

Assessment of Swiss Interbank Clearing against the Core Principles for Systemically Important Payment Systems

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1. Introduction

1.1 Assessors and objective

Assessor: Swiss National Bank (SNB).

Objective: To assess whether the design and operation of Swiss Interbank Clearing (SIC) comply with the internationally recognised «Core Principles for Systemically Important Payment Systems» developed by the Committee on Payment and Settlement Systems (CPSS).

1.2 Scope of the assessment

The payment system being assessed is SIC. SIC is operated on behalf of the Swiss National Bank (SNB) by SIX Interbank Clearing AG (SIC AG). SIC AG is 75% owned by SIX Group AG, while PostFinance holds a 25% stake. SIC AG is responsible for operation and maintenance of the processing centres as well as the communications and security infrastructure. It also develops and maintains the software and manages the data files as well as the organisational and administrative rules of conduct in SIC. As system manager of SIC, SNB lays down the conditions for admission to and exclusion from the SIC system; provides the liquidity necessary for settlement in SIC; sets times when operations begin and end; and maintains the accounts of the participating financial institutions. In addition, the SNB monitors daily operations and is responsible for crisis management in the event of disruptions or incidents.

SIC AG has outsourced certain functions to SIX Group Services AG and SIX Group AG. The outsourced functions cover operation and maintenance of its IT infrastructure; legal and compliance services; financial accounting and controlling; internal audit and human resources management. The assessment covers all functions concerning the SIC payment system, irrespective of whether they are performed by SIC AG, SIX Group Services AG, SIX Group AG or the SNB.

1.3 Market structure

SIC is the central electronic Swiss payment system in which the participating financial institutions process their large-value payments as well as a part of their retail payments in Swiss francs.

At the end of 2009, around 370 Swiss and foreign financial institutions were participating in SIC. The majority of cashless interbank payment transactions in Switzerland are settled through SIC. In addition, the SIC system plays a central role in the implementation of SNB's monetary policy. SIC is therefore very important for the functioning of the Swiss financial centre and is a key element in the Swiss Value Chain. The Swiss Value Chain is the term used to describe the fully electronic integration of trading, clearing and settlement of shares, bonds, money market instruments, derivatives and structured products in Switzerland.

1.4 Regulatory structure

Article 5 (2)(e) of the National Bank Act (NBA) requires the SNB to contribute to the stability of the financial system. The oversight of payment and securities settlement systems is one of the instruments at the disposal of the SNB for furthering financial stability. The relevant legal provisions and implementation regulations are contained in the NBA and in the National Bank Ordinance (NBO, see arts. 19–21 NBA and arts. 18–39 NBO). On 13 December 2004, SNB confirmed in an official note that SIC AG is considered to be the operator of a systemically important payment system. As a consequence, the SIC system needs to comply with the minimum requirements as set out in arts. 22–34 of the NBO. The minimum requirements are largely based on international standards, i.e. on the Core Principles for Systemically Important Payment Systems.

1.5 Information and methodology used for the assessment

The assessment follows the standards developed by the CPSS as set out in their «Core Principles for Systemically Important Payment Systems» published in January 2001 by the Bank for International Settlement (BIS).

Assessors gathered sufficient information to formulate assessments of the Core Principles, which were then discussed with SIC AG and updated as appropriate.

The main sources of information encompass: regular reporting, an annual self assessment of the operator, internal as well as external audit reports, regular meetings and meetings upon request.

1.6 Limitation of liability

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2. Assessment of observance

2.1 Executive summary

This assessment takes account of the situation as at January 2010. It is the first published assessment of SIC against the CPSS Core Principles for Systemically Important Payment Systems by SNB. These Core Principles represent an internationally agreed minimum standard of good practices that systemically important payment systems should seek to achieve.

The SIC system observes all Core Principles. The SNB counts on the operator to continue its efforts to strengthen the functioning of SIC and contribute to the stability of the Swiss financial system. In particular, both the operator of SIC and its participants are encouraged to check and improve their contingency arrangements continually.

2.2 Detailed assessments

In the following, each core principle is assessed.

Core Principle I.

The system should have a well-founded legal basis under all relevant jurisdictions.

The legal basis which authorizes the SNB to be active in the field of payment systems is established in article 5 (2)(c) of the National Bank Act (NBA), which stipulates the SNB's statutory role in facilitating and securing the functioning of the cashless payment systems. In consequence, SIC is operated by SIC AG on behalf of the SNB. SIC AG is a private corporation («Aktiengesellschaft») established in Switzerland and governed by Swiss company law.¹ The operation of the SIC system as a systemically important payment system is subject to specific rules of system oversight.²

The rights and obligations of SIC AG as operator of the system, the SNB as system manager and settlement agent and the system participants are set out in three contracts governed by Swiss private law:³

- SIC participants' relationship with the SNB, as provider of settlement accounts, is governed by the SIC giro agreement (*SIC-Girovertrag*). The SIC rules and regulations, consisting of technical rules and regulations and a user manual, are part of this contract and therefore binding for all SIC participants. Besides others, they govern the sequence of the settlement day (including hours of operation and the different phases during an RTGS business day), different types of participation in the system, security issues, contingency arrangements, message standards, settlement of the transaction (including the definition of the moment when the settlement of a payment becomes irrevocable) and various aspects related to system administration.
- SIC participants are also obliged to sign an SIC supplemental contract (*SIC-Ergänzungsvertrag*) with SIC AG in its role as system operator, governing the code of conduct in SIC and in particular the allocation of potential losses.
- The relationship between the SNB and SIC AG is governed by a contract which defines the obligations and duties of each party.

There is no comprehensive single Swiss law that covers all aspects of relevance for a payment system. The enforceability of contracts under private law as well as payment instructions given under the SIC system are governed by the Swiss Code of Obligations (CO).

The CO particularly supports the electronic processing of payments and underpins the SIC rules and regulations in relation to the irrevocability of payment instructions. In this respect, a new provision in the CO which came into effect on 1 October 2009 states that payment instructions are irrevocable with the debiting of the transferor's account unless the rules and regulations of a payment system state otherwise.

Where one of the participants concerned becomes the subject of insolvency proceedings, its rights and obligations are addressed under insolvency laws.⁴ In order to protect the system against systemic risks, article 27 (2) of the Swiss Federal Banking Act (Banking Act) limits the effects of insolvency measures on instructions given to payment systems and protects the finality of a payment in the event of a system participant's insolvency. Under Swiss law there is no «zero-hour rule» which could affect the validity of the transaction order. Protection provided under article 27 of the Banking Act does not refer to a specific calendar day but to the time when the system operator has or should have knowledge of the measures taken by the Swiss Financial Market Supervisory Authority (FINMA). The FINMA is under the statutory obligation to inform – whenever possible – the operators of domestic and foreign payment and security settlement systems of the measures it intends to take and of the exact time when they take effect.

An amendment to the aforementioned law is in progress. Conditional upon the proposed amendment passing into law, article 27 (2) of the Banking Act will apply to all SIC members (foreign banks and SIC participants incorporated in Switzerland that are not a bank or a securities dealer included). However, under the current interpretation of article 27 of the Banking Act, this provision applies only to members of SIC that are either a bank or a securities dealer incorporated in Switzerland. Nevertheless, in the case of non-domestically located banks participating in SIC the legal risks appear to be low since the laws of such participants' home jurisdictions deal with the finality of payments in a satisfactory manner. All SIC non-domestic participants⁵ are currently domiciled in a country that implemented the EU Settlement Finality Directive. The intent of article 27 (2) of the Banking Act was – inter alia – to implement rules on the prevention of systemic risk in line with international standards, in particular with the EU Settlement Finality Directive. A recent revision of the SNB's access policy provides FINMA-regulated domestic insurance companies (among others) direct

¹ See articles 620 *et seq.* of the Swiss Code of Obligations.

² See article 19 NBA.

³ In addition, providers of service payments and indirect SIC participants need to sign additional contracts. Participants with a SWIFT connection need to sign a contract pertaining to participation in the SWIFT closed user group with SIX Interbank Clearing AG.

⁴ See respective provisions in the Banking Act (articles 25–37), Ordinance on the Bankruptcy of Banks. If an SIC participant incorporated in Switzerland that is not a bank or securities dealer becomes insolvent, article 470 (3) CO is applicable. In addition, insolvency proceedings are governed by certain principles of the Swiss Debt Enforcement and Bankruptcy Act.

⁵ Except for CLS Bank.

access to SIC. Although domestic insurance companies do not fall under the current interpretation of article 27 (2) of the Banking Act, there is close cooperation between the FINMA and the SNB with the clear aim of limiting the potential consequences of an insurance's insolvency.

As regards the law governing the collateral arrangements, the Federal Intermediated Securities Act, which entered into force on 1 January 2010, provides a comprehensive and well-established legal basis for the custody of intermediated securities and has strengthened the legal framework.

Taking this into account, the Swiss law provides a well founded legal basis. The contractual provisions provide a complete and unambiguous description of the rights and obligations of each party. The Swiss laws governing contracts, payments processing and insolvency appear to provide a high level of certainty for the enforcement of SIC rules and regulations and, in particular, for the irrevocability of instructions and the finality of settlements in the event of an insolvency of a SIC participant.

Core Principle I is observed.

Core Principle II.

The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.

The SIC rules and regulations, which are part of the set of agreements, define the respective responsibilities in detail. All relevant rules and guidelines are updated regularly and are readily available to the SIC participants.

The settlement process does not give rise to credit risk between SIC participants. The system rules clearly refer to the timing of irrevocability of payment instructions.

SIC rules and procedures explain the controls and measures designed to minimise liquidity risks. They include the participants' ability to check account balances in real time, query all pending incoming and outgoing payments and prioritise outgoing payments, and an optimisation routine to unblock a system-wide payments gridlock. Additionally, participants can access different sources of liquidity provided by the SNB, which allows them to react to fluctuating liquidity situations quickly and flexibly. The conditions for liquidity provision are set out in SNB's guidelines on monetary policy instruments (see also Core Principle III).

The roles and responsibilities in the event that participants or the system operator itself suffers from operational problems are described in detail in the SIC rules and procedures. Different potential failure scenarios are regularly practised with the involved parties.

The SIC rules and procedures explain clearly, comprehensively and in detail the system design, its timetable and the risk management procedures.

Core Principle II is observed.

Core Principle III.

The system should have clearly defined procedures for the management of credit and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

In an RTGS system such as SIC, the settlement process does not give rise to credit risks. Payments settled via SIC are irrevocable with immediate finality. The main form of risk associated with RTGS systems is liquidity risk. In the SIC system, payments can only be settled when the paying agent has sufficient funds available on its settlement account. Participants may submit payment instructions to the system even without necessarily posting sufficient liquidity for the payments to be settled. If cover is insufficient, the payment remains in a queuing system until there are sufficient liquid funds.

To prevent the participants from having insufficient liquidity on their settlement accounts and to mitigate a potential gridlock in the system as a whole, there are several liquidity sources available. The first source of liquidity are the balances of the participants held on the accounts of the SNB, including the minimum reserve requirements that could be used for payment purposes. A further means of liquidity are the payments of other system participants. In making payments, they supply a counterparty with liquidity in the course of the day. The incoming liquidity can be used immediately for settling one's own payments. In addition, participants can temporarily borrow liquidity from other system participants on the interbank money market (or lend excess liquidity).

The SNB is the second source of liquidity for system participants. From the perspective of payment transactions in SIC, the standing facilities are of central importance. They include a collateralised intraday liquidity facility and the liquidity-shortage financing facility. Both of these are based on repo transactions, whereas the collateralised intraday facility is limited only by the availability of eligible collateral. The «Guidelines of the Swiss National Bank (SNB) on Monetary Policy Instruments» specify the terms under which the

SNB concludes transactions with participants (including standing facilities) and the procedures that are to be observed in such cases. The guidelines are supplemented by SNB Instruction Sheets on the individual monetary-policy transactions (available at www.snb.ch).

Moreover, the following measures help to reduce system-wide liquidity needs:

- To prevent any gridlock, payments in excess of CHF 100 million have to be split up into smaller tranches.
- In case of a system-wide gridlock, SIC automatically activates its optimisation routine to unblock it. The system searches for any pending cross-payments from sending and receiving banks which will be offset simultaneously and on a bilateral basis.
- The remitter of a payment pays a dual-component fee. One component depends on the time of submission of the payment, the other on the time of settlement. Both fees increase in the course of the day. This creates an incentive for the participants to submit payment orders to the system early, while at the same time providing sufficient liquidity so that settlement can take place early.

Finally, SIC supports the efficient use and active management of the available liquidity. Participants are not only able to check their account balances and the pending incoming and outgoing payments at any time, they can also manage the queue by prioritising and cancelling payments, thus optimising the payment stream. The option of being able to enter payments in the system up to five days prior to their due date also facilitates liquidity planning.

In the event that a participant experiences a technical disruption, the SNB can access this participant's SIC settlement accounts directly and execute payments on its behalf. This enables the respective participant to recycle liquidity back into the system and ensure that participants who are still operational are content to carry on sending payments to that member.

To date there has been no indication of participants experiencing liquidity issues. Also, potential liquidity pressure induced by time-critical payments of CLS transactions are successfully mitigated by means of intraday liquidity and particular CLS subaccounts enabling participants to reserve liquidity solely for CLS transactions. The provision of liquidity is deemed sufficient and in accordance with manifold liquidity needs. Moreover, the progressive pricing regime ensures the efficient use of liquidity in the system.

Core Principle III is observed.

Core Principle IV.

The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

As mentioned in Core Principle I, the irrevocability of payment instructions is defined in the SIC rules and regulations and supported by the Swiss Code of Obligations. Accordingly, an instruction in a cashless payment transaction is irrevocable once the amount transferred has been debited to the transferor's account.

As discussed in Core Principle I, there is no zero-hour rule under Swiss law that would have the effect of reversing a settled payment in SIC. The aim of article 27 (2) Banking Act is to prevent the debtor's dispositions from becoming invalid. Hence, any measures ordered by the FINMA do not affect the validity of the transaction order.

If there is sufficient cover on the participant's settlement account, any payment entered into the system will be settled immediately by debiting the amount on the transferor's settlement account and simultaneously crediting the amount on the transferee's settlement account. If cover is insufficient, the payment remains in the queuing system until there are sufficient liquid funds. At the end of the day, pending messages in the queue are cancelled and have to be resubmitted the following day.

SIC provides real-time and immediate finality.

Core Principle IV is observed.

Core Principle V.

A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

SIC is a real-time gross settlement system and does not allow the multilateral netting of payment orders. In case of certain retail payments batch-processing is applied. However, the payments are not netted.

Core Principle V is not applicable.

Core Principle VI.

Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk.

The deposits which SIC participants hold in their sight deposit accounts at the SNB serve as the means of payment. Payments are thus settled with central bank money.

Core Principle VI is observed.

Core Principle VII.

The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

The SIC system has a good record in terms of availability and has not experienced any significant failure in recent years. In 2009, the availability of the SIC system amounted to 99.9%.

The IT infrastructure of the SIC system is outsourced to SIX Group Services AG, an affiliate of SIX Group. The services such as the system availability, the security level and the organisation of the service are determined in respective Service Level Agreements. Contingency procedures are tested regularly and external audits of both the SIC control framework and of the SNB's operations take place regularly.

All aspects of information security are subject to a three-year audit cycle. While the SNB is responsible for defining the scope and extent of the audits, they are conducted by external auditors. In practice, the audits cover a wide range of controls of relevant industry standards such as ISO 27001/002 and COBIT. The audits provide evidence that, overall, information security is managed appropriately. In particular, there is an effective information security policy and security organisation; there is a high degree of physical and environmental security; there are properly established processes for service operation and transition, for access control, for information systems acquisition, development and maintenance, and for incident and problem management.

SIC and SNB's operational unit have established processes to monitor, review and follow-up on operational incidents that affect the RTGS operations. These processes have proved effective in ensuring an efficient handling of technical incidents.

As a critical financial market infrastructure, the SIC system must be able to restore critical business processes within two hours, even after a major disruption.⁶ In order to meet this requirement, SIX Group has implemented business continuity plans to handle failures of all relevant sources, including premises, IT infrastructure and staff. In recent years, efforts in the area of business continuity management have focused

on strengthening the resilience of the system in the event of a major incident affecting a wide geographical area (by establishing an additional out-of-region data centre) and on the potential non-availability of critical staff (by implementing appropriate organisational measures). Test results indicate that the SIC system meets the «two hours» requirement.

The aforementioned measures notwithstanding, should the SIC system be unavailable for an extended period, either for technical reasons or due to connectivity issues, there is a regularly tested solution based on physical data exchange that allows settlement of payments with end-of-day finality. Moreover, in case of an operational problem of an individual participant, the SNB may make payments on behalf of the affected participant, thereby ensuring time-critical payments (such as for CLS) or recycling liquidity that might accumulate on the account of the affected participant to other system participants.

Core Principle VII is observed.

However, taking into account the criticality of the SIC for the Swiss financial system, SNB encourages operator of SIC to check and improve its information security and its contingency testing arrangements continually.

⁶ See report on Business Continuity Planning of the Swiss Financial Centre (2006). Available at www.snb.ch.

Core Principle VIII.

The system should provide a means of making payments which is practical for its users and efficient for the economy.

SIC operates for approximately 23 hours a day. The performance of the system is sufficient to process the current peak transaction volumes in real time. Several committees (Swiss Payments Council, Project and IT-Process Steering Committee, Product and Marketing Committee) ensure continuous improvement of the efficiency and practicability of the SIC system. Moreover, since the SIC is a user-owned utility the needs of the payment community are directly reflected in the SIC system.

It is generally difficult to judge whether a payment system is efficient in the sense that the system produces the payment services demanded, such that those services could not be produced at a lower cost to the economy, taking into account all resources (labour, technology, finances) used to operate the system. However, SIC is expected to operate efficiently for the following reasons:

- As a user-owned utility, transaction prices are not subject to profit maximisation but to maximisation of the user benefits. Moreover, the comparatively low transaction price level is also related to the fact that the SIC processes both large-value and retail payments, allowing for substantial economies of scale. The adequacy of the pricing policy is also reflected in discounts and rebates that the system grants to its members if surpluses are generated.
- The SIC system raises separate fees for both the submission and the settlement of instructions, and a progressive fee structure during the settlement day has been implemented. In this way, SIC provides an incentive for the participants to submit and settle instructions earlier in the settlement day.
- The SNB provides a collateralised intraday liquidity facility free of charge in order to relieve members of the enhanced liquidity needs that system participation entails.

Both from a functional and an operational perspective, the SIC system appears to meet participants' needs. The transaction fees are low and the progressive pricing scheme benefits the system's operations in terms of efficiency (increased liquidity turnover) and with respect to smoothed processing peaks during the settlement day.

Core Principle VIII is observed.

Cor Principle IX.

The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

The SNB determines the authorisation criteria for participation in SIC. The access criteria are described broadly in the SIC rules and regulations. Access is restricted to institutions that hold Swiss franc sight deposit accounts at the SNB and comply with the technical and organisational requirements of SIC AG.

In order to ensure that the SIC access policy remains well suited to the statutory tasks of the SNB, the access criteria for sight deposit accounts at the SNB and SIC have been revised. As of 1 January 2010, the SNB has published a new access policy.⁷

The following categories may, as a rule, have access to sight deposit accounts at the SNB: Domestic banks within the meaning of the Banking Act and securities dealers within the meaning of the Stock Exchange Act; banks set up in accordance with foreign law; Swiss Post; FINMA-regulated insurance companies and fund managers that are highly active in the money market; domestic cash processing operators without banking status; regulated domestic and foreign clearing and settlement companies; the Federal Administration, the Federal Supreme Court, federal offices and federal institutions that are not a separate legal entity in their own right, and organisations or joint-stock companies of the Confederation that constitute a separate legal entity; foreign central banks and international organisations. Basically, the conditions for participation in the SIC system are a sight deposit account and the fulfilment of all other conditions for participation defined by the SNB and SIC AG. SIC provides access to a broad range of participants with more than 370 Swiss and non-domestic financial institutions at the end of 2009.

The current policy ensures objective and fair access to the SIC system.

Core Principle IX is observed.

Core Principle X.

The system's governance arrangements should be effective, accountable and transparent.

SIC is operated on behalf of the SNB by SIC AG. The latter is 75% owned by SIX Group AG, while PostFinance holds a 25% stake. The shareholders in SIX Group are the Swiss big banks, foreign banks in Switzerland, commercial and asset management banks, cantonal banks, private bankers and regional banks. The Board of Directors of SIC AG exercises control over the company and has the appropriate competencies (e.g. strategy, spending on human resources and investment).

The Board of Directors consists of members of senior management from participating institutions. One seat is reserved for a representative of the SNB. Issues of greater concern for the wider population of stakeholders are dealt with in various committees where the relevant stakeholders are represented. The members of the Board of Directors as well as the composition of the different committees are publicly disclosed.

In its role as system overseer, the SNB conducts regular assessments against minimum requirements which are largely based on the CPSS Core Principles and strives to take appropriate action in case of any shortcomings.

The general public is provided with relevant information via the website of SIC AG, SIX Group's annual report and many other publications. The SNB provides an annual, publicly available accountability report to the Swiss Federal Assembly which includes a section on the role and activities of the SNB as system manager and operator.

SIC AG has governance arrangements that are clear and effective. It is transparent and accountable to its members and to a broader range of stakeholders.

Core Principle X is observed.

⁷ For details on access criteria, see the Instruction sheet on cashless payment transactions (2010). Available at www.snb.ch.