They measure the same unobservable attribute of a bank (i.e. its creditworthiness) as CDS premia, but change discretely and much less frequently. Moreover, rating agencies base their ratings on many different sources, including non-public information. Hence, although CDS premia and credit ratings are closely related, they are, as a rule, not based on the same information sets, and also differ in their sensitivity to information.

The general assessment of the credit standing of banks with a domestic focus is the same as in our 2008 report: medium to high. The few downgrades were offset by upgrades⁶⁶ and the outlook remains stable for all these banks.

The ratings of the two big banks, however, came under considerable pressure. UBS, in particular, suffered some severe downgrades. Over the past year, all three rating agencies downgraded UBS's long-term credit rating by two notches (Moody's to Aa2, S&P to A+, Fitch to A+). Credit Suisse's long-term credit rating remained constant at Moody's (Aa1) and Fitch (AA-), while S&P downgraded it by one notch to A+. The bank is currently on Fitch's watchlist for a downgrade.

In addition to long-term credit ratings, which reflect the risk borne by a bank's bondholders, Moody's and Fitch also issue 'bank financial strength ratings' and 'individual bank ratings', respectively (collectively: FS ratings). From a financial stability perspective, these ratings are of particular interest in that they focus exclusively on the intrinsic financial strength of institutions. Therefore, any support by a third party, e.g. by owners

Moody's FS ratings* Chart 24

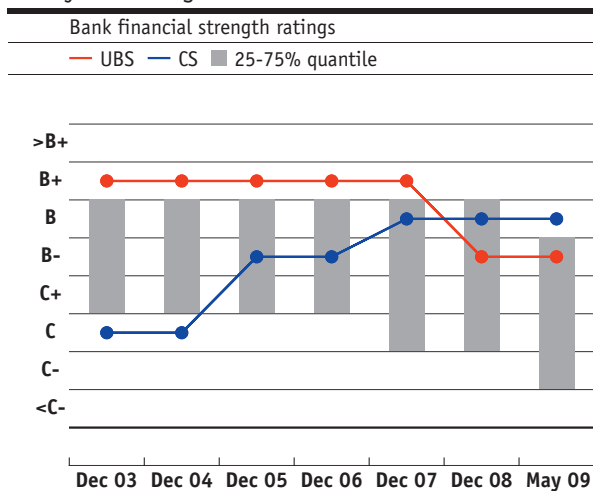


Chart 24: Source: Moody's

Fitch FS ratings* Chart 25

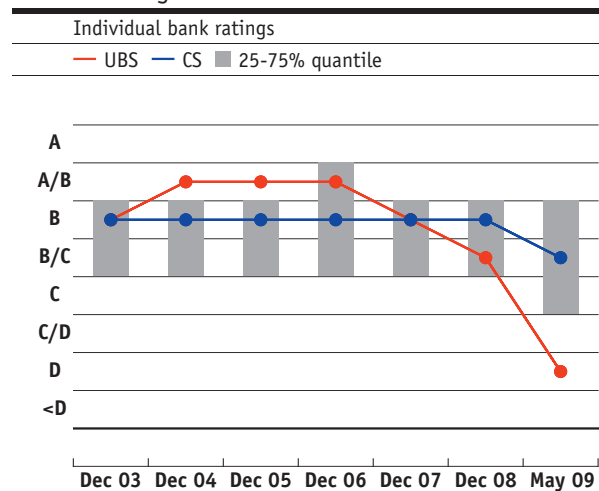


Chart 25: Source: FitchRating

* Sample comprising the world's largest banks. If a bank holding company is not assigned a financial strength rating, the rating of its largest affiliate is taken instead.

Box 4. Stress index for the banking sector

Chapters 2 to 5 of this report cover different aspects of the banking sector, all of which are potentially relevant for its stability. In this box, we combine this information to create a 'stress index' measuring the current degree of instability in the Swiss banking sector.

The stress index is a continuous indicator of the level of stress experienced by the Swiss banking sector at a given date. The higher the value indicated by the stress index, the higher the level of stress in the Swiss banking sector. The index combines a set of variables – including market data, balance sheet data, non-public data from the supervisory authorities and structural data – all of which represent possible symptoms of crisis in the banking sector. These symptoms are:

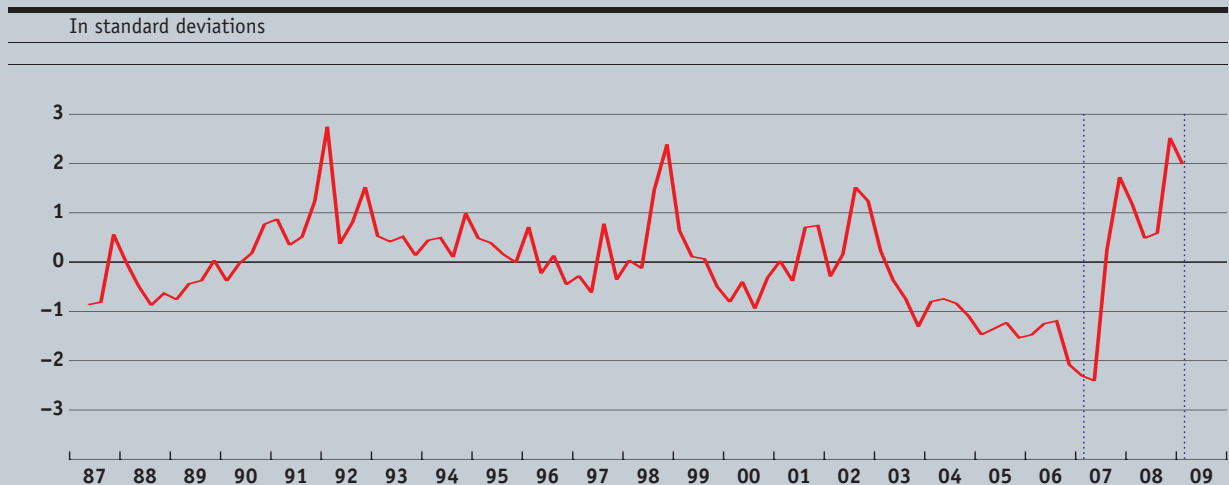
- a fall in the banks' share price
- an increase in the banks' bond yield spreads
- a fall in interbank borrowing
- a decrease in the banks' profitability
- a decrease in the banks' capital

- an increase in the banks' provisioning rate
- an increase of the share of total assets held by banks listed on the regulator's watchlist⁶⁷
- a decrease in the number of bank branches

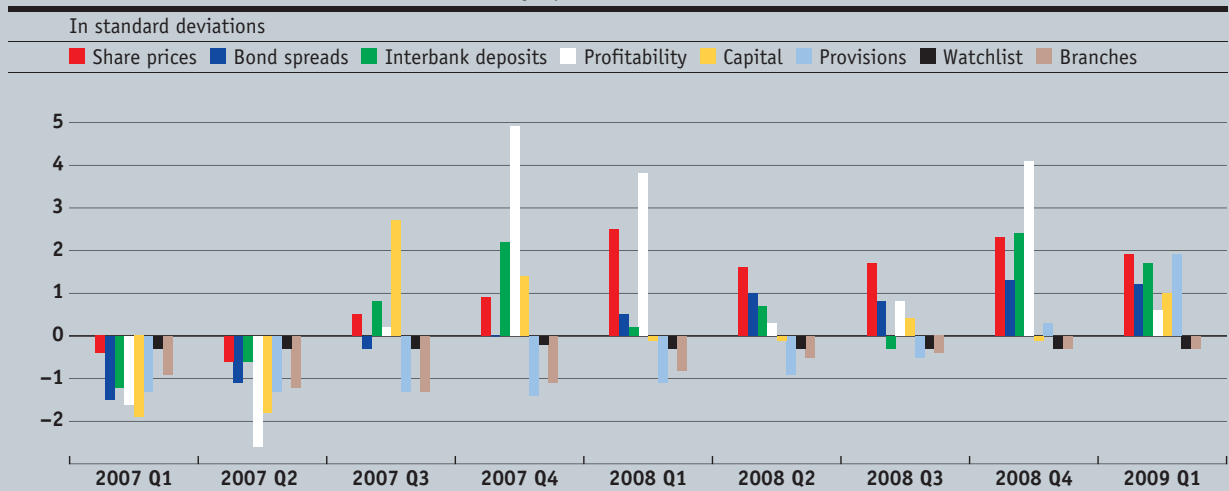
The higher the intensity of the individual stress symptoms, the higher the level of the stress index.

The first chart below confirms the overall impression that the Swiss banking sector has been experiencing very high levels of stress for a prolonged period of time. After reaching an all-time low in the second quarter of 2007, the stress index had risen to a level close to its historical peak by the first quarter of 2008. The second chart shows that many stress symptoms, the individual components of the stress index, have been above their long-term average since the third quarter of 2007. Furthermore, during the fourth quarter of 2008, for the first time on record, three out of eight of these stress symptoms were simultaneously more than two standard deviations above their long-term average.

Stress index*



Stress index: Contribution of individual stress symptoms to total stress*



Sources for charts: FINMA, SNB, Thomson Datastream. SNB calculations

* The higher the level of the index, the higher the level of stress in the Swiss banking sector. The index is expressed in terms of standard deviations from its 1987–2008 average. A value above (below) zero indicates that the stress is above (below) its historical average. The stress index for the first quarter of 2009 has been computed with provisional data.

For the marked period, details of the contribution of individual stress symptoms to total stress are given in the second chart on this page.

** The higher the intensity of an individual stress symptom (e.g. the sharper the decrease in bank share prices), the higher the level of the stress index. A value above (below) zero indicates that the intensity of an individual stress symptom is above (below) its historical average. The stress index and the contributions of individual stress symptoms for the first quarter of 2009 have been computed with provisional data.

67 This list contains banks that find themselves, temporarily, under special scrutiny. The big banks, which are closely monitored by the regulator at all times, are not reported on this list.

Even though the index points to a prolonged period of very high levels of stress, the peaks of the current crisis remain in line with levels reached in the early 1990s (regional banking crisis) or during 1998–1999 (LTCM and Russian crises). This stands in contrast to the impression, conveyed by other indicators, that the severity of the current crisis is unique in the post-World War II era. This contrast can be attributed to two main factors.

First, the stress index reflects – by construction – the average stress in the Swiss banking sector. While, according to most indicators, Switzerland's biggest bank went through an unprecedented level of stress in 2007 and 2008, most of the banks with a domestic focus experienced a period of lower-than-average stress. Their profitability was high by historical standards, their capital base increased and their market value declined only moderately. Thus, the diversification of the Swiss banking sector regarding banks' size, exposures and activities has helped contain the sector's average level of stress.

Second, the stress index also includes stress symptoms, such as provisions, that typically react with a certain lag to a deterioration in economic conditions. Hence, the stress index is less sensitive to any anticipated deterioration in the quality of the banks' loan portfolios than market-based indicators such as share prices or CDS premia. However, if, as expected, default rates among borrowers do rise further in the short and medium term, provisions in the banking sector will grow substantially. Furthermore, the size of the regulator's watchlist is expected to increase and most other stress symptoms are likely to remain above their long-term average. As a consequence, the level of stress in the Swiss banking sector, as measured by the stress index, is expected to remain high in the medium term.

or official institutions, is not taken into consideration. This generates a wedge between FS ratings and long-term credit ratings, with long-term credit ratings being higher than FS ratings.⁶⁸ Because of the massive government interventions in banking institutions and financial markets around the globe in the course of 2008, this wedge has widened. The number and magnitude of downgrades of long-term credit ratings are noticeably smaller than the number and magnitude of FS rating downgrades. This indicates that long-term credit ratings have become less informative about a bank's soundness because they factor in explicit or implicit state guarantees.

Charts 24 and 25 on p. 41 illustrate the evolution of bank financial strength ratings and individual bank ratings, respectively. They highlight the deterioration of credit quality among large banks worldwide. Whereas, in 2006, 75% (47%) of the banks were rated B or higher by Fitch (Moody's), only 44% (21%) had such a rating by spring 2009.

As these charts show, both rating agencies now perceive Credit Suisse as being in a better condition than UBS, which is in sharp contrast to their assessment prior to the crisis. However, Fitch and Moody's diverge markedly in their assessment of UBS's soundness. Both agencies downgraded the bank, but Fitch did so to an unusual extent, taking its individual bank rating down by four notches, from B in September 2008 to D in March 2009.⁶⁹ Before the crisis, UBS's rating had been only one notch below the highest grade (cf. chart 25). Moody's downgrade of UBS's financial strength rating was far more moderate, from B to B– in July 2008.⁷⁰ Credit Suisse's individual bank rating was downgraded by Fitch in January 2009 by one notch to B/C, while Moody's did not change the bank's financial strength rating.

68 These rating differentials are systematically analysed in B. Rime, 'Too big to fail', *The Financial Regulator*, 2005 10(3), pp.47–51.

69 Fitch's D rating corresponds to 'a bank that has weaknesses of internal and/or external origin. There are concerns regarding its profitability and balance sheet integrity, franchise, management, operating environment or prospects'. Only 10% of all banks in the sample are rated as D or worse.

70 Moody's B rating corresponds to banks with 'strong intrinsic financial strength. Typically, they will be institutions with valuable and defensible business franchises, good financial fundamentals, and a predictable and stable operating environment'.

