



# SWITZERLAND

## TECHNICAL NOTE—OVERSIGHT, SUPERVISION, AND RISK MANAGEMENT OF FINANCIAL MARKET INFRASTRUCTURES

September 2014

This Technical Note on Oversight, Supervision, and Risk Management of Financial Market Infrastructures 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 August 20, 2014.

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# SWITZERLAND

FINANCIAL SECTOR ASSESSMENT PROGRAM

September 2014

## TECHNICAL NOTE

OVERSIGHT, SUPERVISION, AND RISK MANAGEMENT OF  
FINANCIAL MARKET INFRASTRUCTURES

Prepared By  
**Monetary and Capital Markets  
Department**

This Technical Note was prepared by IMF staff in the context of the Financial Sector Assessment Program in Switzerland. It contains technical analysis and detailed information underpinning the FSAP's findings and recommendations.

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## Glossary

BA	Banking Act
CCP	Central Counterparty
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CLS	Continuous Linked Settlement
CPSS	Committee on Payment and Settlement Systems
CRO	Chief Risk Officer
CSD	Central Securities Depository
EMIR	European Market Infrastructure Regulation
ESMA	European Securities and Markets Authority
EU	European Union
FDF	Federal Department of Finance
FinfraG	Swiss Financial Market Infrastructure Act
FINMA	Swiss Financial Market Supervisory Authority
FINMASA	Federal Act on the Swiss Financial Market Supervisory Authority
FMI	Financial Market Infrastructure
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IT	Information Technology
LSE	London Stock Exchange
MOU	Memorandum of Understanding
MTF	Multilateral Trading Facility
NBA	National Bank Act
NBO	National Bank Ordinance
PFMI	CPSS-IOSCO Principles for Financial Market Infrastructures
OTC	Over the Counter
ROCH	Recognized Overseas Clearing House
RTGS	Real Time Gross Settlement
SECOM	Settlement Communication System
SESTA	Federal Act on Stock Exchanges and Securities Trading
SIC	Swiss Interbank Clearing
SIS	SegaInterSettle
SNB	Swiss National Bank
SSS	Securities Settlement System
SSX	SIX Swiss Exchange
T2S	TARGET2 Securities

## EXECUTIVE SUMMARY

**Financial market infrastructures (FMIs) in Switzerland are well-developed and stable.** The FMIs operate smoothly for many years without any substantial outage or other technical or financial problem. Payment in Swiss francs, both large value and retail payments, are settled in the Swiss Interbank Clearing (SIC), which is a real time gross settlement (RTGS) system. SIX x-clear AG is the central counterparty (CCP) domiciled in Switzerland that guarantees settlement of securities even if one of its clearing participants fails. It is licensed as a bank and clears securities traded on the SIX Swiss Exchange (SSX), the London Stock Exchange (LSE), and several other foreign and domestic trading platforms. SIX SIS AG offers securities settlement and the central depository system as well as custody functions for more than 50 foreign markets. SIX SIS AG is also licensed as a bank.<sup>1</sup>

**FMIs in Switzerland are subject to appropriate and effective supervision and oversight by Financial Market Supervisory Authority (FINMA) and the SNB respectively.** The regulation, supervision and oversight of the FINMA and SNB are based on statutory law. The SNB oversees all payment, clearing and settlement systems and subjects systemically important systems to minimum requirements. FINMA, as the prudential regulatory authority, supervises those entities that are licensed as banks, i.e., SIX x-clear AG and SIX SIS AG. The SNB and FINMA appropriately cooperate in their supervision and oversight of FMIs as well as with the relevant foreign regulatory authorities.

**Important progress has been realized regarding the adoption of the new principles for FMIs. FMIs should continue their efforts to achieve full compliance. The new Swiss Financial Market Infrastructure Act (FinfraG) should be passed by Parliament to complete the process.** A major reform was implemented by the SNB in July 2013 through a revision of its National Bank Ordinance (NBO) that translates the new international principles for FMIs in national legislation and regulation, in line with the international reform agenda. Parallel, the Federal Department of Finance (FDF) has developed legislation to establish a regulatory framework governing OTC derivatives, which also includes a revised regulatory framework for FMIs, and which is planned to enter into force in 2015. Adoption of this law is important to establish a solid legal basis for the supervision of FMIs in Switzerland. Implementation of the new principles by the FMIs has started but FMIs should continue their efforts to close the remaining gaps.

**Although the risk management framework of SIX Group AG is comprehensive it has certain gaps that need to be addressed to fully observe the new international standards.** The following improvements are particularly recommended: i) a realignment of the risk management reporting lines to ensure the independence of the risk management functions of the FMIs; ii) the risk

<sup>1</sup> Besides SIS x-clear there are two non-domestic CCPs that are relevant for Switzerland, which are the UK based LCH.Clearnet Ltd and the German based Eurex Clearing AG. LCH.Clearnet Ltd clears financial instruments traded on SIX Swiss Exchange. Eurex Clearing AG clears derivatives based on Swiss underlying assets. Another important component for the Swiss payment infrastructure is Continuous Linked Settlement (CLS). CLS is the international foreign exchange settlement system managed by the New York-based CLS Bank International. CLS settles FX trades in 17 currencies including the Swiss franc.

management framework should explicitly address interdependencies, such as risks that the group bears from participants active in more than one FMI or business area within SIX Group AG; iii) the establishment of a comprehensive liquidity risk management framework for the CCP and central securities depository (CSD); iv) the full contractual and operational implementation of segregation and portability of a participant's positions and collateral at the CCP; v) development of plans for recovery and orderly winding down of operations; and vii) public disclosure of responses to the international agreed disclosure framework for FMIs.

**The SNB and FINMA are encouraged to hold a firm stance on the full implementation of the new principles in Switzerland.** SIX Group AG's organization structure and competitive environment continuously challenge the SNB and FINMA to find the right balance between the safety and efficiency of the Swiss FMIs. The provision of FMI services in Switzerland is concentrated in one private entity, which is SIX Group AG that operates the three systemically important FMIs, but also owns SSX and entities active in, among others, financial information and payment card issuance. The board of SIX Group AG has to divide its attention between the FMIs and the various other business activities that are mainly of a commercial nature. Also, the CSD and particularly the CCP operate in a highly competitive environment.

**The SNB and FINMA should upgrade their domestic and foreign cooperation arrangements to be able to handle crisis events effectively and in a timely manner.** The domestic cooperation arrangements work well in normal circumstances, but may prove insufficient during crisis events in the absence of a lead supervisor or overseer of the FMIs. It is recommended that the Swiss authorities develop a dedicated crisis management framework, for instance under the umbrella of the FDF-FINMA-SNB memorandum of understanding (MOU), indicating the roles, responsibilities and potential tools of the SNB and FINMA to manage a crisis. The crisis management framework should be regularly tested and updated. Crisis arrangements should also be part of the different MOUs with foreign authorities in which the Swiss authorities are signatories.

**Table 1. Switzerland: Main Recommendations**

<b>Recommendations on the supervision and oversight of FMIs</b>	<b>Timing</b>
The FinfraG should be passed by Parliament.	Short term
FINMA should fulfill its vacancies.	Short term
FINMA is encouraged to publicly disclose its policies related to FMIs and address FMIs specifically on its website.	Medium term
The SNB and FINMA are encouraged to hold a firm stance on the full implementation of the new principles in Switzerland.	Short term
The SNB and FINMA should upgrade their domestic and foreign cooperation arrangements to be able to handle crisis events effectively and in a timely manner.	Short to medium term
<b>Recommendations on the risk management framework of FMIs</b>	
The independence of the risk management function of SIX x-clear AG and SIX SIS AG needs to be addressed in the governance structure of the organization.	Short term
SIC AG, SIX x-clear AG and SIX SIS AG should further improve their risk management framework by complying with the PFMI, as reflected in the revised NBO.	Short term
The risk management framework of SIX Group AG should explicitly address interdependencies that are not addressed yet.	Short term to medium term
The Swiss FMIs should develop a recovery plan in line with ongoing international guidance.	Short to medium term

## INTRODUCTION<sup>2</sup>

**1. The main objective of this note is to analyze the safety and stability of FMIs in Switzerland.** For that purpose this note contains an assessment of the supervision and oversight of FMIs by the relevant Swiss authorities, as supervision and oversight are essential tools in promoting and maintaining financial stability. In addition, the overall risk management framework of SIX Group AG is reviewed, including the risk management approach towards the three systemically important FMIs that it operates. Finally, recovery planning is discussed as a tool to sustain critical operations and services in the event that an FMI may potentially become non-viable as a going concern.

**2. Well-functioning FMIs<sup>3</sup> can vastly improve the efficiency, transparency, and safety of the financial system.** FMIs provide the central infrastructure (comprised of institutions, rules, procedures, risk management frameworks and technical means and platforms) to execute payment and securities and derivatives clearing and settlement instructions in a country and therefore lay at the core of the public's confidence in money and the functioning of interbank, money, and capital markets. Payment systems, securities settlement systems (SSS) and CSDs may also enable efficient monetary policy implementation. CCPs may reduce the total counterparty credit risk in a market, and improve risk management practices and transparency.

**3. Contrary, FMIs that are not properly managed may potentially severely impact the stability of the economy.** As FMIs concentrate systemic risk improper managed FMIs can be sources of financial shocks, such as liquidity dislocations and credit losses, or a major channel through which these shocks are transmitted across domestic and international financial markets. The failure of a payment system, SSS or CSD can result in an ineffective implementation of monetary policies and a loss of confidence in the financial system. The failure of an FMI that is exposed to credit risk, such as a CCP, may result in unexpected losses for its participants, causing systemic disruptions, or in the absence of a resolution framework, eventually a bail out at the tax payers' expense.

**4. The recommendations in this note are based on the international agreed standards for FMIs, i.e., the CPSS-IOSCO Principles for FMIs (PFMI).** The assessment of the supervision and oversight takes the five responsibilities for authorities of the PFMI as explicit reference. In addition, Principle 3 of the PFMI is the basis for the findings on the overall risk management framework and recovery planning of SIX Group AG (Box 1). The note does not contain an assessment of the other PFMI principles, although some high-level findings on credit and liquidity risk and transparency are included.

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<sup>2</sup> The Technical Note was prepared by Froukelien Wendt, Senior Financial Sector Expert from the IMF Monetary and Capital Markets department, for the 2013 Switzerland FSAP. Her analysis was based on publicly available information, background documentation provided by the authorities, as well as discussions with the SNB, FINMA, SIX Group AG, banks and other relevant market participants.

<sup>3</sup> In this note, FMIs cover payment systems, securities settlement systems, central securities depositories, central counterparties and trade repositories.

### Box 1. PFMI Responsibility A-E and Principle 3

#### **Responsibility A: Regulation, supervision, and oversight of FMIs**

FMIs should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority.

#### **Responsibility B: Regulatory, supervisory, and oversight powers and resources**

Central banks, market regulators, and other relevant authorities should have the powers and resources to carry out effectively their responsibilities in regulating, supervising, and overseeing FMIs.

#### **Responsibility C: Disclosure of policies with respect to FMIs**

Central banks, market regulators, and other relevant authorities should clearly define and disclose their regulatory, supervisory, and oversight policies with respect to FMIs.

#### **Responsibility D: Application of the principles for FMIs**

Central banks, market regulators, and other relevant authorities should adopt the CPSS-IOSCO Principles for financial market infrastructures and apply them consistently.

#### **Responsibility E: Cooperation with other authorities**

Central banks, market regulators, and other relevant authorities should cooperate with each other, both domestically and internationally, as appropriate, in promoting the safety and efficiency of FMIs.

#### **Principle 3: Framework for the comprehensive management of risks**

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks,

Source: CPSS IOSCO Principles for Financial Market Infrastructures, April 2012

## DESCRIPTION OF FINANCIAL MARKET INFRASTRUCTURES IN SWITZERLAND

### Overview of FMIs in Switzerland

**5. The Swiss domiciled FMIs are operated by one private entity, which is SIX Group AG.** SIX Group AG operates (i) the real time gross settlement (RTGS) payment system Swiss Interbank Clearing (SIC) operated by Swiss Interbank Clearing AG (SIC AG); (ii) the CCP SIX x-clear AG; and (iii) the SSS and CSD SECOM operated by SIX SIS AG. SIX Group AG is also the holding company for the SIX Swiss Exchange (SSX), the SIX Structured Products Exchange (previously Scoach); and subsidiaries active in financial information and the payment card issuing, acquiring and processing

business. Figure 1 illustrates the FMI landscape in Switzerland. Appendix 1 and 2 show a simplified legal structure of SIX Group AG as well as its organization structure. Appendix 3 elaborates on the features and systemic importance of the main FMIs.

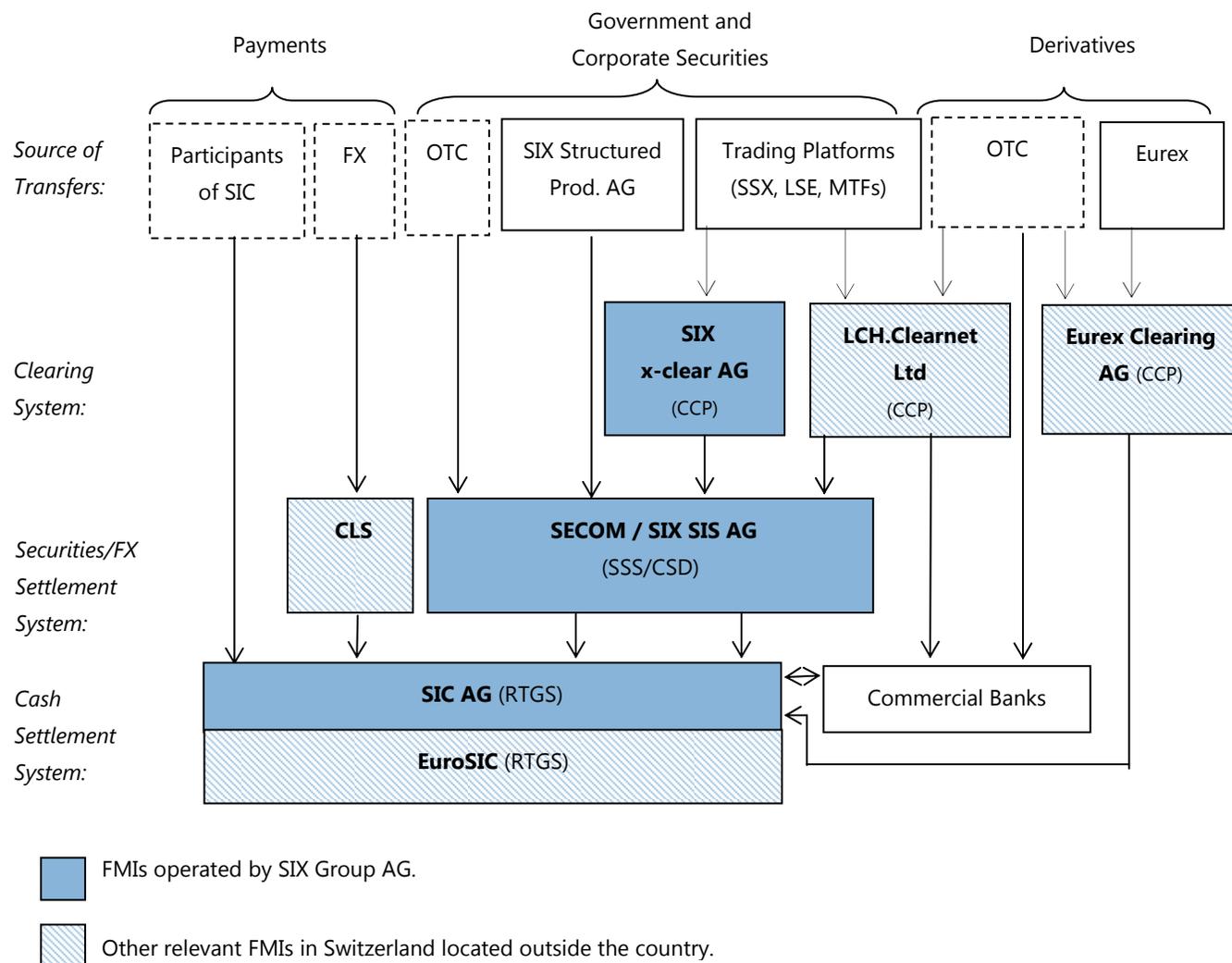
**6. SIX Group AG is an unlisted public limited company domiciled in Zurich.** SIX Group AG is owned by approximately 160 domestic and foreign banks, which are also the main users of the FMIs. UBS and Credit Suisse together have the largest stake with around 30 percent in total, but other banks are represented as well, such as cantonal, regional and Raiffeisen, commercial, private and foreign banks. No owner or bank category has an absolute majority.

**7. SIX Group AG was established to further enhance the efficiency of the Swiss financial infrastructure and its competitive position within Europe.** The Group was established in 2008, following the merger of the SSX Group, the SegInterSettle (SIS) Group and the Telekurs Group. It seeks to realize economies of scale and scope within the group by establishing functions, such as information technology (IT), at the group level that service the different subsidiaries within SIX Group AG. It further aims to increase its competitiveness by strategic acquisitions and sales. In December 2012 SIX Group AG decided to acquire Oslo Clearing ASA with the aim to strengthen its position as a CCP for regulated exchanges in Europe. In 2011 SIX Group AG sold its holding in the joint venture company Eurex to Deutsche Börse AG.

**8. Several FMIs located outside Switzerland are also relevant for the Swiss financial system.** The euro Swiss Interbank Clearing (euroSIC) is a payment system managed by the Frankfurt-based Swiss Euro Clearing Bank and operated by SIC AG for settlements in euro. More than 150 Swiss and non-Swiss financial institutions use this payment system to settle euro transactions in Switzerland and to interface with other euro-payment systems, such as TARGET2. LCH.Clearnet Ltd, the UK based CCP, provides clearing services to SSX and as such competes with SIX x-clear AG. Eurex Clearing AG, the Germany based CCP, clears Swiss financial derivatives that are traded on the Germany based derivatives market Eurex. The Continuous Linked Settlement (CLS) system is the U.S. based settlement system for foreign exchange transactions. Figure 1 illustrates the roles of the various FMIs in Switzerland.

**9. Over the counter (OTC) derivatives are cleared outside Switzerland.** Swiss market participants active in OTC derivatives clear their interest rate derivatives for example through the UK based SwapClear, which is part of LCH.Clearnet Ltd. The new Swiss Financial Market Infrastructure Act (FinfraG) will subject OTC derivatives trading in Switzerland to mandatory clearing requirements in line with the international financial reform agenda. The act will also include a regulatory regime for trade repositories. There are currently no trade repositories in Switzerland.

**Figure 1. Switzerland: FMI Landscape**



Source: IMF staff.

### Overview of the supervisory and oversight framework

**10. FINMA and the SNB are the authorities responsible for supervision and oversight of FMIs in Switzerland.** The SNB oversees all payment, clearing and settlement systems. Those systems that are important to the stability of the Swiss financial system are subject to minimum requirements. FINMA, as the prudential regulatory authority, supervises those entities that are licensed as banks, i.e., SIX x-clear AG and SIX SIS AG. The SNB and FINMA cooperate in their

supervision and oversight of FMIs domestically as well as with the relevant foreign regulatory authorities. Table 2 provides an overview of the FMIs regulated, supervised and overseen by FINMA and the SNB respectively.

**11. The regulation, supervision and oversight of FINMA and SNB are based on statutory law.** Appendix 4 provides an overview of the different laws and regulations that are applicable to FMIs. The National Bank Act (NBA) of 2004 provides the SNB with an explicit statutory mandate to oversee payment and securities clearing and settlement systems. The NBA specifies that the oversight function is designed to protect the stability of the financial system. The NBO contains detailed provisions on oversight, including requirements for FMIs. These responsibilities are part of SNB's overall responsibility to contribute to the stability of the Swiss financial system (article 5 NBA).

**Table 2. Switzerland: FMIs Regulated, Supervised and Overseen by FINMA and the SNB**

Category	FINMA Regulation and Supervision	SNB Regulation and Oversight
Domestic Payment systems	-	SIC AG
Domestic Securities clearing and settlement systems	SIX x-clear AG SIX SIS AG	SIX x-clear AG SECOM/ SIX SIS AG
Foreign payment systems	-	CLS
Foreign securities clearing and settlement systems	LCH.Clearnet Ltd	LCH.Clearnet Ltd Eurex Clearing AG

Source: FINMA and SNB.

**12. SIX x-clear AG and SIX SIS AG are supervised by FINMA under the Banking Act (BA) and the Federal Act on the Swiss Financial Market Supervisory Authority (FINMASA).<sup>4</sup>** FINMA's supervision has the objectives of protecting creditors, investors, and insured persons as well as ensuring the proper functioning of the financial market. A second objective is contributing to sustaining the reputation and competitiveness of Switzerland's financial centre. SIX x-clear AG and SIX SIS AG are subject to capital, governance and other requirements that also apply to banks. FINMA has formulated specific requirements and exemptions for the CCP and CSD, taking into account their specific nature, which are not publicly available. Mother company SIX Securities Services AG is subject to consolidated supervision of FINMA. FINMA has also subjected the holding SIX Group AG to certain requirements, although SIX Group AG is not a bank. These requirements include FINMA's approval of the statutes and organization regulations of SIX Group AG and its board committees and a fit and proper test for the individual members of the board and management.

<sup>4</sup> Supervision of FMIs would in principle also be possible under the Stock Exchange Act (SESTA).

## Recent reforms and reforms scheduled for the near future

**13. An important reform recently implemented concerns the revision of the NBO minimum requirements for operators of systemically important FMIs.** This revision envisages translating the PFMI in national legislation and regulation, raising the bar for systemically important FMIs in Switzerland, in line with the international reform agenda. The revision has entered into force on 1 July 2013. FMIs must comply with the new requirements by end of June 2014 at the latest.

**14. The Swiss authorities are currently developing the FinfraG to establish a regulatory framework in Switzerland that governs OTC derivatives as well as trade repositories.** The FinfraG is published for consultation on 13 December 2013 and is scheduled to enter into force beginning of 2015. The second level ordinance under FinfraG will be developed in parallel to FinfraG. It is planned to establish a recognition regime for foreign FMIs wishing to provide services to a regulated Swiss trading platform or to Swiss financial institutions. FinfraG will also contain regulatory requirements for FMI operators. FinfraG will apply to all FMIs in Switzerland, except payment systems operated by the SNB.

**15. In September 2013, the European Securities and Markets Authority (ESMA) published its advice to the European Commission, concluding that the Swiss regulatory and supervisory regime for CCPs is considered equivalent to EU regulation.** In case the European Commission concurs with ESMA's advice Swiss CCPs may obtain a passport to provide their services in the EU. SIX x-clear AG applied to ESMA on 12 September 2013 for a European passport to provide clearing services to clearing members and trading venues established in the EU.

**16. A reform that is scheduled for the future is the planned participation of SIX SIS AG in TARGET2 Securities (T2S).** SIX SIS AG intends to participate in the T2S securities settlement system as custodian on behalf of its participants. T2S is currently developed by the European System of Central Banks and is set to go live in 2015. By signing the T2S Framework Agreement SIX SIS AG committed to be part of the first wave of implementation.

## ASSESSMENT OF SELECTED ISSUES

### A. Effectiveness of the Supervision and Oversight of FMIs

#### Appropriateness and transparency (Responsibilities A, C and D)

**17. Systemically important FMIs in Switzerland are subject to appropriate oversight by the SNB.** The NBA and NBO clearly describe when an FMI is considered systemically important and subsequently should be subject to SNB's oversight. The NBO specifies minimum criteria that are based on the PFMI, including governance, risk management and transparency requirements, and allow for a consistent application to all systemically important FMIs. The oversight of the SNB also applies to payment and securities settlement systems whose operators are domiciled abroad, provided that substantial parts of the operations or leading participants are domiciled in

Switzerland. The oversight of domestic FMIs consists of regular reporting of key statistics and risk information, meetings, assessments and the implementation of improvements if needed.

**18. SIX SIS AG and SIX x-clear AG are also subject to appropriate supervision by FINMA.**

Following the crisis and in preparation of the FinfraG FINMA has increased its focus on FMIs. SIX SIS AG and SIX x-clear AG have been designated as category 1 institutions under FINMA's supervision, reflecting their importance to the market. A dedicated supervision plan has been developed and the CCP and CSD have been subjected to a comprehensive assessment, in line with the requirements of the PFMI. The assessment results have been communicated within FINMA and with SIX Group AG in combination with a letter of expectations formulating further necessary improvements.

**19. The new act FinfraG is expected to significantly improve the regulation and supervision of FMIs in Switzerland. The act is planned to be submitted to Parliament in 2014.**

FinfraG will replace the BA and the Federal Act on Stock Exchanges and Securities Trading (SESTA) as FINMA's legal basis for the supervision of SIX x-clear AG and SIX SIS AG. Requirements for FMIs under FinfraG will be tailored to FMIs and publicly available. As such FinfraG will improve clarity and transparency regarding FINMA's criteria to identify FMIs. FinfraG will provide FINMA with increased supervisory powers, for example with regard to the approval of interoperable links between CCP's or CSDs. FinfraG will also fill certain legal gaps. It will provide the legal basis for segregation and portability of positions and collateral, and recovery and resolution of FMIs. It will also provide the basis for supervision of trade repositories.

**20. The various acts governing the supervision and oversight are publicly available, but policies on FINMA's supervision of the CCPs and CSD are not publicly available.**

SNB's oversight mandate, policies and activities are publicly available. The SNB annual report includes a high-level statement on the FMIs' compliance with regulatory requirements and the main focus of SNB's oversight activities in the past year. Further, SNB's annual report highlights important developments regarding FMIs and changes to its oversight policies. The BA, FINMASA and SESTA and FINMA's circulars are publicly available. FINMA does not disclose publicly its policies for SIX x-clear AG and SIX SIS AG and there's limited public information available about FINMA's responsibilities regarding FMIs.

**21. The Swiss authorities rely on third country authorities for supervision and oversight of non-domestic FMIs.**

This approach aims to limit extraterritorial effects of regulatory requirements. In case a foreign FMI is considered systemically important for Switzerland or if SIX x-clear AG links to a foreign CCP, the Swiss authorities investigate whether that FMI is subject to adequate supervision and oversight in its own country. In practice all foreign CCPs and CSDs that are active in Switzerland, or linked with Swiss FMIs, are regulated by the European Market Infrastructure Regulation (EMIR) or potentially the EU CSD Regulation.

**Powers and resources (Responsibility B)**

**22. The legal and regulatory framework provides FINMA and the SNB with sufficient powers to supervise and oversee FMIs.**

Powers include the power to obtain timely information

and induce change. FINMA has the powers to enforce corrective action. The authorities are allowed to obtain information through information requests, audits and onsite inspections. Box 2 outlines the different tools that FINMA and the SNB have to induce change or enforce corrective action. In practice, neither FINMA nor the SNB has used these powers.

**23. The SNB and FINMA are encouraged to hold a firm stance on the full implementation of the new principles in Switzerland.** SIX Group AG's organization structure and competitive environment continuously challenge the SNB and FINMA to find the right balance between the safety and efficiency of the Swiss FMIs. SIX Group AG is well aware of the importance of the FMIs for the stability and efficiency of the financial system in Switzerland. Nevertheless, the current organization of SIX Group AG does not necessarily provide the optimal structure for placing a high priority on the public interest in all cases. The board of SIX Group AG has to divide its attention between the FMIs and the various other business activities that are mainly of a commercial nature. Also, the CSD and particularly the CCP operate in a highly competitive environment. As collateral is costly, the CCP may face market pressures to compromise on certain features of the risk management framework.

### Box 2. Powers to Induce Change or Enforce Corrective Action

#### FINMA

Where a supervised FMI violates the provisions of the FINMASA, the BA or the SESTA, or if there are any other irregularities, FINMA has the power and mandate based on article 31 FINMASA to restore compliance with the law. FINMA has the following supervisory instruments at its disposal:

- Issue a declaratory ruling (article 32);
- Prohibition from practicing a profession (article 33);
- Publication of the supervisory ruling (article 34);
- Confiscation of any profits (article 35);
- Appointing investigating agents (article 36);
- Revocation of license, withdrawal of recognition, cancellation of registration (article 37);
- Liquidation of the legal entity as result of the revocation of license (article 23quinquies BA);
- Suspension of voting rights connected to shares or stock (article 23ter BA);
- Protective measures according to article 26 BA, article 35a and article 36a SESTA such as:
  - issue directives to the governing bodies;
  - appointment of an investigator;
  - withdraw the power of representation of the governing bodies and remove them from office;
  - remove the audit company;
  - limit the business activities;
  - prohibition from making or accepting payments or undertaking security trades;
  - close the payment system, SSS, CSD and CCP;
  - decree a stay of enforcement and postponement of maturity.

#### SNB

If an FMI fails to comply with minimum requirements, the SNB can issue a recommendation and an order (article 38f NBO). If the FMI does not follow the order, sanctions can be imposed. According to article 23(2) NBA, these include reporting findings to the Swiss (esp. FINMA) and foreign supervisory and oversight authorities, refusing the opening of a sight deposit account for the operator, or terminating an existing sight deposit account, and the publishing of an order in the Swiss Official Gazette of Commerce or the publishing of such matter in any other manner.

Sources: BA, FINMASA, NBA, NBO

**24. FINMA and the SNB have sufficient resources to fulfill their mandates regarding the supervision and oversight of FMIs.** FINMA has five full time employees dedicated to the regulation and supervision of trading platforms and FMIs, excluding the unit manager. SNB's team also has a sufficient number of staff members.

#### **Cooperation in normal and stress circumstances (Responsibility E)**

**25. The Swiss authorities cooperate with each other and with relevant foreign authorities in their supervision and oversight of FMIs.** Appendix 5 lists the different cooperation arrangements and specifies the signatories, systems, types of cooperation and the existence of crisis management frameworks. The scope of domestic cooperation comprises SIX x-clear AG and SECOM/SIX SIS AG. Internationally FINMA and the SNB have cooperation arrangements with the authorities of Denmark, Finland, Germany, Netherlands, Norway, Sweden and the UK. The scope of these arrangements relate to the joint responsibilities with the UK authorities on LCH.Clearnet Ltd, with the German authorities on Eurex Clearing, with the Scandinavian authorities on Oslo Clearing and the authorities involved in the interoperability links of SIX x-clear and other European CCPs. The SNB also has cooperation arrangements with other central banks for the oversight of the global systems CLS and SWIFT.

**26. Domestic cooperation is constructive and the Swiss authorities manage to 'speak with one voice'.** There is no lead supervisor or lead overseer for Swiss FMIs, except for SIC AG, which is only subject to oversight of the SNB. FINMA and the SNB have their own responsibilities based on their respective legal and regulatory frameworks. Although there's overlap regarding SIX x-clear AG and SIX SIS AG inconsistencies and gaps are avoided through frequent and constructive communication and coordination. The SNB and FINMA consult each other as part of their assessments of FMIs as stipulated in the relevant legal and regulatory frameworks. Joint meetings are organized with SIX Group AG if appropriate or otherwise the authorities brief each other on the outcomes of the meetings. The SNB and FINMA also cooperate in implementing the G20 reform agenda in Switzerland.

**27. International cooperation is typically facilitated by a MOU or similar written procedure governing the exchange of information. Cooperation arrangements on the interoperable link between CCPs should be enhanced.** Cooperation between the Swiss and foreign authorities typically consists of information sharing arrangements and a face to face meeting on at least an annual basis. Foreign authorities are consulted by email or in regular and ad hoc meetings. High-level assessment results may be shared during those meetings. All MOUs contain specifications on the lead supervisor, which is typically the authority with primary responsibility in the FMI's home jurisdiction. The cooperation arrangements for the interoperability between CCPs relies on MOUs signed bilaterally between involved authorities. The authorities meet in an informal setting. The PFMI do not contain specific requirements for cooperation among authorities that jointly supervise links. Nevertheless, as the links between the CCPs may potentially be a channel of contagion across

markets a tightening of cooperation is necessary,<sup>5</sup> for example by establishing a secretariat that supports the meetings among the relevant authorities and in particular by developing crisis management arrangements (see next paragraph).

**28. The domestic cooperation arrangements do not contain crisis management arrangements, and need to be upgraded.** An MOU has been established between the FDF, FINMA and the SNB regarding their cooperation in the event of a crisis. While this MOU can also be applied in case of a crisis related to FMIs, it is not very specific for such a purpose. It is important that the SNB and FINMA strengthen the cooperation arrangements to manage financial and operational crisis events related to FMIs, for instance under the umbrella of the MOU among FDF, FINMA and SNB. Such an arrangement may facilitate effective and timely communication and potentially avoid losses or reduce the size of financial losses following crisis events.

**29. Likewise, the cooperation with foreign authorities needs to include crisis management arrangements.** All MOUs with foreign authorities should include crisis management arrangements, which should be regularly tested. Testing is important to identify and manage particular cross-border issues during periods of market stress. The cooperation among authorities involved in the CCP interoperability arrangements should also develop a crisis management framework given the systemic relevance of the links.

## B. Risk Management Framework of SIX Group AG

### Company risk management framework

**30. SIX Group AG has a comprehensive risk management framework in place to manage the various risks within its organization.** The framework consists of top down decision making and bottom up risk assessment exercises. The board of directors of SIX Group AG is ultimately responsible for risk. It decides on risk appetite and sets limits for different types of risks. It approves the group's risk policy and delegates risk management tasks further down the organization. The risks are assigned to risk categories (e.g., strategic, business, financial, compliance, operation, planning, reputation), which are regularly monitored and reevaluated at different levels within the organization. Regular reporting on risks ensures that the information from the different group entities is reported up the hierarchy. Appendix 6 contains a detailed outline of the different roles and responsibilities within SIX Group AG.

**31. The risk management frameworks of SIX Group AG and its subsidiaries are subject to regular and independent internal control and audit programs.** SIX Group AG has an internal control system in place that consists of regulations, internal directives and corresponding measures. The objective of the internal control system is to ensure that business operations are conducted properly. The internal control system is updated on an annual basis and regularly controlled by

<sup>5</sup> See also ESMA/2013/322, Guideline and Recommendation 5.

internal and external auditors. Comprehensive internal and external audits programs also cover the business and risk management procedures and systems of SIC AG, SIX x-clear AG and SIX SIS AG.

**32. SIX Group AG's reporting lines do however not sufficiently support the independence of the risk management and control functions.** Currently the risk management function within the division securities services reports to the management of the division. No formal reporting line exists between the division's risk management function and the risk control function of the chief risk officer (CRO) at the group level. The CRO reports to the chief financial officer (CFO), who is a member of the management board of the SIX Group AG. The CRO has no direct reporting line to an independent member of the board of directors as required by the PFMI, although the risk policy of SIX Group AG formally mandates the CRO to inform the executive board, the risk committee of the executive board and the risk committee of the board of directors about the risk situation of the Group. Independent reporting to the board is important to provide the board with complete and unbiased information about the risks faced by the FMIs and the management of those risks. Independent reporting enables independent board members to exercise objective judgment after fair consideration of all information and views without undue influence from executives. This allows for board decisions that support the stability of the FMIs and/or the stability of the financial system. Given the business model of SIX Group AG, with a comprehensive set of business activities, it is even more important that the reporting lines support the independency of the risk management and control functions.

### **Effectiveness of risk management**

**33. The overall risk management function is effective.** The FMIs have operated smoothly for many years without any substantial outage or other technical or financial problem. The Lehman Brothers default in 2008 was handled properly, also because challenges were limited with Lehman Brothers having only small positions in the SSX small and mid-cap segment.

**34. Incentives are in place for participants to manage the risks they pose to the FMIs.** As a 'user owned - user governed' organization participants are closely involved in the safety and efficiency of SIX Group AG. The fee structure of SIC AG rewards participants that settle payments early during the settlement cycle. Participants of SIX x-clear AG are exposed to the default of other CCP participants through the default fund and are as such incentivized to ensure that the CCP's risk management framework is solid. Incentives are also available within the risk management framework of SIX SIS AG. Any losses related to the default of a liquidity provider of foreign currencies will be passed on to the participants of SIX SIS AG, encouraging them to carefully manage these exposures.

**35. The PFMI reform agenda is however substantial requiring significant upgrades to the current risk management framework.** Compliance with the NBO, which reflects the PFMI, is requested by mid 2014, which will be challenging given the size and number of reforms. The agenda includes among others i) 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 within SIX Group AG; ii) the establishment of a comprehensive liquidity risk

management framework for the CCP and CSD; iii) enhancements to the credit risk management framework of the CCP and CSD; iv) the full contractual and operational implementation of the segregation and portability of a participant's positions and collateral and policies regarding segregation and portability of a participant's client's positions and collateral at the CCP; vi) publication of the CPSS-IOSCO disclosure framework for the three FMIs; and vii) the development of a plan for recovery and orderly winding down of operations.

**36. The risk management of interdependencies is very relevant for SIX Group AG given its inclusive organization structure and links with foreign FMIs.** SIX Group AG currently addresses legal, operational and financial risks at a group level. Legal risks are mitigated through a consistent legal approach throughout the group. Business continuity planning of operations is conducted at the group level and credit lines are granted and monitored at group level for the different entities. More can be done however as required by the PFMI. Several interdependencies may exist between and among the three FMIs SIX Group AG, which potentially may cause unexpected additional disruptions and/or losses in extreme circumstances. A first example of a possible interdependency concerns potential financial or operational disruptions at one entity within the Group that may spread to other entities within the Group, for example business losses in one entity that impact the resources at the group level and impact financial obligations of the group to other entities. The risk management framework of the FMIs should address such interdependencies. Another interdependency may relate to participants with membership in more than one FMI. The crisis management arrangements, including default procedures, of SIX Group AG should explicitly cover potential defaults of such members, analyzing and addressing if and how the failure of such a participant may create additional and unexpected losses and whether assumptions in the default and crisis management frameworks of the individual FMIs still hold. A third example of interdependencies relates to those entities that are relevant to the FMIs in different roles such as custodians, liquidity providers and market makers roles and how their failure may impact the different FMIs simultaneously.

**37. SIX Group AG should regularly analyze whether such interdependencies exist and take action to mitigate risks arising from potential risks related to interdependencies.** Tools to address those interdependencies are crisis management arrangements outlining different scenarios of disruptions potentially caused by those interdependencies. The crisis management arrangements should be tested with participants. Either the authorities or SIX Group AG may initiate a test exercise, involving all relevant stakeholders to identify ex ante the necessary measures that need to be taken to prevent or limit risks from interdependencies.

**38. The three Swiss FMIs generally observe the old international standards regarding the management of credit, liquidity, operational and other types of risks and are preparing for upgrades in line with the PFMI requirements.** Appendix 7 provides an overview of the current tools of SIC AG, SIX x-clear AG and SIX SIS AG to manage various types of risk. The most prevalent area of improvement concerns liquidity risk management. All FMIs need to upgrade their framework to effect settlement and meet other payment obligations on time under a wide range of potential stress scenarios. To that purpose the FMIs should be able to conduct liquidity stress testing on a

daily basis. SIX x-clear's initial margin calculation should be further developed to ensure that its potential future exposures are covered with a single-tailed confidence level of 99 percent. Currently, this requirement is not fully met as participants benefit from a threshold that needs to be met before a margin call is made, potentially reducing the confidence level. Another prevalent area of improvement concerns the testing of default plans with participants, linked FMIs, authorities, and other relevant service providers. Regular testing and review of default procedures helps the FMI and its stakeholders to better understand the procedures and improve them if needed.

**39. The management of risks related to links with foreign FMIs is continuously improving; further work is needed to manage credit and liquidity risks related to the links with foreign CSDs.** Risks related to the interoperability of SIX x-clear AG, LCH.Clearnet Ltd, EMCF and EuroCCP has improved over the last couple of years in close cooperation with the regulators in Switzerland, the UK and the Netherlands. The additional credit exposures are covered by margin and deposited with Clearstream Banking Luxembourg. The risk management of links between SIX SIS AG and other CSDs is primarily managed through legal contracts and due diligence of custodians. Credit risks in the cross-border settlement arrangements and particularly through the involvement of local custodians and subsequent liquidity risks should be further mitigated.

**40. The public disclosure of responses to the CPSS-IOSCO disclosure framework for FMIs will further help participants to manage the risk of participating in the FMIs.** The objective of the disclosure framework is to provide sufficient information to enable participants to have an accurate understanding of the risks, fees and other material costs they incur by participating in the FMI. The disclosure of information should follow the framework as provided by CPSS and IOSCO and be published on the Internet and eventually other generally accessible media.

## Recovery and resolution

**41. SIX Group AG and the FMIs it operates have started to develop a recovery plan.** The objective of a recovery plan is to sustain critical services of the FMI. The FMI should therefore, in line with the PFMI and additional CPSS-IOSCO guidance, identify critical operations as well as scenarios that may potentially prevent it to continue operations. The number and nature of the scenarios should go beyond the default of several clearing members, prolonged business losses and reverse stress tests. The scenarios may cover extreme but plausible events, such as the default of more than one large participant that fulfills various roles to the CCP. In addition, reduced liquidity in supporting markets, such as the FX market should be considered. SIC AG is currently developing recovery and orderly wind-down plans, including plans to ensure sufficient liquid net assets funded by equity. This is part of their work to comply with the new requirements of the NBO. SIC AG expects that a recovery plan will be available within the next 6 months. SIX x-clear AG and SIX SIS AG have also started to prepare a recovery plan.

**42. Emergency liquidity assistance by the SNB is not part of the recovery plans; however, SNB may provide emergency liquidity assistance to systemically important FMIs under certain conditions.** In accordance with its mandate to contribute to the stability of the financial system and with article 9 of the NBA, the SNB acts as lender of last resort. In this function, it can provide

extraordinary liquidity assistance to FMIs if they are no longer able to refinance their operations. The provision of extraordinary liquidity depends on the following conditions: (i) the FMI requiring credit must be of systemic importance for the stability of the financial system; (ii) the FMI requiring credit must be solvent; and (iii) sufficient collateral must be provided at all times to cover the liquidity assistance. The SNB determines what collateral is sufficient. The SNB does not commit to emergency liquidity assistance and keeps discretionary powers to avoid moral hazard. Hence, emergency liquidity assistance by the SNB cannot be part of FMIs' recovery plans.

**43. FINMA will be the competent resolution authority for FMIs.** In line with the international work on resolution frameworks for FMIs, led by the Financial Stability Board, the Swiss authorities are planning a dedicated resolution regime for FMIs under FinfraG. Currently FINMA has already resolution powers for SIX x-clear AG and SIX SIS based on the BA and SESTA. If FinfraG comes into force the resolution powers will be based on the new act.

## RECOMMENDATIONS

### Recommendations on the supervision and oversight of FMIs

**44. The FinfraG should be passed by Parliament as soon as possible to complete the regulatory reform agenda for FMIs in Switzerland and improve the legal basis for the supervision of FMIs.**

**45. FINMA is encouraged to publicly disclose its policies related to FMIs.** FINMA's website will benefit from further attention to FMI specific issues.

**46. The SNB and FINMA are encouraged to hold a firm stance on the full implementation of the new principles in Switzerland in an environment focused on efficiency and subject to competition.**

**47. The SNB and FINMA should upgrade their domestic and foreign cooperation arrangements to be able to handle crisis events effectively and in a timely manner.** The domestic cooperation arrangements may prove insufficient during crisis events in the absence of a lead supervisor or overseer of the FMIs. It is recommended that the Swiss authorities develop a dedicated crisis management framework, for instance under the umbrella of the FDF-FINMA-SNB MOU, indicating the roles, responsibilities and potential tools of the SNB and FINMA to manage a crisis. The crisis management framework should be regularly tested and updated. Crisis arrangements should also be part of the different MOUs with foreign authorities in which the Swiss authorities are signatories.

### Recommendations on the risk management framework of SIX Group AG

**48. The independence of the risk management and control functions of SIX x-clear AG and SIX SIS AG needs to be enhanced and reflected in the reporting lines of the organization.** Different models are possible, but the risk management and control functions should in any case

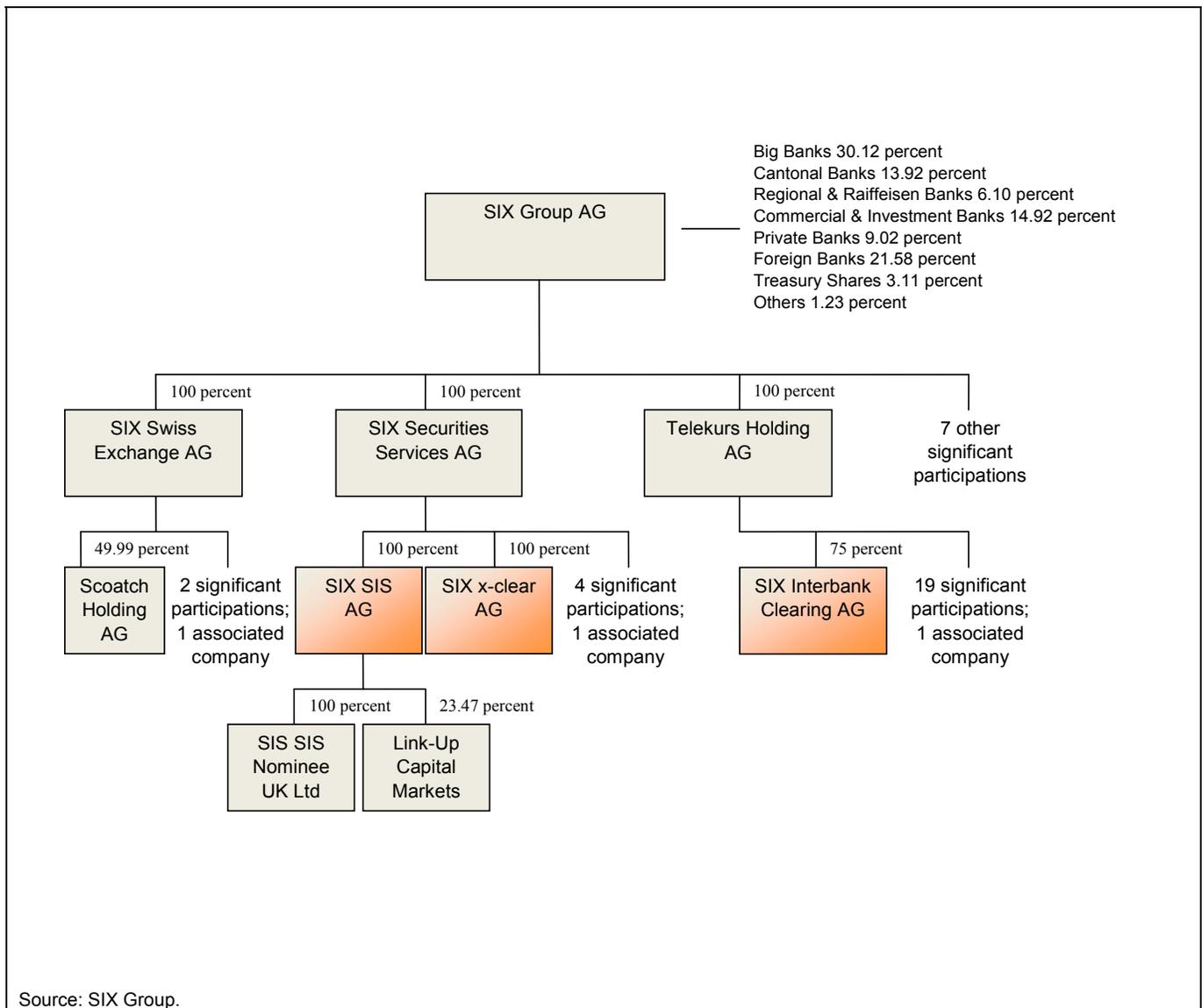
have an additional direct reporting line to a non-executive director on the board via a CRO (or equivalent).

**49. The risk management framework of SIX Group AG will further improve by explicitly analyzing any interdependencies that are not addressed yet**, in particular between different entities within the group, and in relation to participants that are active in more than one FMI or other business entity and fulfill different roles for SIX Group AG, such as liquidity provider, market maker and custodian.

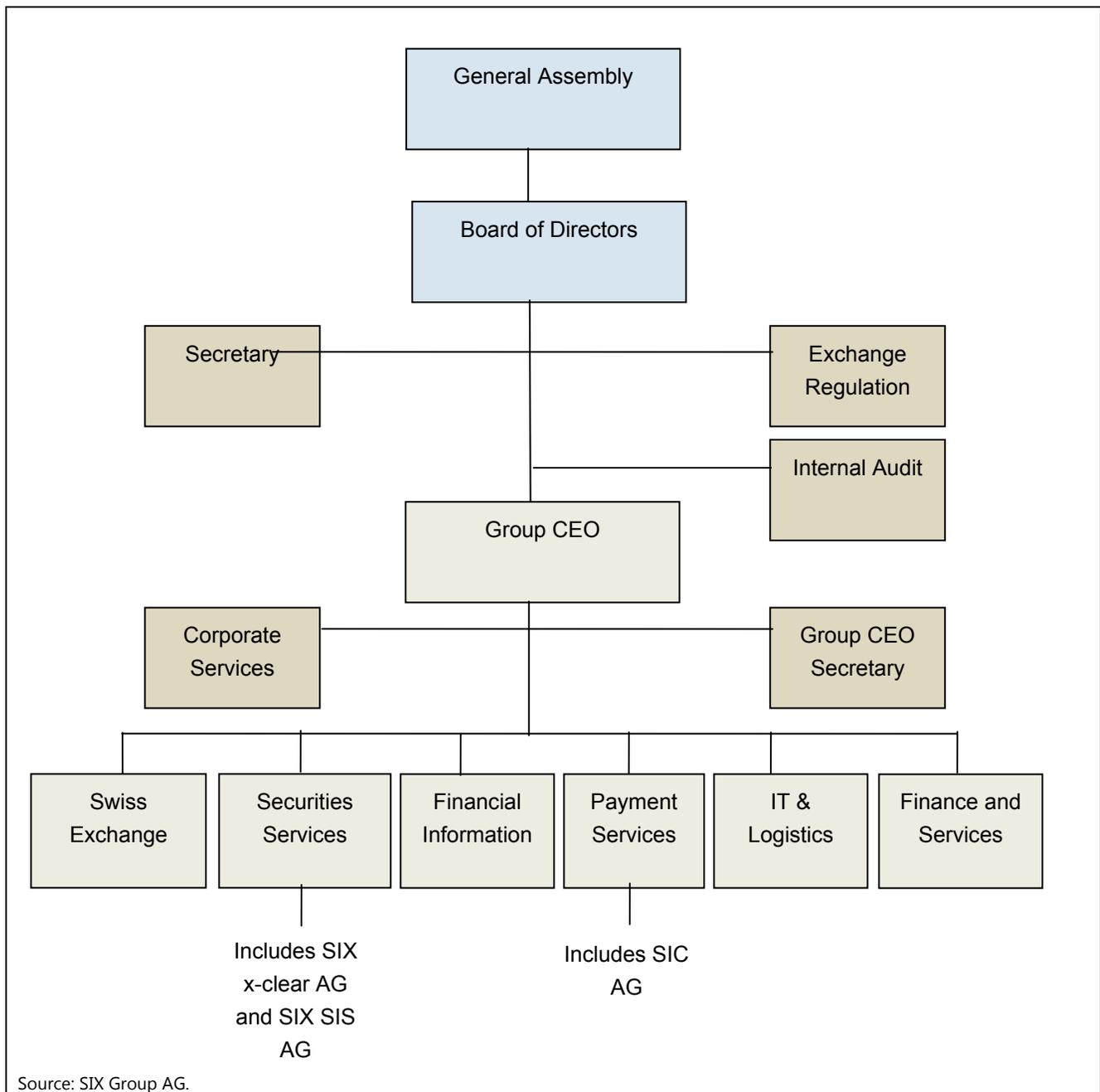
**50. SIC AG, SIX x-clear AG and SIX SIS AG should further improve their risk management framework by complying with the PFMI, as reflected in the revised NBO.** Prevalent areas for improvement are the development of liquidity risk management frameworks, upgrades to the initial margin calculation requirements of participants and the testing of default procedures with participants and other relevant stakeholders.

**51. The Swiss FMIs should develop a recovery plan in line with ongoing international guidance to ensure the continuation of critical operations in extreme circumstances.** It is recommended to develop scenarios that cover extreme but plausible events, such as the simultaneous default of several large members, a linked CCP, a large custodian and/or a participant that fulfills several roles within SIX Group AG. In addition, reduced liquidity availability in supporting markets could be considered. Loss sharing arrangements may be developed that provide appropriate incentives to owners/ participants to ensure that the FMIs have a sound risk management framework and limit the negative impact of these arrangements on the financial market as a whole.

## Appendix I. Legal Structure SIX Group AG (Simplified, June 2013)



## Appendix II. Organization Structure of SIX Group AG



## Appendix III. Detailed Description of Systemically Important FMIs

### Systemically important payment systems

**52. SIC is a systemically important payment system.** The RTGS system SIC settles both large value payments, including those related to the SNB's monetary policy operations, and retail payments. SIC settles each payment irrevocably and with finality. At the end of September 2013 the SIC system had 371 participants with direct access. Participants include the large majority of Swiss banks, but also foreign banks, and FINMA-regulated insurance companies that are highly active in the money market as well as foreign FMIs without a banking license, provided they are adequately regulated, and contribute to the stability of the financial system or the smooth flow of payment transactions. Table 3 presents key statistics for SIC. The relatively high number of transactions is predominantly due to the large number of retail payments being individually settled in SIC.

**Table 3. Switzerland: Key Statistics SIC, SIX x-Clear AG and SIX SIS AG**

	2012	2011	2010
SIC – number of transactions (in 1,000)	410,180	402,475	394,734
SIC – value of transactions (in CHF million)	30,243,582	37,878,983	39,526,551
SIX x-clear AG – number of total clearing transactions (in 1,000)	91,559	50,817	41,680
SIX x-clear AG – number of cross border clearing transactions (in 1,000)	74,300	26,000	19,400
SIX x-clear – value of clearing transactions (in CHF billion)	977	865.5	900
SIX SECOM – number of total settlement transactions (in 1,000)	23,808	27,183	23,397
SIX SECOM – number of cross border settlement transactions (in 1,000)	8,670	7,349	5,755
Deposit volume (in CHF million)	2,687,494	2,554,868	2,846,559

Source: SIX Group AG.

**53. The SNB has outsourced the operations and development of the SIC system to a subsidiary of SIX Group AG, but still acts as the system manager and settlement agent.** The subsidiary SIC AG of SIX Group AG operates the SIC system on behalf of the SNB. SIX Group AG owns 75 percent of SIC AG, while PostFinance owns 25 percent. The SNB has a representative on the board of directors of SIC AG. The responsibilities and duties of SNB and SIC AG are laid down in a contract. SIC AG operates and maintains the processing centers, develops and maintains the SIC software and manages the data files. It develops rules for the SIC system and is responsible for the security and communication network. As the system manager the SNB determines the access criteria for the SIC system, monitors daily operations and is involved in business continuity management.

**54. Although SIC AG is operated by a private entity, settlement in the SIC system is conducted in central bank money.** The SNB provides participants with a sight deposit account in central bank money. SNB's intraday and overnight liquidity facilities are linked to this account. In addition, SIC participants have to open a settlement account in the SIC system, which is operated by SIC AG, to be used for the daily settlement operations. Although participants technically have two accounts, the accounts are legally considered as one. Settlements in the SIC system are therefore considered settlements in central bank money. In addition SIC participants can open an account for foreign exchange settlements in CLS.

#### **Systemically important CCPs**

**55. SIX x-clear AG is a systemically important CCP located in Switzerland that clears securities traded on SSX and other trading venues.** SIX x-clear AG is licensed as a bank and had 72 participants at the end of August 2013. A total of 12 participants are so-called general clearing members that also clear on behalf of other financial institutions. SIX x-clear AG offers its participants clearing services for securities traded on domestic and foreign exchanges and trading platforms. These comprise of SSX, the LSE and various multilateral trading platforms (MTFs), such as the UBS MTF, Equiduct and recently to BATS-Chi-X and Turquoise. SIX x-clear AG guarantees settlement despite the default of one of the counterparties to the transaction. SIX x-clear AG's clearing activities for UK-based exchanges and trading platform are allowed under its status as recognized overseas clearing house (ROCH), granted by the UK authorities. SIX x-clear AG does not clear exchange traded or OTC derivatives transactions. Table 3 contains key statistics for SIX x-clear AG.

**56. The SNB also considers LCH.Clearnet Ltd and Eurex Clearing AG as systemically important CCPs for the Swiss financial system.** LCH.Clearnet Ltd is systemically important as it clears transactions executed on SSX. The CCP Eurex Clearing AG clears derivatives denominated in Swiss francs or based on Swiss underlying values and is as such systemically important. Eurex Clearing AG is incorporated in Germany and licensed as a credit institution under the supervision of the German regulator BAFIN, in cooperation with the Deutsche Bundesbank.

**57. SIX x-clear AG leverages wherever possible on services of other affiliated companies of SIX Group AG.** The 14 FTE staff within the SIX x-clear AG subsidiary are mainly responsible for the operational risk management functions, such as the margin and default fund calculations, the collection of collateral and the default process. Other activities are outsourced to SIX SIS AG, e.g.,

the settlement and monitoring of transactions, and SIX Securities Services AG, e.g., the risk management function. The operation and maintenance of the computer center is outsourced to the IT department within SIX Group AG and governed by service level agreements as required by FINMA regulations.

**58. SIX x-clear AG has interoperability arrangements with CCPs based in the Netherlands and the UK, which exposes the CCP to additional credit risk.** The interoperability arrangement allows market participants to access various trading platforms via one CCP. Since 2004 SIX x-clear AG and LCH.Clearnet Ltd have an inter-CCP link in place to serve participants that trade on the SSX and LSE. Recently, interoperability has been established with two other CCPs, the Netherlands based EMCF and the UK based EuroCCP, for the clearing of MTFs BATS Chi-X and Turquoise. Their relationship is governed by a Master Clearing Link agreement that prescribes rights and obligations of the interoperable CCPs. The CCPs cover the exposures to each other through additional margin deposits at accounts in Clearstream Banking Luxembourg.

**59. SIX x-clear AG's operating income in 2012 was negatively impacted by competition with other European CCPs.** Although the number of transactions increased by 80 percent, operating income decreased. The increase in transactions is the result of adding the trading platforms BATS Chi-X and Turquoise to the platforms cleared by SIX x-clear AG. Competition with other CCPs led however to price pressures and subsequently a reduction in operating income.

### **Systemically important SSS and CSD**

**60. SECOM, operated by SIX SIS AG, is the systemically important SSS and CSD in Switzerland.** SIX SIS AG is licensed as a bank and supervised by FINMA and has approximately 400 participants. Banks and securities dealers from Switzerland and abroad that are subject to adequate regulation and supervision may become members of SIX SIS AG. In addition, several stock exchanges and trading platforms, clearing houses, PostFinance, the SNB and insurance companies participate in SIX SIS AG. SIX SIS AG settles tradable financial instruments in Switzerland via its SECOM system. Most of the equities, bonds and ETFs issued under Swiss law as well as the derivatives traded at the SIX Structured Products Exchange's Swiss market segment are held in custody by the CSD.

**61. SIX SIS AG provides its participants with credit lines to increase settlement efficiency.** As a bank SIX SIS AG is allowed to provide credit to facilitate settlements in foreign currencies, mainly euro, dollars and pounds. Participants can open cash accounts within SECOM in foreign currencies. SIX SIS AG makes use of commercial banks to obtain foreign liquidities. Early 2013 SIX SIS AG improved its risk management framework by fully collateralizing its credit extensions.

**62. SIX SIS AG is highly interconnected with foreign CSDs.** SIX SIS AG offers direct links to other international and national CSDs in Europe. It is also a founding member of Link Up Markets, which facilitates interoperability between CSDs for cross-border securities custody and settlement. Furthermore, SIX SIS AG has a network of correspondents in all major markets around the globe, allowing it to provide access to over 50 foreign markets through indirect links as a custodian.

## Appendix IV. Legal Framework Governing FMIs in Switzerland

Law	Objective	Authority	FMI
Federal Law on Banks and Savings Banks (Banking Act or BA)	The act governs banking activities in Switzerland.	FINMA	SIX x-clear AG and SIX SIS AG.
Swiss Financial Market Infrastructure Act (FinfraG)	Published for consultation on 13 December 2013 and planned to enter into force at the beginning of 2015.	FINMA	Payment systems (excluding those operated by central banks), SSS, CSDs, CCPs and TRs. Covers also regulated exchanges and trading platforms.
Federal Act on the Swiss Financial Market Supervisory Authority (FINMASA)	FINMASA establishes the organization and the supervisory instruments of the FINMA. Its objectives are the protection of creditors, investors, and insured persons as well as the insurance of the proper functioning of the financial market.	FINMA	Systems under the BA and SESTA
Federal Act on Stock Exchanges and Securities Trading (Stock Exchange Act or SESTA)	SESTA regulates the conditions for the establishment and operation of exchanges and professional investors to ensure transparency and equal treatment. SESTA provides a framework to govern the good functioning of the securities market.	FINMA	Systems for the clearing and settlement of payments and of transactions with financial instruments, in particular securities (but none in practice).
FINMA Circulars, in particular 08/24, 08/7, 13/3, 11/2, 8/21.	The circulars stipulate provisions on internal control and governance, outsourcing, regulatory audit, capital buffers and capital planning and operational risk.	FINMA	SIX x-clear AG and SIX SIS AG
Liquidity Ordinance (LO)	Liquidity requirements	FINMA	SIX x-clear AG and SIX SIS AG (SIX x-clear is exempt from the liquidity coverage ratio)
Federal Act on the Swiss national Bank (National Bank Act or NBA)	The NBA governs the authority of the SNB, including the oversight of payment and securities settlement systems.	SNB	SIC, SIX x-clear AG and SIX SIS AG.

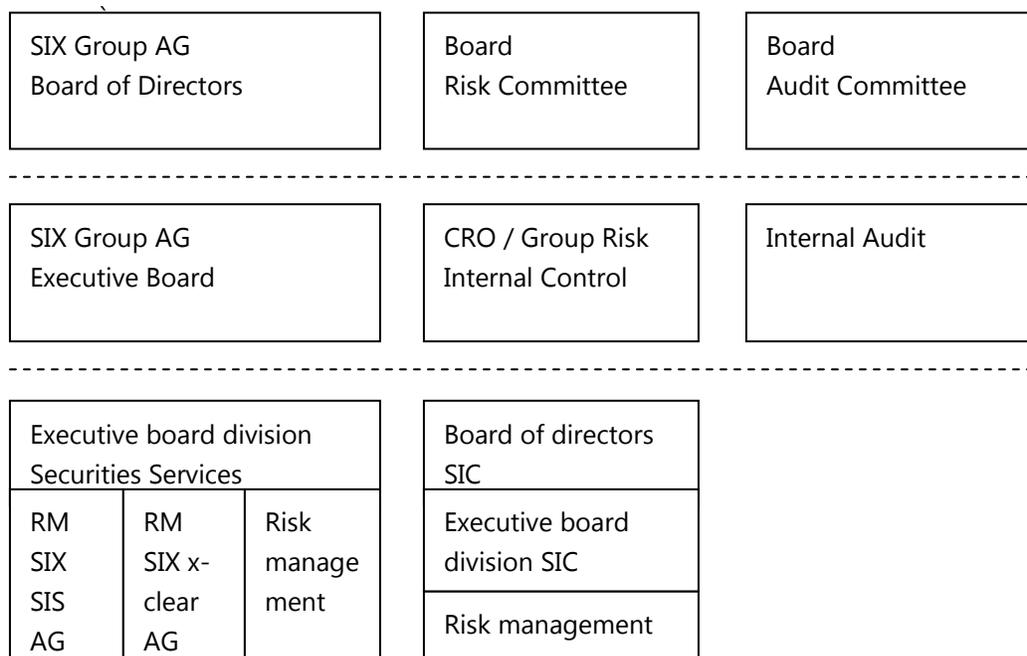
<b>Law</b>	<b>Objective</b>	<b>Authority</b>	<b>FMI</b>
Ordinance to the Federal Act on the Swiss National Bank (National Bank Ordinance or NBO)	The NBO governs: <ul style="list-style-type: none"> <li>a. The conduct of statistical surveys by the SNB</li> <li>b. The obligation of the banks to hold minimum reserves.</li> <li>c. The oversight of FMIs</li> </ul>	SNB	SIC, SIX x-clear AG and SIX SIS AG.

## Appendix V. National and International Cooperation Agreements

Infrastructure	Type	Authorities Involved	Scope
SIX x-clear AG SIX SIS AG (domestic)	Primarily based on legal provisions SESTA (34a), BA (23bis), FINMASA (39) and NBA (21, 50). Crisis arrangements are also based on the tripartite MOU between SNB, FINMA and the Ministry of Finance ( <a href="http://www.finma.ch/e/aktuell/Documents/MoU-tripartit-2011-e.pdf">http://www.finma.ch/e/aktuell/Documents/MoU-tripartit-2011-e.pdf</a> )	FINMA and SNB	Legal provisions: Information sharing, cooperation and coordination in the supervision of domestic systemically important securities settlement systems and CCPs; frequent meetings. Tripartite MOU: Crisis management arrangements
SIX x-clear AG (UK)	MOU	FINMA, SNB and UK authorities Lead: Swiss authorities	Information exchange, cooperation and coordination in the supervision and oversight of SIX x-clear AG. At least annual meetings. No specific crisis management arrangements.
LCH.Clearnet Ltd	MOU ( <a href="http://www.bankofengland.co.uk/about/Documents/MOUs/fsa_swiss.pdf">http://www.bankofengland.co.uk/about/Documents/MOUs/fsa_swiss.pdf</a> ), FINMASA article 42/43	FINMA, SNB and UK authorities Lead: UK authorities	Information exchange, cooperation and coordination in the supervision and oversight of LCH.Clearnet Ltd. At least annual meetings. No specific crisis management arrangements.
Eurex Clearing AG	MOU, FINMASA article 42/43	FINMA, SNB and German authorities Lead: German authorities	Information exchange, cooperation and coordination in the supervision and oversight of Eurex Clearing AG. At least annual meetings. The information exchange includes ad hoc information in crisis situation; the crisis information arrangements have not been tested
Interoperability of SIX x-clear AG with EMCF	Exchange of letter and MOU, FINMASA article 42/43	FINMA, SNB and Dutch authorities Lead: None.	Information exchange and cooperation and coordination regarding the supervision and oversight of SIX x-clear AG and EMCF in relation to their interoperability arrangement. No specific crisis management arrangement.
Continuous Linked Settlement	Protocol for the Cooperative Oversight Arrangement of CLS;	SNB and other relevant central banks	Information exchange, cooperation and coordination in the supervision and oversight of CLS. Includes crisis

<b>Infrastructure</b>	<b>Type</b>	<b>Authorities Involved</b>	<b>Scope</b>
	CLS Oversight Guide; CLS Oversight Committee Crisis Communication Framework	Lead: NY Fed	management arrangements which are tested twice a year. SNB represented in RSO and Designee meetings. Around 4 physical meetings and around 3 conference calls per year.
SWIFT	MOU	SNB and other G10 central banks. Lead: National Bank of Belgium	Information exchange, cooperation and coordination in relation to the oversight of SWIFT. SNB member of the OG and TG. Crisis arrangements for information sharing to be included (role of Oversight Group in crisis situation currently under investigation). Meetings of OG and TG around 6 times per year, cumulatively.
LCH.Clearnet SwapClear	Multilateral Arrangement for Regulatory, Supervisory and Oversight Cooperation on LCH.Clearnet Ltd's SwapClear OTC Interest Rate Clearing Service	SNB and other relevant foreign authorities Lead: Bank of England	Information exchange and at least annual meeting regarding the supervision and oversight of LCH.Clearnet Ltd Swapclear. Includes arrangements for emergencies.
SIX x-clear AG	MOU	FINMA, SNB, Danish, Finnish, Norwegian and Swedish authorities Lead: Swiss authorities	Information exchange, cooperation and coordination in relation to the supervision and oversight of SIX x-clear AG. Includes arrangements for emergencies. Currently no meetings as clearing of Nordic markets by SIX x-clear AG have been suspended.
CCP interoperability between LCH.Clearnet Ltd, EuroCCP, EMCF and SIX x-clear AG	Informal roundtable	FINMA, SNB, Dutch and UK authorities Lead: None	Information exchange and coordination of supervision and oversight of the Dutch, Swiss and UK CCPs in relation to their interoperability arrangement. No crisis management arrangement.
Target2Securities	Proposal for Cooperative Arrangement developed as a basis for a more formal arrangement	FINMA, SNB and other relevant foreign authorities of T2S Lead: ECB	Information exchange, cooperation and coordination in relation to T2S. Scope yet to be determined, crisis management arrangement expected to be included.

## Appendix VI. Risk Management Framework SIX Group AG



### Entity within SIX Group AG

### Responsibility and activities

SIX Group AG board  
of directors

Responsible for the overall risk management of the group.

Activities:

- Definition of risk tolerance
- Monitoring of overall risk situation
- Approval of risk policy
- Delegation of risk management tasks to the board risk committee.

SIX Group AG board  
risk committee

Responsible for supervising the risk management and risk monitoring of the group in line with the group risk policy. The board risk committee consists of three to four non-executives members of the board of directors. Risk committee meetings comprise of the Group CEO, CFO and CRO. The board of directors is informed about the risk situation on a regular basis.

Group board audit  
committee

Responsible for accounting and financial reporting, the internal controlling system, the external auditors and the internal audit department. Internal auditors are responsible for the monitoring of risk management and control, in particular the risks related to business processes. The audit committee consists of three to four non-executive members of the board. Audit Committee meetings comprise of the Group CEO, CFO and representatives of the internal

and external auditors. Internal audit reports directly to the audit committee.

Group executive board	Responsible for the performance of risk management activities within the group in line with the group risk policy.
Chief risk officer (CRO)	The CRO is responsible for risk control measures and reports to the CFO. The CFO has a position in the executive board. The CRO sends periodic reports on the group's risk situation for all types of risk to the group executive board and the board risk committee. The Division Risk Controllers are responsible for risk control measures at the division level, including SIX x-clear AG and SIX SIS AG.
Executive board of divisions	Responsible for the performance of risk management activities within the division, in line with the risk policy of the subsidiary that is based on the group risk policy.
Risk management of the division securities services	Sets principles for risk management SIX x-clear AG and SIX SIS AG and validates their risk management models. Monitoring of limits and approval for overstepping of limits.
Risk management SIX SIS AG	Risk management of daily operations, such as extension of credit lines, settlements of funds and securities and securities borrowing and lending.
Risk management SIX x-clear AG	Risk management of daily operations, such as margin calculations, collateral monitoring and default procedures.
Board of directors SIC AG	Responsible for the overall risk management of SIC AG. Activities: <ul style="list-style-type: none"> <li>• Definition of risk tolerance</li> <li>• Monitoring of overall risk situation</li> <li>• Approval of risk policy</li> </ul>
SIC divisional risk manager	Responsible for monitoring the risk exposures and keeps the risk map up to date. The divisional risk manager also updates the group risk controllers, who report to the CRO.

Source: SIX Group AG.

## Appendix VII. Risk Management Tools of Systemically Important FMIs

**Table 4. Switzerland: Operational Risk Management Measures FMIs**

Operational risk management tools	<ul style="list-style-type: none"> <li>• The IT division of SIX Group AG has in place a BCP that covers the IT systems and operations of the whole group, including for SIC, SIX x-clear AG and SIX SIS AG.</li> <li>• The system has 3 datacenters, with a primary site, a hot backup site (5 kilometer distance) and a cold backup site (80 kilometer distance). There's full data synchronization between all sites.</li> <li>• The IT division organizes a change over test (between 2 hot sites) on at least a monthly basis, including participants.</li> <li>• The IT division organizes a change over test to 3<sup>rd</sup> site on an annual basis without participants.</li> <li>• For SIC an additional test is conducted on an annual basis, where SIC participants have to deliver transaction data on tape (called miniSIC).</li> <li>• The recovery time objective is 2 hours.</li> <li>• The SNB in addition has in place an interbank alarm and crisis organization to handle unexpected emergencies related to FMIs</li> </ul>
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Source: SIX Group AG and SNB.

**Table 5. Switzerland: Risk Management Tools SIC**

Credit risk to cover risks related to intraday liquidity facility of the SNB	<ul style="list-style-type: none"> <li>• Access criteria for participants.</li> <li>• Collateral subject to haircuts</li> </ul>
Liquidity risk for participants	<ul style="list-style-type: none"> <li>• Intraday and liquidity shortage financing facilities</li> <li>• Queue management</li> <li>• Split requirements</li> <li>• Optimization routine</li> <li>• Incentives in fee schedule</li> </ul>

Source: CPSS Redbook Switzerland 2011 and discussions with SIX Group AG.

**Table 6. Switzerland: Risk Management Tools SIX x-clear AG**

Credit risk to cover risks related to CCP guarantee	<ul style="list-style-type: none"> <li>• Access criteria for participants.</li> <li>• Initial margin, based on net position per security and its volatility, using a historical value at risk model and 99% confidence interval. Initial margin is determined in real time. Participants have a threshold, basically uncollateralized credit, before a margin call is made.</li> <li>• Variation margin calculated every hour.</li> <li>• A margin call has to be met in 60 minutes.</li> <li>• Collateral subject to haircuts set per asset type. Concentration limits are currently being developed.</li> <li>• Wrong way risk is being addressed in definition of eligible collateral.</li> <li>• Daily back testing of margin model with monthly reporting.</li> <li>• Independent validation of margin model at several levels.</li> <li>• Sensitivity testing is currently developed.</li> <li>• Default fund, consisting of risk-based contributions of clearing members.</li> <li>• One default fund for SSX, LSE and the alternative trading platforms.</li> <li>• One time replenishment of default fund by surviving participants.</li> <li>• Capital of SIX x-clear AG: A portion of capital will be taken in case of a default before default fund contribution of surviving participants is taken ('skin in the game'). Remainder of capital may be taken to cover any remaining losses after use of default fund.</li> <li>• Daily stress testing of available resources with minimum coverage of the largest and/or second largest member's default. Monthly reporting of stress tests.</li> <li>• Default plans are available. The plans are not tested with participants and other stakeholders.</li> </ul>
Liquidity risk CCP	<ul style="list-style-type: none"> <li>• Plans for liquidity risk management are currently developed.</li> </ul>
Interoperability with EMCF, EuroCCP and LCH.Clearnet Ltd	<ul style="list-style-type: none"> <li>• In addition to margins collected on member level by each interoperable CCP using their risk management model, an additional collateral layer was installed by regulators covering the margin requirements of net positions between interoperable CCPs. According to the interoperability arrangements of SIX x-clear AG, the interoperable CCPs (SIX x-clear AG, LCH.Clearnet, EuroCCP and EMCF) collateralize their mutual risk positions through cash and securities pledged with Clearstream Banking Luxembourg. The amount of collateral required is determined by the respective margin models of the individual CCPs. SIX x-clear AG charges its exposures against the other CCPs with the same margin requirements as demanded from its own participants, i.e., the VaR confidence level of 99% is also applied. Compliance of the other CCPs with these requirements is checked several times a day. SIX x-clear AG also conducts daily stress tests on the exposures against each of the interoperable CCP. SIX x-clear AG funds the margins to be provided to the other CCPs with contributions from its participants and own resources.</li> <li>• Reporting requirements: SIX x-clear AG has to provide to the national regulators FINMA and SNB a monthly risk management report on general clearing activity and risks related to interoperability.</li> </ul>

Source: SIX Group AG.

**Table 7. Switzerland: Risk Management Tools SIX SIS AG**

Credit risk to cover risks related to SIS current account advance facilities	<ul style="list-style-type: none"> <li>• Access criteria for participants</li> <li>• Collateralized credit lines (except for credit extended to the SNB and a few FMIs)</li> <li>• Collateral subject to haircuts</li> <li>• Limits on credit extension defined per participant</li> </ul>
Credit risk participants	<ul style="list-style-type: none"> <li>• Delivery versus payment</li> <li>• Irrevocable settlements</li> </ul>
Liquidity risk SIS	<ul style="list-style-type: none"> <li>• Liquidity risk is managed by estimating settlement flows up to T+5 in SECOM.</li> <li>• Plans for additional liquidity risk management tools, including stress tests, are currently developed.</li> </ul>
Liquidity risk participants	<ul style="list-style-type: none"> <li>• Securities borrowing and lending facility</li> <li>• SIS current account advance facilities in domestic and foreign currencies</li> </ul>
Custody risk	<ul style="list-style-type: none"> <li>• Only contract with custodians that have an effective account segregation regime.</li> </ul>
Settlement bank risk	<ul style="list-style-type: none"> <li>• Due diligence process for correspondent banks</li> <li>• Limiting size of overnight positions. Exposures to liquidity providers are reduced by repos and sweeping the accounts at the end of the day.</li> <li>• Daily reconciliation of SIS' own records with its holdings of securities in custody with foreign CSDs.</li> </ul>
Investment risk	<ul style="list-style-type: none"> <li>• Any remaining losses following the default of a liquidity provider will be passed on to participants of SIX SIS AG.</li> </ul>
Risks related to links	<ul style="list-style-type: none"> <li>• Due diligence of potential CSDs/FMIs or any other intermediaries according to requirements in the law, corporate directives and guidelines. The due diligence process includes assessing financial, legal and operational variables (rating, country of origin, legal separation of assets, diversification, custody agreement, quality and experience of counterpart, quality of system and technology and fees).</li> <li>• SIX SIS AG monitors the counterparty-risks against CSDs and custodians and regularly performs due diligence reviews and request for proposals.</li> <li>• On an ongoing basis, SIX SIS AG diversifies cash placements according to set internal limits.</li> </ul>
Currency risk	<ul style="list-style-type: none"> <li>• Haircuts</li> </ul>
Source: CPSS Redbook Switzerland 2011 and discussions with SIX Group AG.	