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SWITZERLAND

FINANCIAL SECTOR STABILITY ASSESSMENT

May 2014

This Financial System Stability Assessment on Switzerland was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on April 16, 2014.

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FINANCIAL SYSTEM STABILITY ASSESSMENT

April 16, 2014

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This report is based on the work of the Financial Sector Assessment Program (FSAP) mission that visited Switzerland during the periods September 11–24 and December 4–16, 2013.[1] The previous FSAP update took place in 2006. The implementation status of its key recommendations can be found in Table 1. The findings were discussed with the authorities on March 20–24, 2014.

- The FSAP team was led by Charles Enoch (Mission Chief) and included Miguel Segoviano (Deputy Mission Chief), Carlos Caceres, Marc Dobler, Eija Holttinen, Nadege Jassaud, Fabian Lipinsky, Erik Lundback, Rodolfo Wehrhahn, Froukelien Wendt, Mamoru Yanase (all MCM); Mario Tamez (LEG); Yingbin Xiao (EUR); Nick Le Pan, and Mimi Ho (both external experts).

- FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs.

[1] Further information on the FSAP program can be found at http://www.imf.org/external/np/fsap/fssa.aspx.

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Glossary

AML/CFT	Anti-money-laundering/combating the financing of terrorism
APLIEM	Anti-persistent low interest rate environment measures
BBA	Building block analysis
BBVA	Banco Bilbao Vizcaya Argentaria
BCP	Basel Core Principles
BOD	Board of directors
BU	Bottom up
CAR	Capital adequacy ratio
CCB	Countercyclical capital buffer
CCP	Central counterparty
CDS	Credit default swap
CET1	Common equity tier 1
CIS	Collective investment schemes
CISA	Collective Investment Schemes Act
CoCos	Contingent capital instruments
CPI	Consumer Price Index
CS	Credit Suisse
CSD	Central Securities Depository
D-SIFI	Domestically systemically important financial institution
DGS	Deposit guarantee scheme
DTI	Debt-to-income
DoJ	U.S. Department of Justice
EA	Euro area
EDF	Expected default frequency
ELA	Emergency liquidity assistance
EU	European Union
FATF	Financial Action Task Force
FAOA	Federal Audit Oversight Authority
FDF	Federal Department of Finance
FFSA	Federal Financial Services Act
FINMA	Swiss Financial Market Supervisory Authority
FINMASA	Financial Market Supervisory Authority Act
FinfraG	Swiss Financial Market Infrastructure Act
FMI	Financial market infrastructure
FOPI	Federal Office of Private Insurance
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSI	Financial soundness indicators
FX	Foreign exchange
GAAP	Generally Accepted Accounting Principles
GDP	Gross domestic product
GFC	Global financial crisis

G-SIB	Globally systemically important bank
G-SIFI	Globally systemically important financial institution
G-SII	Globally systemic important insurer
GFSM	Government Financial Statistics Manual
HQLA	High-quality liquid assets
IAIS	International Association of Insurance Supervisors
ICP	Insurance Core Principles
IFS	International Financial Statistics
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IFRS	International Financial Reporting Standards
IRB	Internal risk-based
ISL	Insurance Supervision Law
KA	FSB's Key Attributes of Effective Resolution Regimes
LCR	Liquidity coverage ratio
LGD	Losses given default
LIBOR	London Interbank Offer Rate
LPA	Loss potential analysis
LTV	Loan-to-value
MCSR	Marginal contribution to systemic risk
MOU	Memorandum of understanding
OMT	Outright monetary transactions
OTC	Over-the-counter
PD	Probability of default
RAM	Risk assessment matrix
RES	IMF Research Department
RWA	Risk-weighted assets
SBA	Swiss Bankers Association
SFBC	Swiss Federal Banking Commission
SIC	Swiss Interbank Clearing
SIFI	Systemically important financial institution
SNB	Swiss National Bank
SQA	Swiss Qualitative Assessment
SRO	Self-regulating organization
SST	Swiss Solvency Test
StD	Standard deviation
Sw F	Swiss francs
TBTF	Too-big-to-fail
TD	Top down
TIBOR	Tokyo Interbank Offer Rate
UMP	Unconventional monetary policy
VI	Vulnerability index
WEO	World Economic Outlook

EXECUTIVE SUMMARY

Switzerland's financial sector is one of the largest in the world, especially relative to GDP. It is home to two of the largest banks, which are designated as globally systemically important financial institutions (G-SIFIs), and one of the largest reinsurance companies. The two global banks, account for 43 percent of Swiss banking sector deposits and 18 percent of capital; in addition, there are 24 cantonal banks, one of which has been designated a domestically systemically important financial institution (D-SIFI), as well as the newly licensed Postfinance, a cooperative Raiffeisenbank, and small private and regional banks. The two global banks—particularly UBS—were hard hit by the recent global financial crisis (GFC); the rest of the banking sector emerged relatively unscathed.

In response to the GFC the Swiss authorities took forceful action. The single supervisor, the Swiss Financial Market Supervisory Authority (FINMA), became operational in 2009. Capital standards were raised above Basel minima and ahead of the Basel implementation timetable. Additional capital buffers were imposed on the two large banks, and contingent capital instruments (CoCos) introduced. Macroprudential instruments were analyzed, and at end-September 2013 a countercyclical capital buffer (CCB) targeting residential property mortgages took effect; an increase in the CCB was announced in January 2014, to take effect from June 2014. The insurance industry became subject to the Swiss Solvency Test (SST).

Stress tests indicate that the banks are robust against even severe shocks. Banks have increased their capital, and the two global banks have achieved substantial deleveraging. FINMA has focused on significantly improving the quality of its supervision. That said, identification of individual bank risk was hindered as legal constraints prevented the Swiss authorities from providing regulatory data at the individual bank level. Hence the stress tests will not have served to indentify outliers in performance.

Nonetheless, there remain important vulnerabilities and challenges to financial stability:

- The Swiss economy is among the most interconnected in the world and is deeply exposed to volatility in the European Union (EU). Stresses in the euro area periphery led to "safe haven" flows to the Swiss franc, putting sustained upward pressure on the rate, which the authorities seek to counter through maintaining an exchange rate floor.

- Real estate bubbles appear to be emerging; with monetary instruments not available, macroprudential instruments are being introduced, but so far are limited and untested.

- While important progress has been made in addressing too-big-to-fail (TBTF) and too-big-to-save (TBTS) issues, this is still a work in progress.

- Interest rates are negative at some maturities, threatening the business models of life insurance and pension companies. Temporary alleviation from the SST is in effect through 2015.

It is therefore important to restore the momentum of the strong post-crisis financial sector reform agenda.

- Switzerland initially sought to address banking sector vulnerabilities by establishing prudential standards tougher than its international peers. However, the early focus on regulatory bank capital has not been matched by equal focus on other measures of bank strength, particularly the leverage ratio. The two global banks are still significantly more leveraged than many other large international banks.

- Further tightening and expansion of macroprudential measures is warranted, and any mortgage interest subsidies phased out.

- International agreements on cross-border resolution of G-SIFIs are under discussion, but additional measures will be required to make resolution viable. Resolution powers of FINMA have been enhanced, but may not be quickly available for handling banks not pre-designated as systemically important financial institutions (SIFIs).

- To further enhance the resolution framework, the deposit guarantee scheme (DGS) needs to be overhauled so that it is adequately funded, can finance measures other than bank closure if these are cheaper, and is simple for depositors to understand.

- Careful preparations are needed for handling the implications for the life insurance industry of the phase-out of amelioration measures in the supervisory regime.

- Also, the financial market infrastructures (FMIs) should comply with the new international standards, and crisis management arrangements should be established between the authorities of FMIs.

The cantonal banks have highly concentrated exposures, largely on mortgages and real estate, and some exhibit weak governance. Some are increasing their national and cross-border business while others remain locally based, but difficulties in one could spread to the group as a whole**.** Most have portfolios highly concentrated in local real estate, and the interrelationships between the banks and their cantons may threaten the banks' soundness. Increasing intensity of supervision, and adoption throughout the system of "best practices" in governance, could reduce vulnerabilities.

Litigation risk—and potential damage to confidence in Swiss banks—has become a significant vulnerability. Overseas tax authorities have been challenging Swiss banks that provide services to foreign citizens for apparent tax avoidance, forcing withdrawals and potentially threatening business models, particularly of some private banks. The large Swiss banks are also being investigated in relation to mis-selling of mortgage-backed securities, the London Interbank Offer Rate (LIBOR) and Tokyo Interbank Offer Rate (TIBOR) scandals, and more recently the foreign exchange manipulation scandal.

Financial market supervision is the responsibility of FINMA, which has made marked strides in recent years. High-quality staff have been recruited. There is strong compliance with many Basel Core Principles (BCPs) and Insurance Core Principles (ICPs), although compliance with the International Organization of Securities Commissions' (IOSCO) Objectives and Principles of Securities Regulation is more moderate.

Nevertheless, significant weaknesses in supervision remain. FINMA's use of external auditors for onsite supervision of banks and securities companies provides benefits, but the model needs to be applied carefully. FINMA should provide more guidance to the auditors; ensure greater supervisory harmonization across entities; and complement the auditors' work with more "deep dives" on selected issues. The auditors should not be paid by the supervised entities, but rather from a FINMA-administered bank-financed fund. The regulatory and financial bank audit functions could be split across audit firms, and audit firms could be periodically rotated. On the insurance side, high-quality off-site work lacks sufficient complementary onsite inspections. Securities market regulation was not the first priority to date, and the envisaged comprehensive reform agenda should be taken forward forcefully.

FINMA cannot carry out critical enhancement plans without augmentation of resources. FINMA observes a self-imposed headcount ceiling, following substantial personnel increases in recent years. The headcount ceiling is unhelpful. As noted above, there are weaknesses in supervision, and supervision of mid-sized banks is significantly less intensive than that of the large banks. To counter this issue in particular will require augmentation of resources. FINMA could also enhance the breadth of its resources, including, perhaps, increasing the exchange of staff with supervisory agencies abroad or pre-entry training.

Switzerland, like much of Europe, remains heavily reliant on the banking sector. Capital markets are relatively less developed. The Swiss authorities may wish to review the extent to which taxes, for instance on bond issuance, deter capital market development and enhance consumer protection in securities markets so as to give confidence as to the soundness of the markets. Further enhancement of FINMA's agenda for improving supervision of securities markets would also be helpful.

Table 1. Switzerland: Key Recommendations	
Recommendation	**Timing**
Impose a leverage ratio on the banks that is tougher than international minima.	Short term
Remain alert to the build-up of risks in domestic real estate and mortgage markets. Fully enforce self-regulation, and consider further raising the CCB and introducing additional tools (e.g., debt-to-income (DTI) and loan-to-value (LTV) limits).	Short term
Reach agreement with partner supervisors as to the resolution of the country's G-SIFIs.	Medium term
Make available the full range of best practice resolution powers to handle any bank deemed systemic at the time.	Medium term
Overhaul the deposit insurance scheme: make its provisions more transparent; reform its governance; and build up dedicated ex ante funding with a back-up line of support. Make deposit insurance funds available to finance resolution measures on a least-cost basis.	Short term
Monitor closely the condition of the life insurance firms in advance of the prospective elimination of the palliative measures protecting the companies from the effects of low interest rates, and enhance public understanding of the SST.	Medium term
Issue guidance on the cantonal banks' governance, based on their best practice, including reducing political interconnectedness. Issue guidance on guarantees for cantonal banks, to enhance transparency and create a level playing field both across the cantonal banks and with the rest of the banking sector.	Short term
Ensure that the likely consolidation among the private banks in response to U.S. tax pressures proceeds smoothly.	Short term
Issue guidance to auditors to ensure consistency of supervision, and undertake more "deep dives" into particular areas of concern. Increase the intensity of onsite supervision, including of middle-sized and smaller banks.	Short term
Increase FINMA's resources so it can carry out its agenda for supervisory enhancement. The resource pool for highly qualified staff could be expanded.	Short to Medium term
Prioritize regulatory reform of securities markets, to bring arrangements up to international standards. Enhance focus on conduct of business supervision of banks and securities dealers.	Medium term
Pursue legislation to improve policyholder protection, enhance brokers' supervision, and increase the level of public disclosure.	Medium term
Bring FMIs into compliance with new international principles and establish crisis management arrangements between the authorities of FMIs.	Short term
Establish transparency in the financial sector as a core element of the Swiss "brand," in particular through heightening banks' disclosure requirements, including as regards capital weighting and providing data for adequate risk analysis.	Short term

STRUCTURE AND RECENT PERFORMANCE OF THE MACROECONOMY AND FINANCIAL SYSTEM

A. Financial Structure, Macrofinancial Developments, and Risks

1. The Swiss economy has regained momentum. Driven by robust domestic demand, the recovery is gathering pace. Inflation is slightly positive and unemployment low. The exchange rate floor was introduced in September 2011 and has helped safeguard macroeconomic stability. The fiscal position is strong.

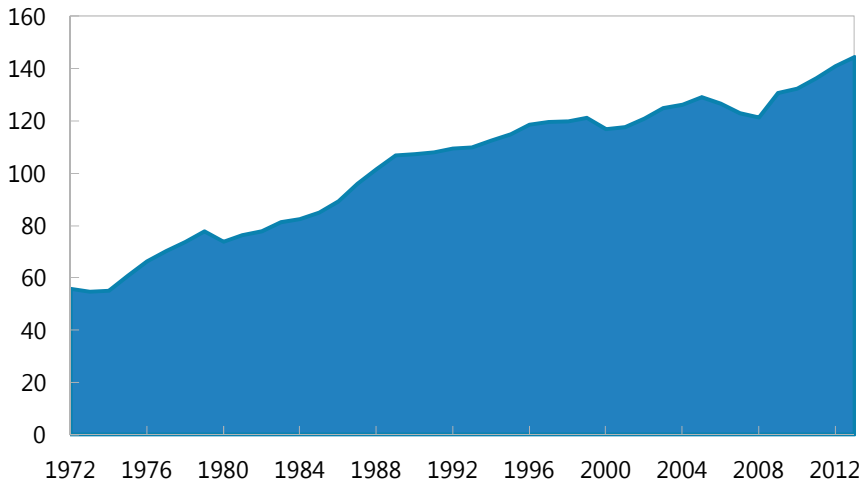
2. Switzerland has a diverse financial sector that is systemically important to global markets. It comprises several significant global players in banking and insurance, 24 cantonal banks, regional financial institutions, private banks, foreign banks, internationally oriented insurance companies, and many pension funds. It has one of the largest banking and insurance sectors in terms of assets to GDP. The two large banks—UBS and Credit Suisse (CS)—rank among the world's top ten banks and are designated as G-SIFIs. The large reinsurance group, Swiss Re, is the world's second largest reinsurance company. Switzerland is a global leader in private wealth management, with a global market share of more than 25 percent in cross-border private banking. The Swiss financial system contributes about 10 percent to Swiss GDP and employs over 5 percent of the labor force.

3. Banking and insurance are highly concentrated. The two large banks account for about one-half of the Swiss banking system's global assets and are important intermediaries in global financial markets. The newly bank-licensed PostFinance and the cooperative Raiffeissen banks are among the largest in the country in terms of deposit customers. Two life insurers and three non-life insurers account for over 50 percent of the market. About 65 percent of total premiums are booked abroad, and 95 percent of reinsurance premiums relate to foreign business.

4. Swiss banking sector balance sheets are following divergent trends, with substantial deleveraging by the large banks while domestic banks are growing rapidly. The size of the sector has fallen by 16 percent since the peak of the crisis. However, the balance sheet dynamics differ significantly across bank categories. The two large banks been challenged to meet regulatory requirements and change business models. In contrast, domestic banks have registered a huge expansion because of the strong growth in mortgage finance.

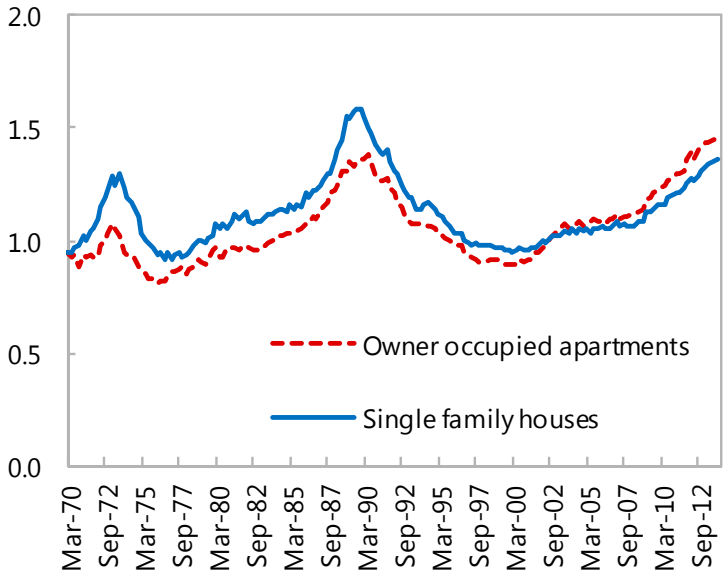
5. Credit has seen strong growth. Mortgage lending growth has been about 5 percent per year since 2009, and mortgage debt recently reached about 145 percent of GDP—high in both international and historical comparisons (Figure 1). With rising mortgage lending, already high household debt (mostly consisting of mortgages) has risen further, with mortgages to households well above 100 percent of GDP. Mortgages are traditionally of fairly short maturity, which implies frequent refinancing, leaving borrowers exposed if interest rates should rise from the current very low levels. Residential real estate prices are elevated and, compared to the consumer price index, owner-occupied apartment prices are at an all time high (Figure 2). Also, compared to income, prices for owner-occupied apartments are substantially above their long-run average.

Figure 1. Switzerland: Total Mortgages
(In percent of GDP)



Sources: SNB, World Economic Outlook (WEO), International Financial Statistics (IFS), IMF staff estimates.

Figure 2. Switzerland: Real Residential Real Estate Prices
(Index)



Source: Wuerst & Partner, IFS.

6. Swiss banks' profitability has recovered sharply since the crisis, but the income mix has changed. Historically low interest rates and the flat yield curve have since 2008 narrowed interest margins and reduced the contribution of net interest income to gross income. This is more than offset by a more than doubling of fee-based and trading income.

7. The insurance industry is in a transitional phase in a challenging low-rate environment. Life insurers struggle and some take excessive risks as yields on safe assets are very low. The business performance of non-life insurers is better than that of life insurers, but competition is high.

8. Historically low interest rates and abundant liquidity are fueling house price appreciation, heightening vulnerability to price corrections, and interest rate increases. There is evidence of bubble-like dynamics in some regions and market segments, raising concerns about overly leveraged borrowers and growing bank exposure to the risk of a price correction or an interest rate increase.

9. The two large banks are undertaking capitalization and restructuring plans, but leverage remains high. Basel III capital requirements were introduced at the beginning of 2013, and the Swiss too-big-too-fail (TBTF) legislation requires large banks to hold additional buffers. The two large banks also started downsizing their investment banking business. Although the Swiss authorities have no plans to introduce structural measures along the lines of the Volcker, Vickers and Liikanen proposals, subsidiaries of both banks in countries affected are adjusting their business models in response.

10. Swiss banks remain vulnerable to cross-border spillovers. Despite retrenchment from cross-border lending, Swiss banks' foreign exposure is one of the highest among advanced economies. Exposure to periphery euro area countries is limited; Swiss banks are most exposed to the United States and the United Kingdom.

B. Financial Sector Structure

The two G-SIFIs

11. The two major Swiss banks were among the hardest hit of commercial banks in the GFC, but the authorities reacted promptly. UBS was rescued by a large government package, which included the purchase of impaired assets as well as a government capital injection. A new regulatory framework for TBTF banks was enforced from January 2013, with phase-in arrangements over five years. It set tougher standards than Basel III on capital liquidity, diversification, and resolution. Switzerland is also an early adopter of new Basel capital rules without exceptions.

12. The Swiss authorities have made commendable progress in putting in place a resolution regime to address the TBTF problem. The authorities are ahead of many jurisdictions in adopting reforms broadly aligned with the Financial Stability Board's (FSB) Key Attributes of Effective Resolution Regimes (KAs). The legal framework was amended with the aim of resolving globally systemically important banks (G-SIBs) in an orderly manner, without systemic disruption or exposing public money to losses.

13. Despite restructuring and deleveraging, it is unclear how the Swiss authorities could handle TBTF banks if problems were to re-emerge. Since 2008, UBS has deleveraged its balance sheet by more than 40 percent. CS has shrunk by 21 percent. Nevertheless, their balance sheets still amount to multiples of the output of the Swiss economy, 2.3 times GDP against a peak at 4.6 times GDP. They have some of the lowest ratios of risk-weighted assets to total assets among major banks (i.e., high leverage).

14. Developing viable resolution strategies for the G-SIBs is a work in progress. Both banks have announced operational and structural reforms which aim to preserve systemic operations in Switzerland in the event of the banks' failure. Key host jurisdictions are also seeking to enhance the robustness of the overseas operations of these banks. FINMA has issued a position paper which sets out the potential benefits of a "top down" (TD) or "single point of entry" strategy compared to ring-fencing of resources in different jurisdictions.[2] Under a TD strategy, loss absorbing debt would be bailed-in and capital and liquidity streamed down to entities under stress within the group, including overseas. Among other reforms, the following would be required to make this viable in practice:[3]

- Sufficient loss-absorbing debt would be needed at the point of failure. This would need to be of sufficient maturity so as not to roll off prior to bail-in. It may also need to be structurally subordinated (e.g., issued out of a holding company) to senior debt which for operational or systemic reasons may be difficult to bail-in (e.g., derivatives, uninsured deposits, interbank funding).

- Currently, most of the G-SIBs' senior debt is issued under foreign law, and would need to be issued under Swiss law or have contractual provisions which give effect to the Swiss bail-in powers.

- Intragroup arrangements (e.g., cross guarantees) would also be needed to transfer group losses, including in group entities in other jurisdictions, to the entity which issued the debt.

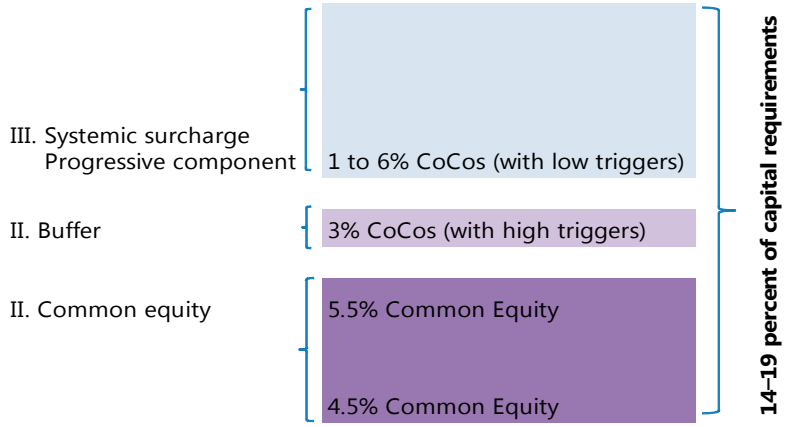
15. The authorities should continue to work actively with the banks and the key host authorities to finalize viable resolution strategies. Pursuing both TD and "bottom up" (BU) strategies in tandem might have benefits, but could be costly. It has been recommended that the authorities quantify the potential costs and carefully sequence necessary reforms to ensure that they are robustly implemented and that cooperation agreements can soon be signed with the key host authorities.

16. High capital buffers are crucial to support the Swiss brand in wealth management and also provide protection for TBTF resolution and limit leverage. CoCos provide a critical add-on to common equity (Figure 3) although more transparency on risk-weighted asset calculations should also be provided to the public to restore confidence in banks' internal models.

[2] http://www.finma.ch/e/aktuell/pages/mm-pos-sanierung-abwicklung-20130807.aspx

[3] These issues are not unique to Swiss banks applying a TD strategy.

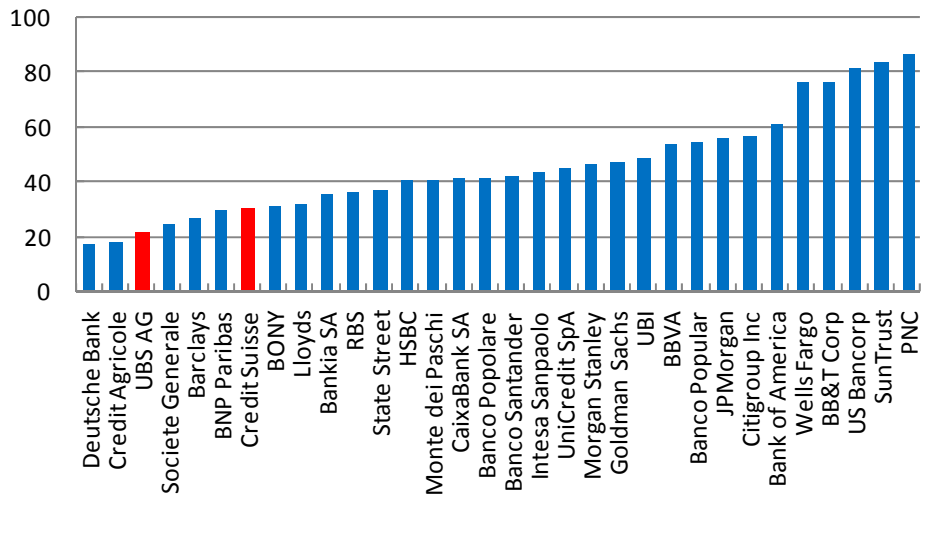
Figure 3. Switzerland: The Swiss TBTF Capital Regime (Phased-in until January 1, 2019)



Source: IMF staff calculations.

17. The leverage ratio needs to be strengthened above Basel minima (Figure 4). While Switzerland was one of the first countries to impose a leverage ratio, and has a timetable for implementation more ambitious than anticipated under Basel III, its method of calculating the ratio does not guarantee an outcome that is comparable with Basel, given the inclusion of assets that would be classified as Tier 2 under Basel III. In any case, Switzerland's position as home of two G-SIFIs indicates that, as with regards to capital requirements, there should be additional buffers on leverage.[4]

Figure 4. Switzerland: Risk-Weighted Assets/Total Assets (As of Sep. 2013)



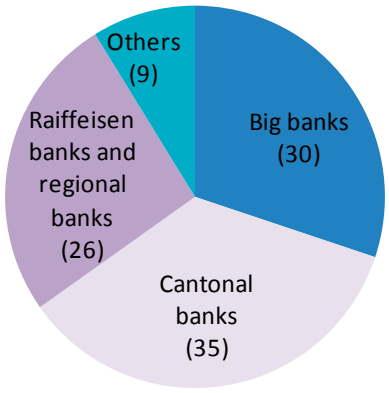
Source: Bloomberg.

[4] In April 2014, the U.S. supervisors called for a supplementary leverage buffer for US G-SIFIs.

C. Cantonal, Raiffeisen, and Private Banks

18. Switzerland has, in addition to its two major banks, other significant commercial and private banks. These comprise three main categories: (i) cantonal banks, largely owned by local authorities (cantons); (ii) cooperatives (Raiffeisen) and regional banks; and (iii) private and wealth management banks. The first two categories are "domestically oriented" banks (Figure 5).

Figure 5. Switzerland: Market Shares in Domestic Mortgage Loans (In percent)



Source: SNB and IMF staff calculations.

Domestically oriented banks

Asset quality

19. Domestically oriented banks have built up significant risk to mortgage markets and show increasing signs of interconnectedness. Their exposure to mortgage loans in Switzerland is close to nine times their equity capital, making them vulnerable to a real estate price correction and interest rate risk (Swiss National Bank (SNB, 2013).

Governance

20. Political appointments in cantonal banks weaken bank governance. Cantonal banks are subject to FINMA's supervision and operate under the same corporate governance regulation that applies to other banks, including in terms of board member requirements ("fit-and-proper" test). Since the Swiss banking crisis of the 1990s and the failure of several cantonal banks, several cantons have depoliticized the boards of directors (BODs) of their banks. However, in several large cantonal banks, appointments continue to be subject to political influence (e.g., boards are elected and removed by cantonal parliaments, and party affiliation plays a role). Remedial measures could include nominating expert committees that select candidates, strengthening the rules for independent board members (no party affiliation), the regime for incompatibilities (no political mandates), and improving market discipline by inviting representatives of the minority shareholders.

21. Some cantonal banks have become larger than their guarantor, raising doubts about the credibility of their guarantees. Many cantonal banks are backed by explicit guarantees from the cantons. The funding advantage can incentivize risk-taking behavior and support international expansion. In some cases, those guarantees may put the local finances at risk, as the guarantee accounts for a multiple of the cantonal GDP (Zurich, Luzern, and Basel Stadt). Cantons should be encouraged to phase guarantees out**.**

22. In the large financial cooperatives, certain governance aspects can also be problematic. Switzerland contains large systemic cooperative groups (in aggregate the third largest bank, by size) that apply caps on ownership and voting rights, which reduces members' ability to exert effective oversight over management and hinders access to external capital. Capital ratios of this category of bank have remained stable or declined over the period. These banks have pursued a very high pace of real estate lending growth since 2008, exposing them to any falls in the Swiss housing market

Private banking

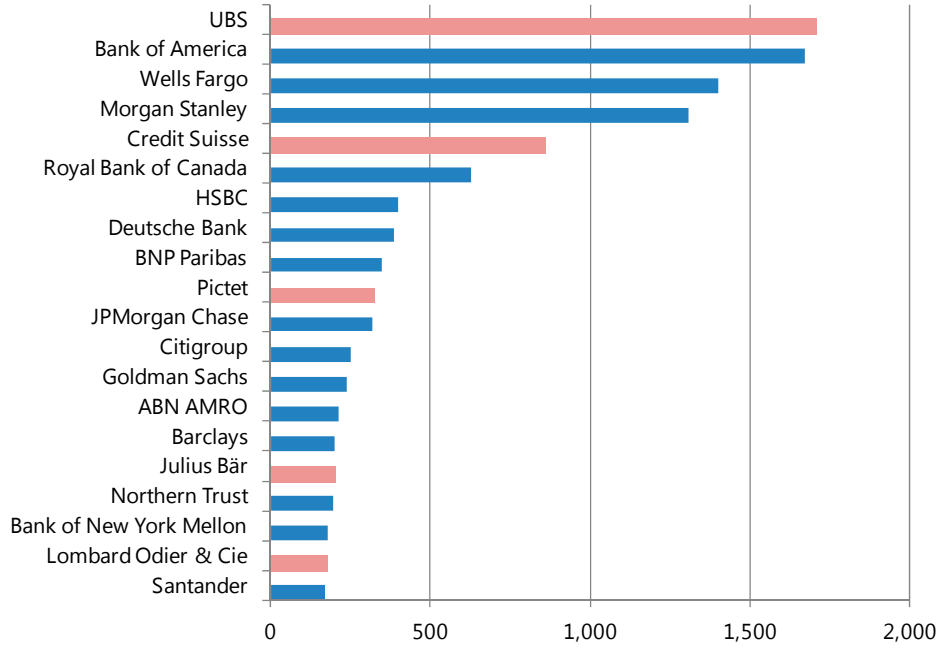
23. Private banking is a key element of the Swiss financial system. Switzerland's financial institutions leads in terms of assets under management worldwide. UBS and CS have the first and fifth largest value of assets under management of any bank in the world, respectively (Figure 6). The Swiss Bankers' Association reports that in off-shore private banking.[5] Switzerland ranks first, before Hong Kong, Singapore, and the United Kingdom, managing one-quarter of the world's wealth. Private banking accounts for about half of the Swiss banking sector's total revenues.

24. The business model of private banking is challenged by the uncertainties related to the Swiss banking secrecy laws. Fourteen Swiss banks are under investigation by the U.S. Department of Justice (DoJ). For those not yet under investigation, the U.S. authorities proposed non-prosecuting agreements (August 2013), with substantial fines (up to 50 percent of assets under management). Going forward, the new compliance requirements (U.S. Foreign Account Tax Compliance Act), the withholding tax on Swiss-based accounts being agreed with several European countries, and the expected automatic exchange of information among tax authorities may reduce the attractiveness of Swiss offshore accounts.

25. The authorities should assess the systemic risk in private banking and ensure that the weakest ones run off smoothly. Systemic risk arising from future legal procedures by the DoJ, whether direct (impact on solvency) or indirect (reputational risk), needs to be quantified and buffered. The authorities should examine the possibility of similar follow-on initiatives by other countries, and develop a financial sector strategy to ensure a smooth consolidation of the sector. Some consolidation has already started. Several banks surrendered their banking license to focus purely on asset management, or merged into larger banking groups (e.g., Wegelin).

[5] It is hard to obtain consistent cross-country measures of private banking. In Switzerland, the greatest part of assets under management relate to private banking.

Figure 6. Switzerland: Global Top 20 Banks by Assets Under Management (In billions of U.S. dollars)



Source: Scorpio Partnership, Global Private Banking Benchmark 2013

FINANCIAL SECTOR RESILIENCE

A. Banking Sector Stress Test

26. Three adverse scenarios were considered (Table 2): first, a re-intensification of stress in the euro area periphery, accompanied by the resumption of "safe haven" inflows into Switzerland, triggering a reassessment of the existing exchange rate floor; second, a severe global recession, triggered by the disorderly unwinding of unconventional monetary policies (UMP), affecting global financial markets and the global economy; and finally, a correction in the domestic real estate market, emulating the conditions observed during the house price correction during the early 1990's.

27. Stress tests covered the majority of the Swiss banking system. TD balance sheet stress tests were conducted by the authorities on all licensed banks, and by the IMF FSAP team on 30 representative banks (about 85 percent of the system's total assets). These stress tests were complemented by BU stress tests conducted by the two large banks, which also covered other risk factors, including credit, market, contagion (through interbank exposures), liquidity, funding, and operational risk.

28. No bank-by-bank supervisory data were provided to the mission, owing to legal constraints. Hence, IMF FSAP stress tests were conducted using publicly available data and proxies estimated by the staff at an aggregate "group" level, which limited the confidence that could be attached to any institution specifically.

Table 2. Switzerland: Macroeconomic Scenarios for the Stress Tests of the Banking Sector

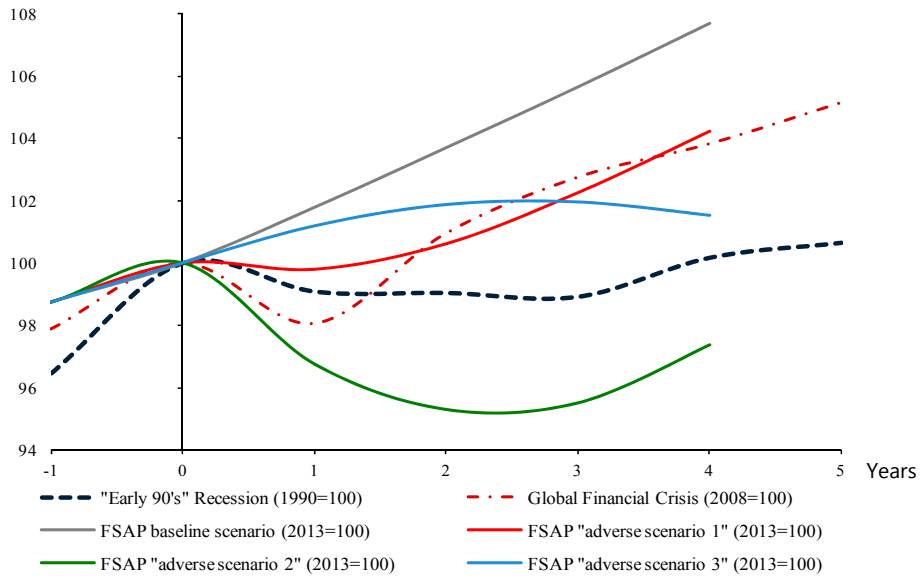
The stress tests involved four scenarios: a baseline scenario (based on recent Article IV projections), and three alternative "stress" scenarios. "Adverse Scenario 1" assumes an intensification of stress in the euro area periphery, while the core countries continue to muddle through. Switzerland is seen as a safe haven, and capital inflows intensify. The SNB "recalibrates" the exchange rate floor, and allows the exchange rate to "overshoot" (reaching parity to the euro in 2014), before returning to the current levels toward the end of the stress test horizon.

"Adverse Scenario 2" assumes there is a severe global shock, perhaps caused by the disorderly unwinding of UMP. The global economy is adversely affected in tandem with global financial markets. The mispricing of risk assets translates into a broad-based correction in valuations. Real GDP growth falls sharply owing to Switzerland's (real and financial) linkages to the rest of the world.[1]

Finally in "Adverse Scenario 3" there is a significant correction in residential house prices, of a magnitude in line with that seen in the 1990's, potentially triggered by a rise in real interest rates.

The behavior of macroeconomic variables was quantified using historical trends and empirical relationships, and based on satellite models. In Adverse Scenarios 1 and 2 real GDP growth and exchange rate assumptions are the main drivers of all other variables in the projections. In Adverse Scenario 3, the assumed paths for house prices and the exchange rate are the main drivers, while other variables react to them.

Switzerland: FSAP Stress Test Macro-Scenarios in a Historical Context (Switzerland: Real GDP Level)



All scenarios were fine-tuned based on discussions with the authorities.

Projections for global macroeconomic variables, including those of Switzerland's main trading and financial partners, were constructed by the IMF's Research Department (RES), using their own models, consistent with the adverse macro-scenarios in the WEO), and scaled using the projections for the Swiss domestic macroeconomic variables.

Source: IMF staff calculations.

[1] This economic scenario is more severe in terms of losses in the level of output than that experienced in Switzerland during the GFC (2008–09) and the recession of the early 1990's (see figure above).

Solvency of the banking system

29. Stress test results suggest that the banking system as a whole is sufficiently capitalized, although the results for the two large banks are sensitive to the definition of capital (Figure 7). Using the current Core Tier 1 capital definition (i.e., allowing for the phase-in transition period embedded in Basel III rules) as starting point, these banks' capital ratios comfortably exceed capital requirements under all scenarios, and capital does not fall below the 7 percent threshold. However, under the most severe macroeconomic scenario (Adverse Scenario 2), using the "fully loaded" common equity tier 1 (CET1) capital 2019 definition (under Basel III), capital ratios could fall below the 7 percent threshold.[6] These results suggest that the systemic banks are well placed vis-à-vis the introduction of Basel III, but should continue decisively with their capital build-up to further enhance their resilience (Figure 8).

30. Stress tests also show that capital ratios are broadly adequate for domestically oriented and small banks. Nevertheless, the lack of access to data at the individual bank level means that bank specific losses may be underestimated. Moreover, these banks face additional risks, including litigation from the U.S. tax authorities and issues related to their corporate governance that cannot be addressed within the stress test framework.

Liquidity of the banking system

31. The banking sector benefits from high liquidity, with almost all banks satisfying the liquidity coverage ratio (LCR) requirement in Swiss francs. Nearly all banks exceed the 100 percent mark for the LCR, in large part due to high deposits at the SNB. Over the medium term, banks would need to substitute these central bank deposits with other sources of high-quality liquid assets (HQLA). Meanwhile, average LCRs in euro and U.S. dollars remain fairly low, with several small banks showing outflows over the next 30 days, while essentially having zero HQLA in those currencies.[7] Overall, prudential liquidity norms need to take into account the limited supply of Swiss franc-denominated Level 1 liquid assets (i.e., Swiss government bonds).

B. Insurance Sector Stress Test

32. Stress tests were conducted to assess the resilience of the insurance sector. Solvency stress testing, using the three scenarios defined in Section A, was conducted by the insurance companies and evaluated by FINMA and the IMF staff. These solvency stress tests were complemented with sensitivity analysis of an extreme, natural catastrophic scenario for non-life insurers and a pandemic scenario for life insurers. In addition, sensitivity stress testing with respect to interest rate and real estate price, as well as market-wide liquidity stress testing, was carried out (see technical note on insurance).

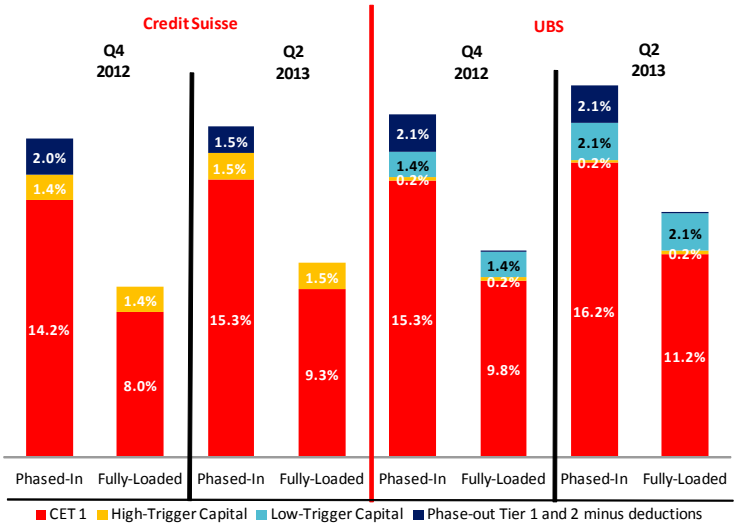
[6] From a transitional capital viewpoint, a CET1 ratio of 7 percent is considered to be a trigger level for recovery measures, and thus used as a trigger level for high-trigger CoCos.

[7] Nevertheless, average LCRs in euro and U.S. dollars *without inflow cap* are around 109 and 88 percent, respectively. Smaller banks tend to cover their outflows with inflows (also from deposits at larger banks) instead of HQLA.

Figure 7. Switzerland: Capital Measures of Large Banks

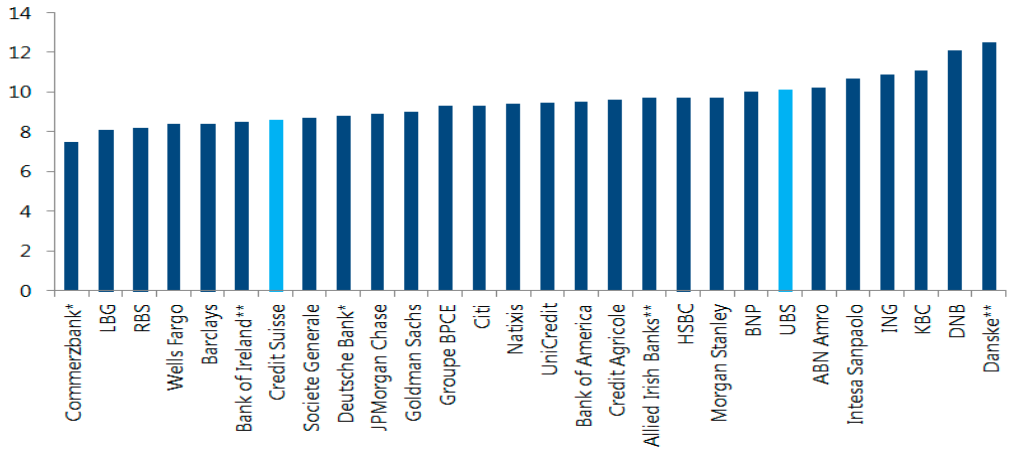
The figure below shows CET1 capital ratios of the large Swiss banks according to two different capital definitions, the current "phased-in" regulation and the Basel III "fully loaded" regulation. While capital ratios increased between 2014:Q4 and 2013:Q2, fully loaded capital ratios are well below phased-in ratios.

Phased-In and Fully Loaded CET1 Capital Ratios
(In percent of risk-weighted assets (RWA))



A comparison of fully loaded CET1 capital ratios of global banks as of 2013:Q1 shows that almost all banks were in the range of 8 to 11 percent, with UBS being above the average of 9.5 percent and CS being below the average.

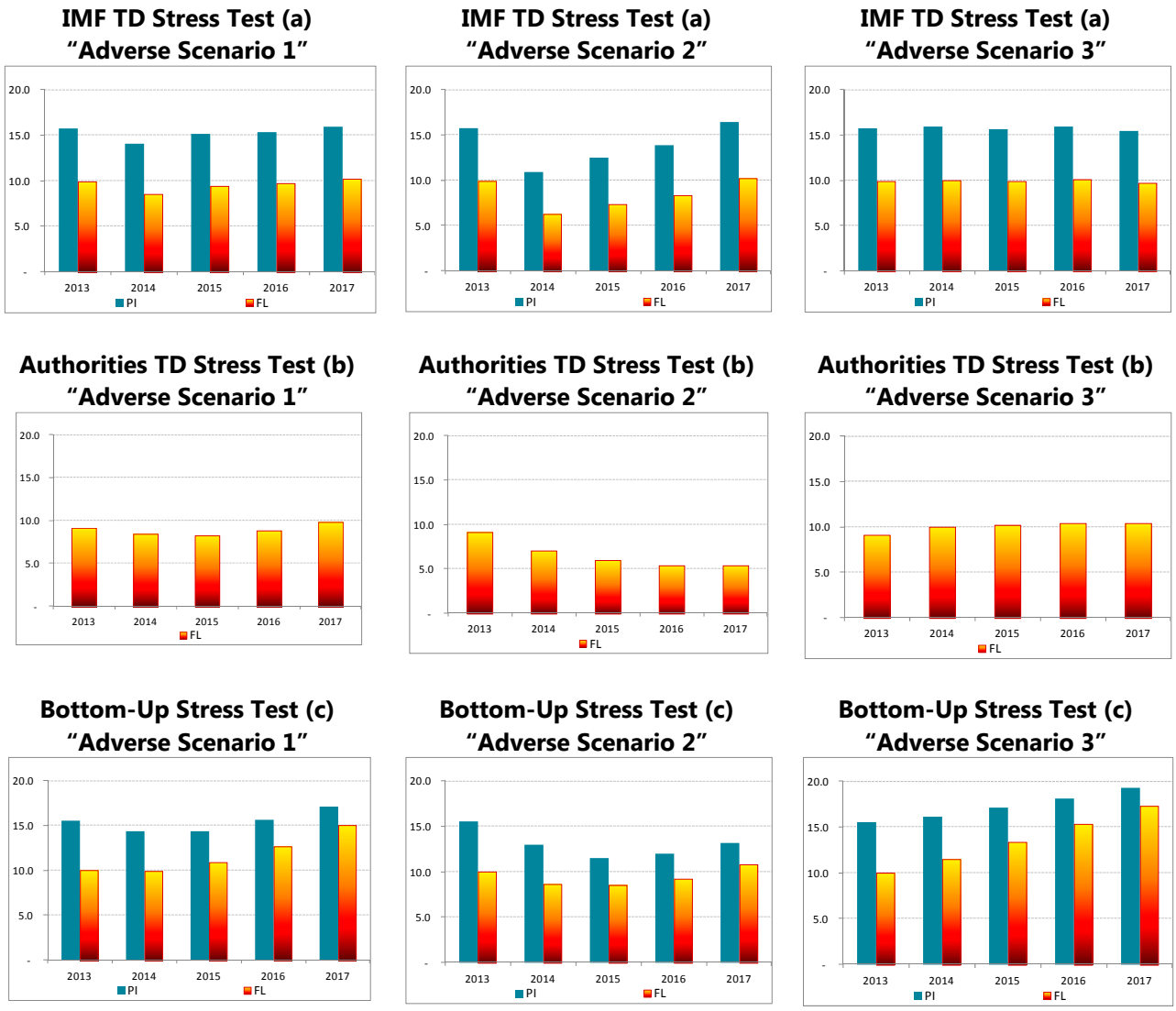
Fully Loaded CET1 Capital Ratios as of 2013:Q1
(In percent of RWA)



Source: Ratios shown as disclosed by banks; Banco Bilbao Vizcaya Argentaria (BBVA) and Banco Santander did not disclose fully loaded ratios. Banks may apply different adjustments based on individual interpretation of Basel III requirements. Ratios may also vary due to different discretionary accounting methods.

*Commerzbank and Deutsche Bank raised €2.5 billion and €2.96 billion of equity. As a result, their ratios will increase to 8.4 percent and 9.5 percent.
**Ratios as of end-2012.

Figure 8. Switzerland: Banking Sector Stress Test Results—Large Banks CET1 Ratio (In percent of total RWA)



Source: Authorities and IMF staff calculations.

Notes:
"PI" denotes the use of CET1 capital allowing for the "phase-in" transition period embedded in Basel III rules.
"FL" stands for "fully loaded" CET1 capital, using the 2019 definition under Basel III rules.

(a) IMF TD stress tests carried out using both "phased-in CET1" and "fully loaded CET1" (2019 definition).
(b) Authorities TD stress tests carried out using "fully loaded CET1" (2019 definition).
(c) Banks' BU stress tests carried out using both "phased-in CET1" and "fully loaded CET1" (2019 definition).

Differences among these results are due to differences in data inputs and granularity, estimated parameters and elasticities, selection of key drivers of risk parameters and their corresponding sensitivities, and modeling framework and methodologies, among other factors. In particular, different stress tests yield similar results for the years 2014 and 2015 (when the shocks occur within the macroeconomic scenarios); however, these tend to differ in the outer years (2016–2017). This is mainly due to differences in the income elasticities and the fact that authorities tend to model RWAs more smoothly (i.e., with longer lags) than the RWAs modeled by the FSAP team, which are directly linked to contemporaneous changes in risk parameters (e.g., probabilities of default (PDs) and losses given default (LGDs)), which are highly dependent on current conditions.

33. The strong initial solvency position of the non-life insurers allows them to withstand the three stress scenarios. The solvency stress test covers over 60 percent of the non-life insurance market. For non-life insurers the global shock scenario is the most severe, resulting in the reduction in their solvency ratio of up to 46 percentage points in the short term or 76 percentage points for one insurer in the medium term. Notwithstanding the large impact that the stress scenarios have on the available risk capital of the non-life insurers, their strong starting position, an average ratio of 230 percent, is sufficient to allow all five insurers to maintain solvency levels above 100 percent.

34. Some life insurers will require substantial capitalization under the most severe scenarios. The stress test covered 80 percent of the market. The weaker starting solvency position of the five life insurers means that applying the stress scenarios on their solvency positions results in one entity dropping in its solvency position to close to half of the required solvency ratio. For three of the five insurance companies the solvency ratio drops below the 100 percent requirement in at least one of the medium term shock scenarios.

35. Search for yield, reflected in increased holdings of lower-quality corporate bonds in the portfolios of some life insurers, appears to have weakened resilience to spread shocks. Exposure to the spread risk is significant for at least one large life insurer. The two-year global shock scenario that includes a spread widening around 260 basis points for lower-rated bonds effects a reduction of over 130 percent in the solvency ratio of one insurer. Other life insurers are also affected by this shock, with reductions in their solvency ratio of over 70 percent.

36. The interest sensitivity test shows strong preparedness in only one insurer. A relatively mild parallel downwards shift of the yield curve by 100 basis points results in capital hits ranging from 6 percentage points to 59 percentage points for the five life insurers. Sensitivity to non-parallel interest rate moves ("twist") shows a more varied picture, with the impact among the life insurers varying from capital gains of 7 percentage points to a loss of 8 percentage points.

37. The effect of the domestic crisis scenario is minimal, and the liquidity risk does not seem high for insurers. The shocks on the mortgage portfolios of life and non-life insurers have basically no effect, with drops in the risk-based capital of less than two percentage points. This is probably a reflection of the insurers' reduced exposure to this asset class and also of the requirement of having a LTV ratio of 80 percent or below on the granted mortgages. Liquidity risk does not seem high for insurers under current and stressed conditions. Since insurers hold a large share of their assets in the form of Swiss government bonds, access to liquidity within a few months, as required in this exercise, was indicated not to be a risk.

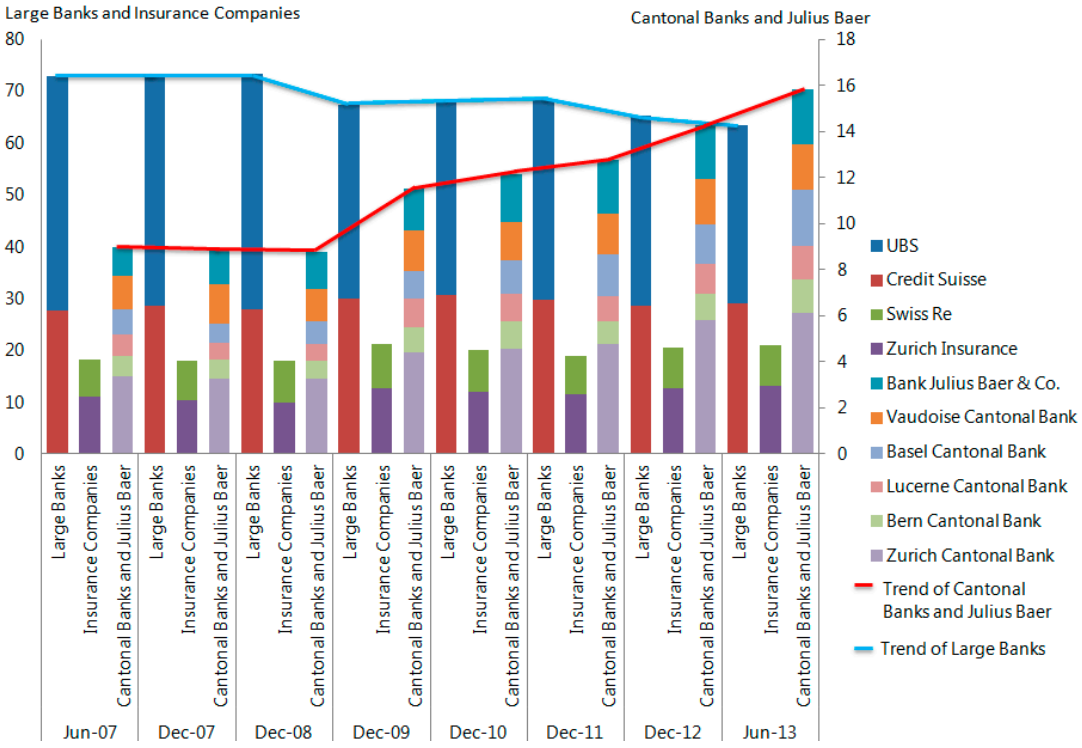
SYSTEMIC RISK SOURCES AND MITIGATION

A. Contagion and Systemic Risk Sources

38. Tests of contagion indicated that systemic risk originating in domestic banks is increasing, while other contagion risks are flat or declining (Figure 9). Various measures of financial stability, contagion risks, and systemic losses were quantified. The analysis of domestic

contagion involved the two large banks, two large insurance companies, five cantonal banks, and an important bank specialized in securities and asset management. The analysis of international contagion included both Swiss and international G-SIFIs.

Figure 9. Switzerland: Marginal Contribution to Systemic Losses of Swiss Financial Institutions (In percent)



Source: IMF staff calculations.

Cross-financial sector contagion within Switzerland

39. Contagion risks arising from direct interbank exposures in Switzerland appear to be contained. Analysis covering the entire Swiss banking sector and assessing the impact of a hypothetical default of any one Swiss bank on the other banks shows only moderate effects, consistent with the prudential restrictions derived from the present large exposure rules. However, a few small private banks and banks specializing in asset management appear somewhat vulnerable. This analysis is limited since it only takes into account direct interconnectedness as measured by interbank exposures, while indirect linkages due to exposures to common risk factors are not covered.

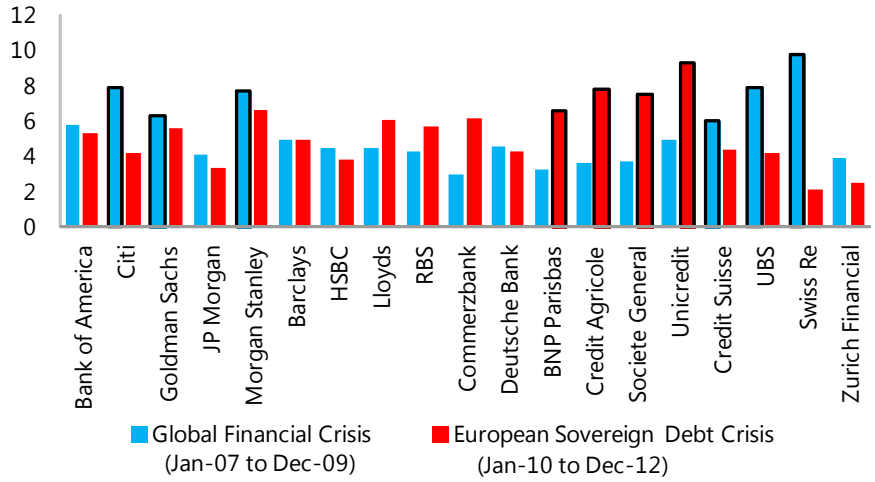
40. Systemic risk originating in domestically oriented banks is increasing. Market-based financial stability indicators, the marginal contribution to systemic risk (MCSR), and the Vulnerability Index (VI) suggest a heightened increase during the GFC in systemic risks from the

large Swiss financial institutions.[8] The MCSR for the large Swiss banks is still significant, due to the size of these institutions in the system, although this measure has decreased for one institution and remains stable for the other. In contrast, systemic risk from the domestically oriented banks seems to be increasing, many having increased significantly in size and having large exposures to real estate (Figure 9). Moreover, noticeable falls and increased volatility in some banks' stock prices can be observed, likely triggered by a number of concerns, including U.S. investigations regarding tax avoidance.

Vulnerabilities due to interconnectedness among Swiss and foreign G-SIFIs

41. Market-based indicators show that contagion between Swiss and foreign SIFIs have decreased (Figure 10). The vulnerability of Swiss G-SIFIs to contagion from other G-SIFIs was relatively high at the outset of the GFC. Uncertainty related to the risk quality of assets of these institutions (e.g., mortgage-backed securities) and, in some cases, high dependence on wholesale funding, led to the increase of their credit default swaps (CDS) spreads and other market-implied credit risk measures. However, during the height of the euro area periphery stress period, Swiss G-SIFIs exhibited lower vulnerability than those of other countries (e.g., those with larger holdings of euro area periphery sovereign debt). Nevertheless, owing to their large exposures abroad, the Swiss G-SIFIs remain susceptible to external factors. Decreased vulnerabilities are consistent with recent increases in capital ratios (Figure 10).

Figure 10. Switzerland: Contagion Risk Analysis of Swiss and Global G-SIFIs (In percent)



Source: IMF staff calculations.

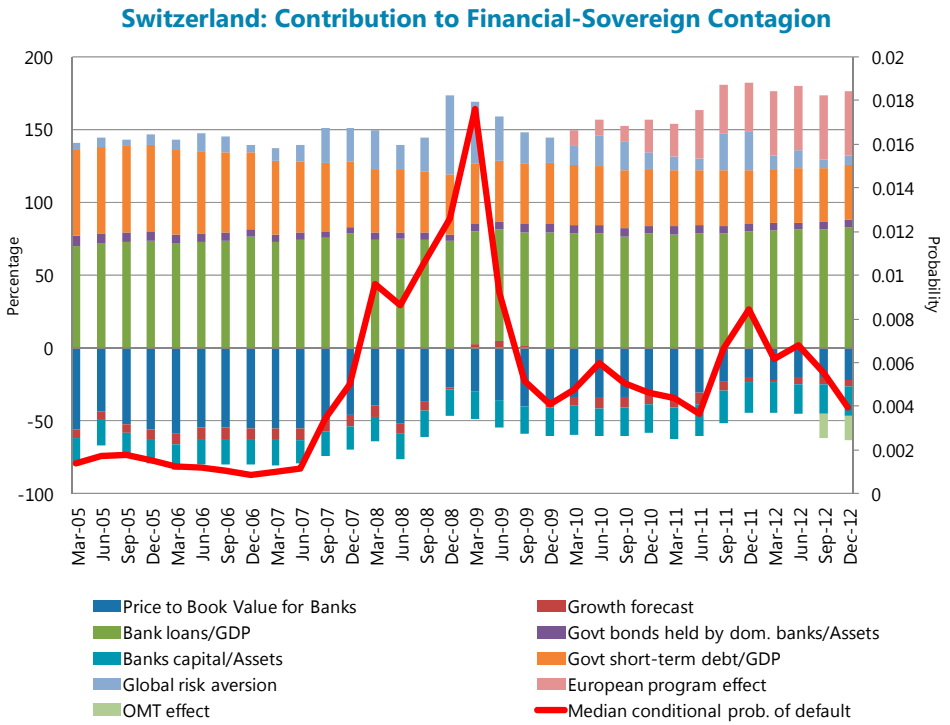
[8] Contagion and systemic risk were assessed by the VI and the MCSR. The VI indicates the probability of distress of a bank conditional to distress on other banks in the system. The MCSR from an individual bank indicates the percentage contribution to systemic losses attributable to the individual bank. The MCSR takes into account (i) the interconnectedness (direct and indirect) of the banks with other banks in the system and (ii) the relative size of the financial institution.

Sovereign-financial interlinkages

42. Contagion from banks to sovereigns has decreased significantly in recent years. It reached its peak towards the beginning of 2009, reflecting the simultaneous deterioration of banking and economic fundamentals and increased risk aversion (Figure 11). Recently, contagion from banks to sovereigns has decreased, owing to the strengthening of capital buffers, the outright monetary transactions (OMT) facility, and lower risk aversion.

Figure 11. Switzerland: Swiss Financial-Sovereign Contagion

The systemic risk analysis was complemented by an analysis of financial sovereign contagion. This was characterized by the PD of the Swiss sovereign, conditional on distress of its largest domestic financial institutions falling in distress, shown in the figure below. IMF staff used a panel model on quarterly data between 2005:Q1 and 2012:Q4 to assess the relevance of underlying structural characteristics in explaining financial-sovereign contagion (a positive bar contributing positively to the conditional probability, while a negative bar causes a reduction).



The analysis shows that during the GFC the increase in the financial-sovereign contagion was mainly associated with increased market price of risk, a deterioration of the price to book value of Swiss banks, and deterioration of the growth forecast. Exposure to credit risk seems to be a significant factor; however, the relative contribution of this factor has not varied significantly. More recently, in the aftermath of the European sovereign debt crisis, Swiss financial-sovereign contagion has decreased significantly, and the factors explaining it have changed, with the most significant, on the negative side, being the European sovereign crisis. On the positive side, banks' capital seems to have a significant impact, while decreased risk aversion together with the introduction of OMT was an important downward driver during the second half of 2012.

B. Macroprudential Policy Framework

43. Macroprudential powers and responsibilities are split across agencies. The SNB has a financial stability mandate in the context of monetary policy, and FINMA has responsibility to protect the functioning of financial markets. There is a memorandum of understanding (MOU) between FINMA and the SNB. The federal government, with significant regulatory powers, also has an important role in regard to financial stability policies, and there is a MOU between the Federal Department of Finance (FDF), FINMA, and the SNB.

44. Developments in real estate and mortgage lending are important macroprudential concerns. Very loose monetary policy has driven interest rates down to historically low levels, bringing total mortgage debt above 140 percent of GDP. In parallel, housing prices have been rising, particularly in certain segments of the market. Long standing tax policies to promote home ownership have likely amplified the real estate boom.

45. The authorities have taken measures to address these risks. FINMA adopted new requirements for mortgage financing, drawn up by the Swiss Bankers Association (SBA), as minimum regulatory standards in effect since mid-2012 (including down payment and repayment time). The Federal Council backed these measures by requiring a risk-weight of 100 percent for non-compliant loans and, from the start of 2013, an increase in the risk weight for the part of mortgages exceeding 80 percent of the property value. In 2013, FINMA tightened rules for risk-weighting mortgages for banks applying an internal ratings-based approach. Finally, a CCB was introduced, targeting residential property by requiring banks to hold 1 percent of their associated risk-weighted positions as extra capital by end-September 2013.[9] A further increase of 1 percent was announced in January 2014, effective June 2014.

46. Further tightening and additional tools to address potential imbalances in the housing and mortgage markets are needed. Demand has been driving the increase in real estate lending and residential house prices. Thus macroprudential measures focused on tackling demand could complement supply-focused measures. Recent measures seem to have had insufficient effect. House price increases have decelerated somewhat, but mortgage lending growth continues and quantitative lending standards show little improvement. Existing measures, partly based on self-regulation, must be fully enforced to materially change lending standards (including by strengthened guidance to auditors and enhanced own onsite inspections), and further tightening seems warranted. Absent clear effects the authorities should issue regulations targeting the demand side, for example LTV and DTI limits. Targeting affordability is especially important; the financial status of households should be monitored closely, likely facilitated by increased data collection. Mortgages for commercial purposes deserve increased attention, and the systemic risk from banks' exposures in areas where large real estate price corrections appear especially likely must be actively contained. Tax incentives for taking on large mortgages should be reconsidered.

[9] After consulting FINMA, the SNB can submit a proposal to the Federal Council requiring banks to hold a CCB in the form of CET1 capital at up to 2.5 percent of their total risk-weighted positions in Switzerland.

47. Reforms of the framework could be considered. While the present structure seems to have worked well, no clear macroprudential mandate is assigned to any institution. Powers over specific policy instruments are clear, but not where the overarching responsibility for the financial stability outcome lies. In a medium-term perspective macroprudential arrangements should be reviewed, giving consideration to placing responsibility and powers for macroprudential policies with one institution or committee. Transparency and accountability could be strengthened by better highlighting the cross agency work to the public. Regarding transparency, the draft Swiss Financial Market Infrastructure Act (FinfraG) legislation strengthens information access and exchange for the SNB and the FDF, which is welcome.

FINANCIAL SECTOR OVERSIGHT

A. Banking

48. Switzerland has a unique supervisory process, which utilizes extensive resources of audit firms on FINMA's behalf. FINMA now has a high level of compliance with BCPs. The capital adequacy framework is robust: Basel III rules have been adopted, and significantly higher requirements are applied to TBTF banks. The licensing process is actively used, and the regime for transfer of ownership is well developed. FINMA makes extensive use of its general corrective and remedial powers to achieve prudential results. Consolidated supervision is of high quality, although the legal framework in this regard should be enhanced.

49. FINMA's use of external auditors is understandable, enabling it to lever its expertise and take advantage of auditors' global networks. FINMA has materially enhanced supervisory processes and practices in the past three years to address identified deficiencies and approach the new intensity expected post GFC. This enhancement requires audit firms to be more forward-looking and effective in their work, adds capability for FINMA to do more supervisory work itself, and intensifies FINMA interventions.

50. However, the enhancement process started only recently, leaving some areas where BCP compliance remains weak. It requires heightened efforts in providing guidance to auditors, validating their works, ensuring consistency, and dampening possible conflicts of interest. Switzerland still has one of the most principles-based approaches to rules and guidance, remaining considerably focused on capital and liquidity metrics, and less on qualitative elements of risk management and internal controls. Further efforts are needed to enhance FINMA's ability to assess the quality and completeness of information coming from auditors and to put incentives on auditors to perform in a more consistent manner.

51. FINMA's oversight of auditors' work needs to be further enhanced to meet international standards. This requires increasing the ability for FINMA off-site staff to direct, monitor, and compare the audit work being done on their behalf. In particular, the risk assessments driving the supervisory process should be made more forward-looking, granular, and consistent across audit firms. Differences in banks' accounting practices (International Financial Reporting Standards (IFRS), U.S. Generally Accepted Accounting Principles (GAAP), and local GAAPs) should be rapidly

phased out. "Deep dive" onsite work by FINMA itself should be increased in frequency and depth, selectively assessing the quality of risk management, governance, and internal control systems on a proactive basis. FINMA staff should participate more frequently in foreign supervisory reviews of the major Swiss banks.

52. Although the institutional setup of FINMA is generally adequate, additional skilled resources are necessary. FINMA's onsite and off-site supervisory resources have been increased in recent years, but are now subject to a self-imposed headcount cap, which should be relaxed, in particular so that medium and small banks can be supervised with comparable intensity to the large banks. The responsibilities and objectives of FINMA that emphasize protecting creditors, investors, and insured persons, as well as ensuring proper functioning of the financial market, should be clearly stated in legislation as preeminent. FINMA has operational independence enshrined in legislation, and attention is given to avoiding any conflict of interest.

53. FINMA could improve the comprehensiveness of qualitative guidance. Guidance should be put in place regarding enterprise-wide risk measurement and risk management. While the supervisory and auditing process fills gaps on rules and guidance regarding credit risk management and provisioning, improved guidance and instructions to regulatory auditors could assist the consistency of their work. The recently enhanced liquidity framework should be complemented by a close dialogue with mid-size and smaller banks and with regulatory auditors to set clear expectations. The application of basic qualitative requirements of operational risk should be expanded, and operational risk should be incorporated in FINMA's supervisory rating system.

B. Insurance

54. The insurance industry in Switzerland is well developed, having among the highest insurance penetrations and expenditures per capita in the world. Insurance penetration is the fourth highest in the world with gross premiums of 14.1 percent of GDP, well above the EU average of 7.8 percent. Total premiums in 2012 amounted to Sw F 83 billion. Total assets of the sector are Sw F 460 billion or 15 percent of the financial sector assets, of which two-thirds correspond to life insurance. Two firms are responsible for 54 percent of the life insurance business, and the top 10 life insurers account for 97 percent of the market. The Swiss insurance groups write, on average, around 75 percent of their premiums outside Switzerland and over 50 percent of their assets are related to foreign business.

55. Significant regulatory reforms and increased supervision since 2003 have updated Switzerland's regulatory and supervisory regime for the insurance industry to levels consistent with international best practices. The Financial Market Supervisory Authority Act of June 22, 2007 (FINMASA), together with two related ordinances, serves as an umbrella law for sector-specific laws governing financial market regulation and supervision, and also established the integrated financial services supervisor, FINMA. The new insurance law, effective January 2006, and introduction of the SST have reoriented the regulatory focus towards risk-based supervision supported by a strong risk-sensitive solvency regime.

56. Supervision focuses on ensuring sufficiency of liquid assets to meet policy liabilities. Statutory accounting methods determine technical provisions and the value of assets on a prudent basis for "tied asset" purposes. Insurers (excluding reinsurers) are required to earmark and ring-fence assets designated as tied assets, subject to a liquidity test to back the technical provisions plus a risk margin. Policyholders have priority claims over the tied assets. The triple focus on the adequacy of technical provisions, liquidity and safety of tied assets, and the adequacy of capital forms the basis of FINMA's supervision.

57. FINMA supervision is particularly strong in quantitative analysis and group supervision, while risk management, internal control, and governance requirements are relatively new. FINMA has highly qualified staff. The granular and aggregated approaches towards solvency of a group are also commendable. The Swiss Qualitative Assessment (SQA)—designed to provide a comprehensive and in-depth understanding of insurers' governance, risk management, compliance, and internal controls environment and processes, and identify for each insurer areas of needed remediation—was first carried out in 2008 and covers all insurers.

58. The intensity of onsite supervision needs to be enhanced to complement FINMA's strong offsite supervision. FINMA has various ways to gather information and make assessments. As a result, its onsite inspections tend to be narrow in scope and, compared to some jurisdictions, less frequent. More in-depth onsite inspections would enhance FINMA's understanding of insurers' operations and facilitate more accurate risk ratings.

59. In order to maintain Switzerland's position as a global insurance center and reinsurance hub, enhancements are needed to the regulatory framework.

- FINMA's review of expanding public disclosure requirements should serve to bring Switzerland more in line with international standards.
- FINMA has yet to articulate specific rules on business conduct. The Swiss authorities should press on with the legislative effort to improve policyholder protection and enhance broker supervision.
- Requirements on the investments of reinsurers need to be strengthened. The lack of a requirement to have tied assets backing up reinsurance liabilities could weaken the asset quality of reinsurers as well as FINMA's ability to liquidate them.
- Branches of companies headquartered outside Switzerland and conducting only reinsurance business are exempted from supervision. FINMA is encouraged to more actively communicate its approach regarding supervision of these institutions.

Table 3. Switzerland: Insurance Sector Premiums and Assets, 2008–2012
(In millions of Swiss francs, units of Swiss francs for the density)

	2008	2009	2010	2011	2012
Gross premiums					
Life	32,372	32,180	32,651	32,760	33,484
Nonlife	52,537	51,717	51,007	46,712	49,876
Total	84,909	83,897	83,658	79,472	83,360
Assets					
Life	280,611	281,706	291,265	299,151	311,237
Nonlife	153,648	147,891	147,157	148,198	148,581
	434,259	429,597	438,422	447,349	459,818
Penetration*	15.0	15.1	14.6	13.5	14.1
Density**	11,183	10,775	10,630	9,990	10,372

Source: Authorities.

Note: Premiums correspond exclusively to domestic business. Only life and non-life assets are included.
*Measured as total premium as a percentage of GDP.
**Measured as total premium per capita.

60. FINMA modified requirements under the SST for 2013 to 2015. The Swiss authorities passed and implemented SST, a state of the art solvency regime, ahead of any jurisdiction. This test serves to properly assess the risks run by the insurers; its risk-sensitive provisions show, at an early stage, the negative effects of the low interest rate environment on the solvency ratio, which led the authorities to introduce temporary measures to dampen the effect. The temporary "anti-persistent low interest rate environment measures" (APLIEM) have been taken with care; however, they have reduced transparency and could delay supervisory actions. It is recommended to remove them, as scheduled, in 2016.

61. The lack of Swiss government bonds to match long-term liabilities of life insurers and pension funds could be a source of vulnerability. The Sw F 1 trillion of assets managed by life insurers and pension funds is disproportionate to the Sw F 80 billion outstanding bonds managed by the federal government. Liabilities are therefore matched by overseas assets, or assets of greater risk.

Table 4. Switzerland: International Participation of the Insurance Groups, 2012
(In millions of Swiss francs)

Top 10 Insurance Groups in 2012						
	Assets			Premiums		
	Consolidated	Domestic Operations*	% of Domestic	Consolidated	Domestic Operations*	% of Domestic
Baloise	73,527	32,873	44.7%	6,742	3,827	56.8%
Helvetia	42,497	28,407	66.8%	6,829	3,978	58.3%
Nationale Suisse	6,260	5,098	81.4%	1,512	1,050	69.4%
Mobiliar	15,648	15,648	100.0%	3,299	3,280	99.4 %
Swiss Life	163,401	84,894	52.0%	12,351	7,802	63.2%
Swiss Re	197,519	177,120	89.7%	24,661	409	1.7%
Vaudoise	11,627	4,960	42.7%	1,496	978	65.4%
Zurich Insurance Group	374,623	103,913	27.7%	49,408	4,842	9.8%
Total	885,102	452,913	51.2%	106,298	26,166	24.6%

*Total assets of regulated Swiss entities.

*Foreign branches of Swiss legal entities not included.

Source: Authorities.

62. Possible systemic risk from the insurance sector needs to be addressed, including through implementing the FSB's KAs as these come to be finalized for insurers. FINMA is host supervisor of globally systemic important insurers' (G-SIIs) subsidiaries and is expected to become the home supervisor of one G-SII as the designation methodology for reinsurers is completed in 2014. Preparation work has started for addressing the systemic risk that the presence of a G-SII in the jurisdiction creates. For colleges led by FINMA, emergency plans compliant with the standards of the International Association of Insurance Supervisors (IAIS) Principle 26 have been developed. These plans are regularly tested and improved. Using as guidance the recovery and resolution plans developed for banks, FINMA has requested and discussed recovery and resolution plans for the three largest insurer groups. These plans have already produced concrete actions which included dialogue with foreign supervisors regarding emergency situations.

C. Securities

63. Switzerland has made progress addressing the recommendations from the IOSCO assessment of the 2001–02 FSAP. Major achievements include establishing the Federal Audit Oversight Authority (FAOA) to supervise and enforce compliance with audit quality and independence requirements. The Collective Investment Schemes Act (CISA) has recently been revised and provides a strengthened framework for regulating and supervising the offering and management of collective investment schemes (CIS). Discussions about the regulation and supervision of independent asset managers are gaining momentum, and offers of unlisted securities and of some other currently unregulated products are to be regulated in the upcoming Federal Financial Services Act (FFSA). Switzerland is preparing to introduce a new legislative framework for operators of financial market infrastructures and exchanges. The FDF should ensure that these proposals are taken forward as soon as possible.

64. FINMA has further developed its risk-based supervisory system, applied to entities active in securities markets. Less systemic and/or less risky entities are subject to less intrusive supervision that continues to largely rely on annual audits conducted by auditors. FINMA is gradually increasing the intensity of its own direct supervision of the more systemic and riskier entities. However, the approaches taken across various FINMA divisions differ. For example, non-bank securities dealers are subject to relatively limited supervision, whereas other entities (such as fund management companies and CIS asset managers) are expected to become subject to more intrusive supervision. FINMA's own supervisory reviews largely remain to be introduced, apart from some thematic reviews conducted on banks' securities activities, such as investment banking and wealth management. FINMA should ensure that its supervisory approach covers all supervised entities with similar risk characteristics in a consistent manner and that supervision of the conduct of business of banks and securities dealers is enhanced.

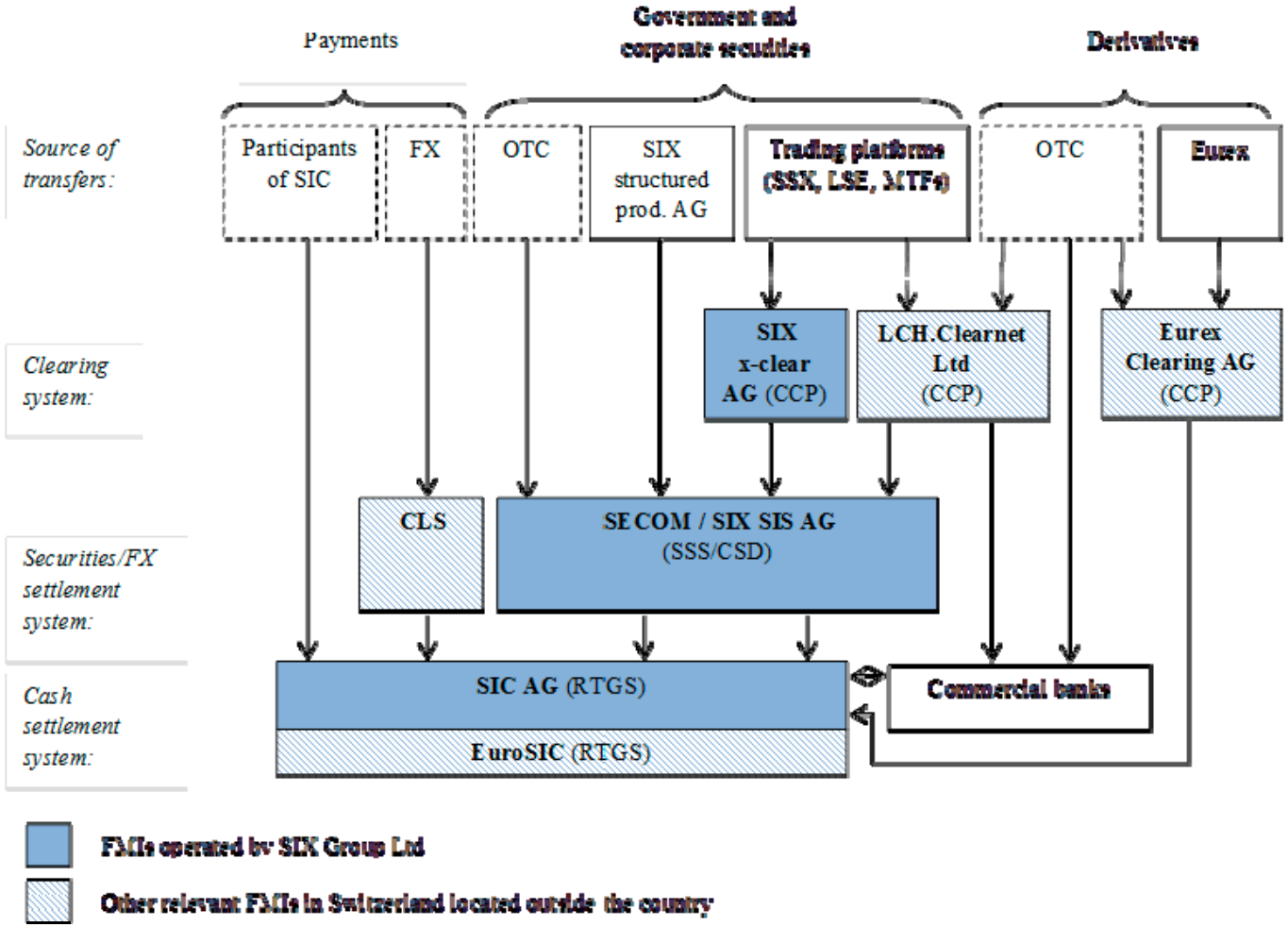
65. FINMA's enforcement powers have recently been enhanced through the introduction of specific prohibitions on insider trading and market manipulation. This enables FINMA to complement the enforcement of the more narrowly defined criminal market abuse provisions with the use of its administrative enforcement powers. Establishing cooperation with the Attorney General's Office, to whom the criminal enforcement powers were transferred from the cantonal prosecution authorities, has progressed well. Cooperation with the FDF Legal Services Department in other areas of criminal enforcement is more established, following the signing of an MOU in 2011. Nevertheless, the question remains as to whether the Swiss administrative and criminal authorities, as a whole, have sufficiently dissuasive sanctions at their disposal. For example, FINMA can address market abuse by unsupervised entities only through the issuance and possible publication of decrees, and orders for the disgorgement of profits. Therefore, the authorities could further explore the possibility of introducing the power to levy administrative fines.

66. The Swiss authorities will face a significant challenge in coping with the upcoming securities regulatory overhaul. The planned framework is likely to require assuming new tasks for the regulation and supervision of unlisted securities, financial market infrastructures, independent asset managers, and the banks and securities dealers' business conduct. New regulatory challenges will also emerge from the international regulatory agenda, including in regard to shadow banking. The authorities should assess the impact of all these changes on the resources and organization of FINMA, since they may not be sufficient to respond to the challenges ahead. This would also provide an opportunity to consider how best to strengthen conduct of business supervision more generally.

D. Financial Market Infrastructures

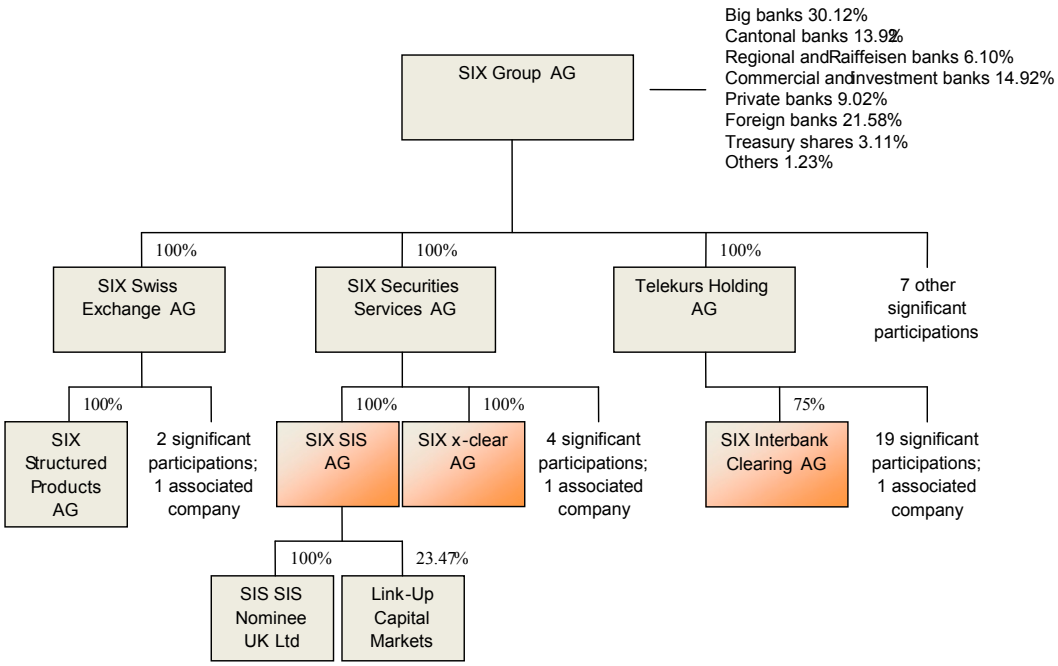
67. FMIs in Switzerland are well developed and stable. FMIs have operated smoothly for many years without substantial outages or other technical or financial problems. Figure 12 illustrates the roles of the various FMIs in Switzerland. The provision of FMI services is concentrated in one private entity, SIX Group AG, which operates SIC AG, SIX x-clear AG, and SIX SIS AG within separate legal entities. Figure 13 shows a simplified legal structure of SIX Group AG.

Figure 12. Switzerland: Landscape of Systemically Important FMIs in Switzerland



Source: IMF staff.

Figure 13. Switzerland: Simplified Legal Structure SIX Group AG, June 2013



Source: SIX Group AG.

68. FMIs in Switzerland are subject to appropriate and effective oversight and supervision by the SNB and FINMA respectively. Oversight and supervision are based on statutory law. The SNB oversees all payment, clearing, and settlement systems, and subjects systemically important FMIs to minimum requirements. FINMA supervises SIX x-clear AG and SIX SIS AG, which are licensed as banks.

69. Important progress has been realized in adopting the new principles for FMIs, but implementation is at an early stage. A major reform was implemented by the SNB in July 2013, through a revision of its National Bank Ordinance, translating the new international principles into national legislation and regulation. Parallel to this, the FDF developed legislation establishing a regulatory framework for over-the-counter (OTC) derivatives, including a revised regulatory framework for FMIs, to enter into force in 2015. Implementation of the new principles by the FMIs has only recently started, and the reform agenda is substantive. Implementation should include public disclosure of information according to the CPSS-IOSCO disclosure framework for FMIs.

70. The SNB and FINMA are encouraged to take a firm stance on the full implementation of the new principles. This is needed in all countries, but particularly in Switzerland given the continuous challenges faced by the authorities to ensure safety of FMIs in

an environment focused on efficiency and subject to competition. SIX's current organization does not necessarily provide the optimal structure for explicit support of public interest considerations. The board of SIX Group AG has to divide its attention between the FMIs and various other business activities that are mainly commercial. Also, the Central Securities Depository (CSD), and particularly the central counterparty (CCP), operate in a highly competitive environment. As collateral is costly, the CCP may face market pressure to compromise on certain features of its risk management framework.

71. The SNB and FINMA should upgrade their cooperation arrangements to handle crisis events effectively and promptly. The domestic cooperation arrangements work relatively well in normal circumstances, but the absence of a lead supervisor or overseer may prove problematic during crisis. The Swiss authorities should develop a dedicated crisis management framework, for instance under the umbrella of the FDF-FINMA-SNB MOU, indicating the roles, responsibilities, and potential tools to manage crisis events affecting the FMIs. The crisis management framework should be regularly tested and updated. Crisis arrangements should also be part of the MOUs with foreign authorities.

72. Although the FMIs' risk management frameworks are well developed, they have gaps. The following improvements are in particular recommended: (i) a realignment of risk management reporting lines to ensure the independence of the risk management functions of the CCP and CSD; (ii) the risk management framework should explicitly address interdependencies, such as risks that the group bears from participants active in more than one FMI or business area of the group; (iii) the establishment of a comprehensive liquidity risk management framework for the CCP and the CSD; (iv) the full contractual and operational implementation of segregation and portability arrangements for a participant's positions and collateral, and for policies regarding segregation and portability for a participant's client's positions and collateral at the CCP; and (v) development of a recovery plan for every FMI in line with ongoing international guidance ensuring continuation of critical operations in extreme circumstances.

E. Financial Safety Nets, Crisis Management, and Resolution Framework

Bank intervention and resolution framework

73. FINMA enjoys a broad range of early intervention and resolution powers. Clear criteria allow for the timely exercise of resolution powers, and the powers could successfully preserve systemic business functions. The resolution regime broadly aligns with international best practice but some enhancements are merited. A key weakness is the requirement to secure approval from a majority of a bank's creditors before resolving banks not previously designated as SIFIs. Such banks could however prove systemic under stressed circumstances, and having to consult creditors before acting could significantly worsen the risks.

The following reforms are recommended:

- Adopt the full range of resolution powers, without requiring creditor approval, for all banks.[10]
- Introduce explicit statutory powers to override shareholders' rights in order to effect a merger or acquisition and to write down debt.[11]
- Enhance bridge bank powers.[12]
- Issue guidance for resolution and recovery planning for banks not designated as SIFIs.

Official support

74. The regime does not explicitly establish arrangements for exceptional support. Nonetheless, the Federal Constitution allows in exceptional circumstances the implementation of extraordinary measures. Ex ante approval is required from Parliament's financial committee, for financial support of Sw F 500 million or above. Under its published policy, the SNB can provide Emergency Liquidity Assistance (ELA) to domestic banks, subject to sufficient collateral being available and the bank being deemed solvent (on which an opinion is sought from FINMA) and systemic. The SNB has undertaken significant preparations with the two large banks to enable it to take mortgages as collateral. It is recommended that the SNB review its framework and operational capacity to make ELA available at short notice to other banks, and review its communication policies to ensure that ELA could remain covert when required.[13]

Deposit Guarantee Scheme

75. Esisuisse is a privately run, ex-post funded, narrow pay box scheme. It cannot be used to support resolution measures, such as a transfer of deposits to another bank. Esisuisse must collect from its members the funds to pay out insured deposits within 20 days of a failure. A FINMA appointed liquidator is responsible for determining and making insurance payouts, with the aim (but not the obligation) to pay insured deposits within 30 days. In practice payouts have taken significantly longer. All licensed banks and securities dealers (including branches) in Switzerland are members, and all deposits booked in Switzerland up to Sw F 100,000 are

[10] Including the flexibility required by KA (5.1) to be able to depart from pari passu treatment of creditors for certain reasons.

[11] The bail-in powers are currently only set out in a FINMA ordinance, and not in primary legislation.

[12] The current modalities require the bridge bank to be owned by the failed bank, which may undermine creditor confidence.

[13] For example, the SNB should issue guidance on ELA collateral requirements.

preferred and insured.[14] Two deposit-takers with total Sw F 4.9 billion of eligible deposits, however, do not have banking licenses and are neither regulated nor members of Esisuisse.

76. The scheme is complex and aspects should be strengthened. The system-wide cap of Sw F 6 billion could create the impression that at times of stress some insured deposits would not be reimbursed.[15] Other features of the scheme, which may reduce the risk and cost to the members, are complex and difficult for depositors to understand. To mitigate the risk of contagion, depositors need to be confident that they will be reimbursed quickly and with certainty. For these reasons, and because of the procyclicality associated with ex-post levies, it is recommended that:

- A paid-in fund is introduced with a target level of funding based upon the failures of a number of midsize institutions, supplemented by back-up lending from the authorities.
- A fixed deadline is adopted for paying insured deposits, preferably within seven days.[16]
- At least six board members of Esisuisse should be independent of the banking industry.[17]
- The two exempted deposit-takers should become regulated members of the scheme.

77. Esisuisse's mandate should be widened to allow it to finance resolution measures. Without access to adequate funds, resolution powers may prove ineffective in practice. Sufficient good quality assets are unlikely to remain unencumbered on the balance sheet of a failed bank (e.g., to finance a transfer of deposits). A wider mandate should be accompanied by other reforms to ensure that Esisuisse could not incur greater costs than in liquidation, to remove active bankers from the governing bodies, and invest it with wider responsibilities and more resources.[18]

[14] Deposit insurance covers deposits booked in Switzerland only, whereas deposit preference extends to deposits in overseas branches of Swiss banks.

[15] Sw F 6 billion is equivalent to 1.4 percent of insured deposits and would cover the insured deposits of any individual bank failure, except for the ten largest banks.

[16] At least for initial payments, with full payout no later than 20 days. The timelines should be based on when insured deposits are reimbursed not when funding is available from Esisuisse.

[17] Currently most board members are active bankers, and most large banks are represented.

[18] Including to collect information from banks, directly effect payouts, and participate in the Financial Stability Committee.

Table 5. Switzerland: Deposit Measures Adopted During the GFC

- The deposit insurance limit was increased from Sw F 30,000 to Sw F 100,000.
- The cap on maximum contributions from Esisuisse members was increased to Sw F 6 billion, and members were required to hold 50 percent of their potential contribution as extra liquidity.
- Esisuisse was mandated to provide the funds to a liquidator within 20 days after FINMA orders protective measures or initiates insolvency.
- Banks were required to hold assets equivalent to 125 percent of their insured deposits in Switzerland.

F. Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT)

78. The 2005 assessment conducted by the Financial Action Task Force (FATF) found that Switzerland's AML/CFT framework was largely compliant with the standard, but also highlighted key deficiencies. Since then, the authorities took steps to address some of the shortcomings. Considering the international pressure to increase transparency of legal persons and tackle tax evasion, the authorities are encouraged to effectively implement the revised FATF standard, notably with respect to the inclusion of tax crimes as predicate offenses to money laundering and transparency of beneficial ownership of legal persons. Switzerland is tentatively scheduled to undergo its next assessment in 2015.

Appendix I. 2007 FSAP Findings and Key Recommendations

Table 6. Switzerland: Previous FSAP Findings and Key Recommendations—BCP

Reference Principle	Recommended Action	Status
Objectives, independence, powers, transparency, and cooperation BCP 1	Revise provisions in Article 7 of the draft FINMA Act, which presently could give industry representatives excessive leverage in opposing regulation. Continue to advance the depth of staff expertise and skills.	No action taken on the provision, but FINMA has been strengthening and updating regulation. A measure to narrow the eligibility for the FINMA Board members was recently introduced. FINMA has increased the number of staff as well as training for staff. It also hired staff with private sector experiences.
Prudential regulation and requirements BCP 6–18	As part of Basel II implementation, review in depth the capital adequacy of the two large banks. Develop an advanced supervisory framework for bank-specific liquidity risks.	FINMA has started requiring a stricter capital planning process for the two big banks to ensure these banks are adequately capitalized, including use of stress-testing. A higher minimum capital ratio is also applied to these banks to reflect their systemic importance. An enhanced quantitative liquidity requirement, modeled after the LCR, is introduced for the two large banks since 2010. FINMA plans to introduce Basel III LCR from 2015.
Methods of ongoing banking supervision BCP 9–21	Consider advancing engagement with banks through performing more onsite discovery work.	FINMA has gradually been increasing onsite visit to banks by its own staff, particularly for larger banks. Also, some of these are horizontal in nature, focusing on a particular theme in various banks. Onsite visits to smaller banks are seemingly still limited.
Accounting and disclosure BCP 22	Consider using a range of international experts and audit firms for the special audits. Consider the periodic rotation of audit firms.	In addition to the use of regular audit firms, FINMA uses third-party experts/firms for performing targeted interventions, such as investigations of complicated problems/matters; delivery of a second opinion, if it is not convinced by the assessments and confirmations given by the ordinary external audit firms. No action taken. Rotation of lead auditors is required but not of audit firms.
Corrective and remedial powers of supervisors BCP 23	The Swiss Federal Banking Commission (SFBC) should have the authority to impose direct civil monetary penalties on banks, directors, or managers.	No action taken on the measure, but FINMA has been making extensive use of its general corrective and remedial powers to achieve prudential results.

Table 7. Switzerland: Previous FSAP Findings and Key Recommendations—IOSCO		
Reference Principle	**Recommended Action**	**Status**
Principles 1–5 Relating to the Regulator	Securities regulation should be updated to include all types of securities transactions and securities intermediaries, including primary markets and all asset managers. Modalities for removal of board members could be clearly spelled out in the law. Rules on incompatibilities with other professional activities could be improved. Full budgetary independence should be granted to the SFBC, and an increase in its staff resources would be justified.	The FDF is currently preparing legislation that would apply to asset managers and public offers of unlisted securities. FINMASA notes that the Federal Council removes members of the FINMA BOD, if the conditions for holding office are no longer fulfilled. The Swiss authorities recently published the conditions for appointment, but the conditions for removal could be made more explicit. The FINMA BOD approves FINMA's budget. FINMA still has limited resources by peer comparison.
Principles 6–7 Self-Regulation	A more proactive role for the SFBC in supervising self-regulating organization (SROs) is desirable. The role performed by certain trade associations in regulation and supervision could be formalized.	FINMA has slightly increased its supervision of the SIX Swiss Exchange and Eurex Zurich from the situation in 2002 in which no direct supervision was conducted. FINMA can approve the standards issued by trade associations as minimum standards. They are not SROs under Principle 9.
Principles 8–10 Enforcement of Securities Regulation	Enforcement powers of the SFBC could be strengthened. In particular, it would be desirable to increase direct supervision, formalize the examination process and quality assurance for external auditors, and increase the range of available sanctions.	Some improvements have been made in all these areas. Increase in the direct supervision in the securities sector is limited, but quality control requirements apply to auditors of public companies. Some additional sanctions have been introduced, but there is still room for improvement.
Principles 11–13 Cooperation in Regulation	Efforts by the SFBC to strengthen cooperation with foreign regulators are recommended.	As a result of legislative changes, FINMA has been accepted as full signatory to the IOSCO Multilateral MOU, thus complying with the minimum requirements for international cooperation and exchange of information.

Table 7. Switzerland: Previous FSAP Findings and Key Recommendations—IOSCO (Concluded)		
Reference Principle	**Recommended Action**	**Status**
Principles 14–16 Issuers	There is room to improve protection for minority shareholders and strengthen accounting and auditing regulations to ensure comparability of financial information. It would also be advisable to introduce proper supervision and sanctioning of auditors of listed companies.	Improvements have been made to the protection of minority shareholders, although some gaps may remain. Auditing regulations have been strengthened and auditors of listed companies have become subject to statutory supervision and enforcement. No notable changes have been made in accounting regulations.
Principles 17–20 Collective Investment Schemes	Improvements are possible in the area of asset valuation, where a more direct involvement of the regulator could be envisaged.	The CISA includes basic requirements on valuation, complemented by the guidelines of the Swiss Funds and Asset Management Association endorsed by FINMA.
Principles 21–24 Market Intermediaries	Supervision of market intermediaries could be strengthened by supervising dealers that trade on their own account, but whose business volume falls below the official threshold, and those that provide services only to qualified professional investors. Rules on disclosure of any conflict of interest before conducting the transaction could be provided.	Dealers that only trade for own account below a yearly threshold value are not subject to supervision; however, supervision of pure own account dealers is not required by the IOSCO Principles. Securities dealers that provide services only to certain professional investors are not subject to supervision, but the scope of those investors is very limited. There are some requirements on disclosure of conflicts of interest in the standards of the SBA recognized as minimum standards by FINMA.
Principles 25–30 Secondary Market	The supervisory role of the SFBC with regard to secondary markets could be strengthened. Proper supervision of international exchanges requires full ability to provide information; see recommendation under Principles 11 to 13.	FINMA has slightly increased its supervision of the SIX Swiss Exchange and Eurex Zurich from the situation in 2002 where no direct supervision was conducted. As noted above, FINMA's ability to cooperate has been improved.

Table 8. Switzerland: Previous FSAP Findings and Key Recommendations—IAIS		
Reference Principle	**Recommended Action**	**Status**
The Supervisory System ICPs 2–5	Consider greater clarity regarding the authority, circumstances, and processes in addressing potential conflicts in supervisory objectives. Enhance the Federal Office of Private Insurance's (FOPI) independence and accountability through: (a) public disclosure of the reasons, if the director of the FOPI is removed from office; and (b) establishment of an internal audit function within the FOPI. Push ahead with the regulatory reforms under the Insurance Supervision Law (ISL). Strengthen regulatory resources to effectively supervise a sophisticated and globally diversified reinsurance industry and implement the regulatory reforms. Consider formal regulatory cooperation and information exchanges with foreign regulators outside the EU/European economic area.	Implemented with the creation of FINMA.
Ongoing Supervision ICPs 11–17	Build adequate regulatory resources and cost-effective systems and processes to: (a) enhance global market analysis; (b) conduct risk-focused onsite inspections; (c) enforce preventive and corrective measures; (d) conduct group/conglomerate supervision; and (e) conduct direct supervision of intermediaries. Consider quarterly reports on selected key financial indicators, particularly on solvency and asset-liability management, to facilitate ongoing off-site surveillance and timely intervention. Allocate adequate and skilled resources to enforce preventive and corrective measures under the ISL.	Largely implemented.
Prudential Requirements ICPs 18–23	Maintain the momentum in implementing the SST as planned.	Implemented.
Markets and Consumers ICPs 24–27	Introduce enhanced disclosure and market conduct requirements. Plan for the effective implementation of the IAIS standards on public disclosures to facilitate market discipline.	Partly implemented.

Table 9. Switzerland: Previous FSAP Findings and Key Recommendations—FMI		
Reference Principle	**Recommended Action**	**Status**
Principle 7 of the CPSS Core Principles Security and Operational Reliability, and Contingency Arrangements	The SNB should analyze developments that are either planned or anticipated to occur during 2002, examining the contingency procedures of the Swiss Interbank Clearing (SIC) and the extraordinary liquidity sources of relevant currencies in plausible situations involving interruptions of operations in both the traditional and in the new (continuous linked) arrangements for foreign exchange (FX) settlements. The SNB should continue to prepare for operational problems related to violent acts. The SNB should consider hiring an accounting firm of its own choice to conduct occasional operations and security audits of SIC.	Implemented.
Responsibilities A-D of the CPSS Core Principles Central Bank Responsibilities in Applying the Core Principles	The SIC should continue its interaction with Deutsche Bundesbank with respect to the evolution of the euroSIC, in a manner consistent with the Lamfalussy Principles of Cooperative Central Bank Oversight of Cross-Border Netting and Settlement Systems.	Partly implemented. The SNB has classified euroSIC as not systemically important for the Swiss banking system. Subsequently the SNB will not conduct in-depth oversight activities. It relies on the supervision of Bafin, the German supervisor.

Appendix II. Selected Data

Table 10. Switzerland: Selected Economic Indicators, 2010–2015

	2010	2011	2012	2013	2014	2015
					Projections	
Real GDP (percent change)	3.0	1.8	1.0	2.0	2.1	2.2
Total domestic demand	2.7	1.8	1.2	1.8	1.7	1.6
Final domestic demand	2.2	1.9	1.9	2.2	2.1	1.9
Private consumption	1.7	1.1	2.4	2.3	1.8	1.8
Public consumption	0.2	1.2	3.2	3.0	1.7	0.9
Gross fixed investment	4.8	4.6	-0.3	1.7	3.0	2.7
Inventory accumulation 1/	0.5	-0.1	-0.6	-0.4	-0.4	-0.3
Foreign balance 1/	0.5	0.2	0.0	0.4	0.6	0.8
Nominal GDP (billions of Swiss francs)	572.7	585.1	591.9	603.2	621.7	641.3
Savings and investment (percent of GDP)						
Gross national saving	35.0	30.2	30.6	30.7	31.2	31.3
Gross domestic investment	20.3	21.3	21.0	21.1	21.3	21.5
Current account balance	14.8	9.0	9.6	9.6	9.9	9.8
Prices and incomes (percent change)						
GDP deflator	0.3	0.4	0.1	0.0	0.9	0.9
Consumer price index	0.7	0.2	-0.7	-0.2	0.2	0.5
Nominal wage growth	0.8	1.0	0.8	0.7	0.8	1.0
Unit labor costs (total economy)	-2.3	2.1	1.5	-0.3	-0.3	0.1
Employment and slack measures						
Unemployment rate (in percent)	3.5	2.8	2.9	3.2	3.2	3.0
Output gap (in percent of potential)	-0.5	-0.4	-1.2	-1.0	-0.7	-0.2
Capacity utilization	81.1	84.3	81.5	80.8	...	...
Potential output growth	1.6	1.7	1.8	1.8	1.8	1.8
General government finances (percent of GDP)						
Revenue	32.9	33.5	33.1	33.3	32.8	33.0
Expenditure	32.8	33.2	33.2	33.3	33.0	32.6
Balance	0.1	0.3	0.0	0.0	-0.2	0.4
Cyclically adjusted ordinary balance	0.3	0.5	0.4	0.4	0.1	0.5
Gross debt 2/	48.5	49.1	50.1	49.4	48.1	47.3
Monetary and credit (percent change, averages)						
Broad money (M3)	6.4	6.9	8.0	9.7	...	...
Domestic credit, non-financial	2.1	3.7	5.3	3.9	...	...
Three-month SFr LIBOR	0.2	0.1	0.1	0.0	...	...
Yield on government bonds (7-year)	1.3	1.2	0.4	0.6	...	...
Exchange rates (levels)						
Swiss francs per U.S. dollar (annual average)	1.0	0.9	0.9	0.9	...	...
Swiss francs per euro (annual average)	1.4	1.2	1.2	1.2	...	...
Nominal effective rate (avg., 2005=100)	128.0	137.7	137.8	140.1	...	...
Real effective rate (avg., 2005=100) 3/	110.1	114.2	111.6	112.0	...	...

Sources: Haver Analytics; IMF's Information Notice System; SNB; and IMF staff estimates.
1/ Contribution to growth.
2/ Reflects new Government Financial Statistics Manual (GFSM) 2001 methodolgy, which values debt at market prices.
3/ Based on relative consumer prices.

Table 11. Switzerland: Financial Soundness Indicators

	#	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013.06
Banks														
Capital adequacy														
Regulatory capital as percent of risk-weighted assets [1/]	#	12.4	12.6	12.4	12.6	12.4	13.4	12.1 *	14.76 *	17.9	17.3	16.7	16.9	16.45
Regulatory Tier I capital to risk-weighted assets [1/]		12.6	13.1	13.5	13.3	13.0	13.4	11.6 *	12.29 *	15.2	15.6	15.5	15.8	15.14
Non-performing loans net of provisions as percent of capital [2/,3/]	#	2.0	0.6	-0.5	-1.2	-1.0	-1.0	-0.9	6.5	6.9	5.4	4.8	4.4	nav
Asset quality and exposure														
Non-performing loans as percent of gross loans [3/]		2.1	1.8	1.3	0.9	0.5	0.3	0.3	0.9	1.0	0.9	0.8	0.8	nav
Sectoral distribution of bank credit to the private sector (percent) [4/]														
Households		58.1	60.8	63.7	65.2	66.6	68.5	71.5	65.4	67.1	68.3	68.8	65.6	66
Agriculture and food industry		1.4	1.3	1.3	1.3	1.2	1.4	1.4	1.3	1.3	1.3	1.2	0.9	0.9
Industry and manufacturing		4.7	4.5	4.1	3.7	3.4	3.0	3.4	3.0	3.0	3.0	2.9	3.0	2.8
Construction		2.7	2.5	2.2	2.1	1.9	1.7	1.8	1.6	1.6	1.6	1.7	1.7	1.7
Retail		5.0	4.6	4.1	3.7	3.6	3.1	3.3	3.1	3.1	3.2	3.1	3.3	3.1
Hotels and restaurants / Hospitality sector		1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1
Transport and communications		1.2	1.1	1.1	1.1	1.1	1.0	1.1	0.9	0.9	0.9	0.7	0.8	0.9
Other financial activities		3.9	3.0	2.2	2.2	2.4	3.1	5.2	7.0	0.4	0.5	0.5	0.7	0.8
Insurance sector		1.0	0.7	0.5	0.5	0.4	0.4	0.4	0.8	0.5	0.6	0.4	0.7	0.6
Commercial real estate, IT, R&T		12.8	12.5	12.3	12.2	12.1	11.0	5.9	11.0	11.4	12.0	12.4	13.9	14.5
Public administration (excluding social security)		3.6	3.5	3.3	3.1	2.6	2.4	1.1	1.8	0.0	0.0	0.0	0.0	0
Education		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2
Healthcare and social services		1.4	1.4	1.3	1.3	1.3	1.1	1.1	1.0	1.0	1.1	1.1	1.3	1.4
Other collective and personal services		1.7	1.6	1.5	1.5	1.5	1.3	1.7	1.2	1.0	1.0	1.0	1.0	1
Other [5/]		0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	7.6	5.3	5.0	5.7	5.2
Earnings and profitability														
Gross profits as percent of average assets (ROAA)		0.6	0.5	0.7	0.8	0.9	0.9	0.7	0.3	0.5	0.7	0.7	0.6	0.8
Gross profits as percent of average equity capital (ROAE)		10.0	8.9	11.7	14.3	18.0	17.7	15.4	5.4	14.5	21.0	19.7	18.4	24.2
Net interest income as percent of gross income		34.8	34.9	40.2	36.4	30.9	27.4	28.1	36.3	30.4	27.9	31.1	31.6	30.4
Non-interest expenses as percent of gross income		63.3	61.7	63.5	62.7	59.2	63.0	70.4	85.5	80.1	73.3	72.0	73.7	69.2
Liquidity														
Liquid assets as percent of total assets		24.6	23.2	26.7	24.5	24.7	25.2	27.1	29.2	27.7	23.5	26.6	26.7	28.3
Liquid assets as percent of short-term liabilities		63.2	61.5	63.7	59.6	59.4	60.4	63.9	67.1	64.3	53.8	58.8	55.8	58.9
Net long position in foreign exchange as a percentage of tier I capita		34.1	32.3	30.1	15.5	30.6	21.9	13.7 *	-16.1 *	-23.2	-41.1	-61.2	-47.6	-55.9

Source: SNB.

1/ Based on parent company consolidation. This consolidation basis equals the CBDI approach defined in the financial soundness indicators (FSI) compilation guide plus foreign bank branches operating in Switzerland, and minus overseas deposit-taking subsidiaries.
2/ Until 2004, general loan-loss provisions were made; as of 2005, specific loan-loss provisions have been carried out.
3/ From 2008 onwards broader criteria pursuant to national accounting regulations (FINMA-RS 08/2 Art. 228b) has been applied for defining non-performing loans.
4/ As percent of total credit to the private sector.
5/ Mining and extraction, production and distribution of electricity, natural gas and water, financial intermediation, social security, ex-territorial bodies and organizations, other.

*These ratios were calculated from numbers that originate from the Basel I as well as from the Basel II approach. Therefore, interpretation must be done carefully since they can vary within +/- 10%.

Table 12. Switzerland: Financial System Structure, 2008–2012

	2008	2009	2010	2011	2012	2013.06
Assets	**(In billions of Swiss francs)**					
All financial institutions	4214	3861	3933	4016	4022	
Banks	3080	2668	2715	2793	2778	2895
Cantonal banks	389	404	422	449	482	490
Large banks	1885	1445	1482	1467	1365	1340
Regional and savings banks	90	92	96	101	104	105
Raiffeisen banks	132	140	147	156	165	191
Other banks	519	525	497	509	506	633
Stock exchange banks	131	138	123	137	125	137
Other banks	56	59	61	66	69	185
Foreign controlled banks	332	328	313	306	312	312
Branches of foreign banks	24	24	25	57	94	72
Private bankers	41	39	46	54	62	65
Insurance Companies	596	593	597	598	614	
Life	281	282	291	299	311	
Nonlife	315	312	306	299	303	
of which-Reinsurance	142	145	139	130	130	
Pension funds 1/	539	599	621	625	629	
Assets	**(In percent of total)**					
All financial institutions	100.0	100.0	100.0	100.0	100.0	
Banks	73.1	69.1	69.0	69.5	69.1	
Cantonal banks	9.2	10.5	10.7	11.2	12.0	
Large banks	44.7	37.4	37.7	36.5	33.9	
Regional and savings banks	2.1	2.4	2.4	2.5	2.6	
Raiffeisen banks	3.1	3.6	3.7	3.9	4.1	
Other banks	12.3	13.6	12.6	12.7	12.6	
Stock exchange banks	3.1	3.6	3.1	3.4	3.1	
Other banks	1.3	1.5	1.6	1.6	1.7	
Foreign controlled banks	7.9	8.5	8.0	7.6	7.8	
Branches of foreign banks	0.6	0.6	0.6	1.4	2.3	
Private bankers	1.0	1.0	1.2	1.4	1.5	
Insurance Companies	14.1	15.4	15.2	14.9	15.3	
Life	6.7	7.3	7.4	7.4	7.7	
Non-life	7.5	8.1	7.8	7.4	7.5	
of which-Reinsurance	3.4	3.7	3.5	3.2	3.2	
Pension funds	12.8	15.5	15.8	15.6	15.6	

Sources: SNB; Swiss Federal Statistical Office; and Annual Reports.

1/ 2012 numbers are based on 2011 growth rates.

Appendix III. Risk Assessment Matrix

Table 13. Switzerland: Risk Assessment Matrix[19]

Switzerland	Overall Level of Concern	
Nature/Source of Main Threats and Possible Triggers	**Likelihood of severe realization of threat sometime in the next three years**	**Expected impact on financial stability if threat is realized**
Side-effects from global financial conditions: • Surges in global financial market volatility (related to UMP exit), leading to economic and fiscal stress, and constraints on country policy settings.	High Bouts of market volatility and higher-than-expected increases in long-term rates could occur as a result of advanced countries exiting from UMP.	Medium Disorderly unwinding of UMP might cause renewed safe haven inflows into Switzerland, forcing the SNB to intervene again to defend the floor. Pressures on the housing market may also intensify.
Protracted period of slower growth in advanced and emerging economies: • Advanced economies: larger than expected deleveraging or negative surprises on potential growth. • Emerging markets: earlier maturing of the cycle and incomplete structural reforms leading to prolonged slower growth.	High for Europe A protracted period of weak demand could take a toll on productive capacity across advanced economies. In Europe in particular, the risk of deflation has increased. Medium for elsewhere Trend growth is lower as a result of weaker than expected productive capacity and human capital. Disappointing activity in emerging markets would bring about a reassessment that the cycle is more mature, amid quasi-fiscal activities more pervasive than in the baseline.	Low Europe is the main trading partner of Switzerland; a protracted period of slower European growth would dampen economic growth and possibly cause a recession.
Financial stress in the euro area re-emerges (triggered by stalled or incomplete delivery of euro area policy commitments)	Medium Financial stress re-emerges and bank-sovereign links re-intensify as a result of stalled or incomplete delivery of policy commitments at the national or euro area level (e.g., banking union), a negative assessment of the asset quality review combined with insufficient backstops, or adverse developments in some peripheral countries.	Medium Given the close trade links, a re-emergence of the stress would slow economic growth. Safe haven capital inflows would resume, requiring intervention. Pressures on the housing market may also intensify. Direct financial sector exposure to euro area countries under market pressure is moderate. Indirect exposures could become problematic in a tail risk situation.

[19] The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood of risks listed is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability of 30 percent or more). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly.

Table 13. Switzerland: Risk Assessment Matrix (Concluded)		
Switzerland	**Overall Level of Concern**	
Nature/Source of Main Threats and Possible Triggers	**Likelihood of severe realization of threat sometime in the next three years**	**Expected impact on financial stability if threat is realized**
Sharp correction in the housing market	Medium Low interest rates and ample liquidity continue to drive prices higher. A price correction is likely once interest rates return to normal levels.	Medium A sharp correction in housing prices would weaken household balance sheets and slow down growth. The banking and insurance industries, both exposed to the mortgage market, would suffer. Domestically focused banks are particularly vulnerable, though they are well capitalized on average.
Bond market stress from a reassessment in sovereign risk	Medium • Japan: Abenomics falters, depressed domestic demand and deflation (short term), leading to bond market stress (medium term) Low • United States: protracted failure to agree on a credible plan to ensure fiscal sustainability (medium term)	Medium Global asset managers may maintain or further shift asset allocations to safe havens, including Swiss franc-denominated assets. Safe haven flows would put the currency under pressure again and possibly re-exacerbate pressures in the housing market.
Risks to financial stability from incomplete regulatory reforms: delays, dilution of reform, or inconsistent approaches (medium term)	Medium Remaining uncertainties about the design of future global regulatory landscape and slow progress in reaching agreements on effective crisis resolution mechanisms continue to hinder developments of appropriate business models.	Medium The banking sector is highly globally interconnected, and large banks are highly leveraged and dependent on wholesale funding. As such, they are a potential source of outward spillovers and vulnerable to inward spillover from instability in global financial markets.
Increasing geopolitical tensions surrounding Ukraine lead to disruptions in financial, trade, and commodity markets	Medium Doubts about whether Ukraine will consistently make timely commercial and financial payments, both internally and externally; financial and trade disruptions; contagion; a further slowdown in Russia; and uncertainty all trigger a re-pricing of risks and heightened volatility in financial markets.	Medium The direct impact should be limited. However, contagion and heightened volatility in financial markets may trigger renewed safe haven flows.

Appendix IV. Banking Sector Stress Tests

Table 14. Switzerland: Main Macroeconomic Variables for the Swiss Economy

			Historical				Projection			
	mean	s.d.	2010	2011	2012	2013	2014	2015	2016	2017
Baseline scenario:										
Real GDP growth (%)	1.7	1.6	3.0	1.9	1.0	1.3	1.8	1.9	1.9	1.9
CPI inflation (%)	2.7	2.6	0.7	0.2	-0.7	-0.2	0.2	0.7	1.0	1.0
Interest rates:										
3-month CHF Libor (%)	2.8	2.7	0.2	0.1	0.1	0.1	0.7	1.4	1.9	1.9
Exchange rates:										
CHF/EUR	1.67	0.26	1.38	1.23	1.21	1.21	1.21	1.21	1.21	1.21
CHF/USD	1.80	0.82	1.04	0.89	0.94	0.94	0.94	0.94	0.94	0.94
NEER (increase = appreciation)	84.9	22.5	113.1	127.4	127.1	127.1	127.1	127.1	127.1	127.1
REER (increase = appreciation)	99.1	7.4	107.5	118.0	114.3	113.2	112.1	111.0	109.8	108.7
House price index:										
Residential (1970Q1=100) 1/	274.9	94.5	405.0	420.9	437.7	441.3	448.5	458.5	470.0	482.1
Stock price index (01/01/1973=100)	402.0	336.2	817.0	769.8	792.3	945.6	1015.3	1099.6	1194.6	1300.2
Domestic credit growth (%)	4.4	4.7	2.9	5.1	4.7	1.1	2.0	2.6	2.9	3.0
Alternative scenario 1 - External (I):										
Real GDP growth (%)	1.7	1.6	3.0	1.9	1.0	1.3	-0.2	0.8	1.6	1.9
CPI inflation (%)	2.7	2.6	0.7	0.2	-0.7	-0.2	-0.4	0.4	0.9	1.0
Interest rates:										
3-month CHF Libor (%)	2.8	2.7	0.2	0.1	0.1	0.1	0.0	0.9	1.8	1.9
Exchange rates:										
CHF/EUR	1.67	0.26	1.38	1.23	1.21	1.21	1.00	1.07	1.14	1.21
CHF/USD	1.80	0.82	1.04	0.89	0.94	0.94	0.80	0.85	0.89	0.94
NEER (increase = appreciation)	84.9	22.5	113.1	127.4	127.1	127.1	147.9	138.2	129.7	127.1
REER (increase = appreciation)	99.1	7.4	107.5	118.0	114.3	113.2	130.7	120.8	112.2	108.7
House price index:										
Residential (1970Q1=100) 1/	274.9	94.5	405.0	420.9	437.7	441.3	439.0	443.7	453.7	465.3
Stock price index (01/01/1973=100)	402.0	336.2	817.0	769.8	792.3	945.6	934.6	969.4	1042.5	1134.7
Domestic credit growth (%)	4.4	4.7	2.9	5.1	4.7	1.1	-0.6	1.2	2.6	3.0
Alternative scenario 2 - External (II):										
Real GDP growth (%)	1.7	1.6	3.0	1.9	1.0	1.3	-3.2	-1.5	0.2	1.9
CPI inflation (%)	2.7	2.6	0.7	0.2	-0.7	-0.2	-0.4	0.3	0.8	1.0
Interest rates:										
3-month CHF Libor (%)	2.8	2.7	0.2	0.1	0.1	0.1	0.0	0.6	1.5	1.9
Exchange rates:										
CHF/EUR	1.67	0.26	1.38	1.23	1.21	1.21	1.21	1.21	1.21	1.21
CHF/USD	1.80	0.82	1.04	0.89	0.94	0.94	0.95	0.95	0.95	0.94
NEER (increase = appreciation)	84.9	22.5	113.1	127.4	127.1	127.1	126.6	126.6	126.6	127.1
REER (increase = appreciation)	99.1	7.4	107.5	118.0	114.3	113.2	111.7	110.6	109.5	108.7
House price index:										
Residential (1970Q1=100) 1/	274.9	94.5	405.0	420.9	437.7	441.3	428.2	424.3	428.5	439.5
Stock price index (01/01/1973=100)	402.0	336.2	817.0	769.8	792.3	945.6	820.4	773.4	786.5	856.0
Domestic credit growth (%)	4.4	4.7	2.9	5.1	4.7	1.1	-3.6	-1.2	1.0	3.0
Alternative scenario 3 - Domestic:										
Real GDP growth (%)	1.7	1.6	3.0	1.9	1.0	1.3	1.2	0.7	0.1	-0.4
CPI inflation (%)	2.7	2.6	0.7	0.2	-0.7	-0.2	0.3	0.9	1.3	1.3
Interest rates:										
3-month CHF Libor (%)	2.8	2.7	0.2	0.1	0.1	0.1	0.8	1.6	2.2	2.3
Exchange rates:										
CHF/EUR	1.67	0.26	1.38	1.23	1.21	1.21	1.32	1.44	1.56	1.67
CHF/USD	1.80	0.82	1.04	0.89	0.94	0.94	1.15	1.37	1.59	1.80
NEER (increase = appreciation)	84.9	22.5	113.1	127.4	127.1	127.1	116.5	106.0	95.4	84.9
REER (increase = appreciation)	99.1	7.4	107.5	118.0	114.3	113.2	109.7	106.1	102.6	99.1
House price index:										
Residential (1970Q1=100) 1/	274.9	94.5	405.0	420.9	437.7	441.3	410.1	379.0	347.8	316.7
Stock price index (01/01/1973=100)	402.0	336.2	817.0	769.8	792.3	945.6	993.5	1029.3	1045.6	1041.8
Domestic credit growth (%)	4.4	4.7	2.9	5.1	4.7	1.1	1.5	1.6	1.3	0.9

Source: IMF staff calculations

1/ Average of for rent, owner-occupied house, and single-family house prices.

Table 15. Switzerland: Solvency Stress Test Matrix			
Domain	**Assumptions**		
	Bottom-Up by Banks (if applicable)	**Top-Down by Authorities (if applicable)**	**Top-Down by IMF Team (if applicable)**
Institutions included	• 2 banks	• All banks	• 30 Banks
Market share	• Percentage of total sector assets: 60	• Percentage of total sector assets: 100	• Percentage of total sector assets: 85
Data and baseline date	• Banks' own data	• Supervisory data	• Publicly available data. • Supervisory data, aggregated along bank groups only.
Methodology	• Combination of banks' own models and pre-defined benchmarks. • Translation to IMF scenarios based on loss potential analysis (LPA) results.	• SNB stress testing framework (including the building block analysis (BBA)).	• IMF stress testing framework (tailor-made for the Swiss FSAP; enables modeling of "expected" and "unexpected" losses under stress).
Stress test horizon	• 2 years (translated to 5 years using results from the LPA)	• 5 years (2013–2017)	• 5 years (2013–2017)
Shocks	• Shocks based on GDP trajectories and other relevant macroeconomic variables (evolution of Swiss macro variables agreed with the authorities; global variables modeled by RES, consistent with Swiss scenarios). • Three adverse scenarios: moderate external shock (1.2 standard deviation (StD)) in historical terms); severe external shock (3 StD in historical terms); domestic shock (protracted low growth).		
Risks/factors assessed	• Comprehensive coverage of solvency risks: credit, market, income risks, fixed-income holdings (incl. of "peripheral Europe"), funding, and other risks (including operational risk).	• Comprehensive coverage of solvency risks: credit, market, income risks, fixed-income holdings (incl. of "peripheral Europe"), funding, concentration, contagion, and other risks (including operational risk).	• Coverage of solvency risks: credit, market, income risks, funding, and contagion risks. • Comprehensiveness was "limited" by the unavailability of supervisory data on a bank-by-bank basis.
Calibration of risk parameters	• Credit losses, pre-impairment income (components), and funding costs based on internal models. • Calibration of risk parameters for the different risks, based on banks internal and regulatory models.	• Credit losses, pre-impairment income (components), and funding costs based on satellite models and the BBA. • Calibration of risk parameters for credit risk, based on SNB models.	• Credit losses, pre-impairment income (components), and funding costs based on satellite models. • PDs for credit risk based on Moody's KMV expected default frequencies (EDFs), matched to average supervisory PDs. LGDs based on average supervisory LGDs. • Asset correlations based on internal risk-based (IRB) formulae.

Table 15. Switzerland: Solvency Stress Test Matrix (Concluded)			
Behavioral adjustments	• Changes in RWAs take into account credit growth and changes in risk weights based on internal models. • Constant balance sheet composition. • No dividend payout. • No management actions considered.	• Changes in RWAs take into account credit growth and changes in risk weights based on authorities' models. • Constant balance sheet composition. • Pre-defined dividend payout based on income after stress.	• Changes in RWAs take into account credit growth and changes in risk weights based on IRB models. • Constant balance sheet composition. • Pre-defined dividend payout based on income after stress and capital buffer.
Regulatory standards	• Hurdle rates based on Basel III and Swiss regulatory minimum for CET1 capital ratios.	• Hurdle rates based on Basel III and Swiss regulatory minimum for CET1 capital ratios. • Basel II/III IRB rules.	• Hurdle rates based on Basel III and Swiss regulatory minimum for CET1 capital ratios. • Basel II/III IRB rules.
Results	• Capital adequacy ratio (CAR) shortfall (if applicable). • Pass or fail; percentage of assets that fail.	• CAR, shortfall (if applicable), and buffer changes; system-wide and by bank type. • Pass or fail (number of banks); percentage of assets that fail.	• CAR, shortfall (if applicable), and buffer changes; system-wide and by bank type. • Pass or fail (number of banks); percentage of assets that fail.
Source: IMF staff.			

Table 16. Switzerland: Liquidity Risk Stress Test Matrix			
Domain	**Assumptions**		
	Bottom-Up by Banks	**Top-Down by Authorities**	**Top-down by IMF**
Institutions included	• N/A	• All banks	• 30 banks
Market share		• Percent of total sector assets: 100	• Percent of total sector assets: 85
Data and baseline date		• Supervisory data	• Publicly available data
Methodology		• Basel III ratio (LCR).	• Bank-run type test, (bank-run scenarios based on expert judgment).
Risks		• Funding and market liquidity, maturity mismatches.	• Funding liquidity, maturity mismatches.
Regulatory standards		• Proxy for Basel III ratio (LCR).	• N/A.
Results		• Pass rate, and remaining buffers; system-wide and by bank type.	• Pass rate, and remaining buffers; system-wide and by bank type.
Source: IMF staff.			