INTERNATIONAL MONETARY FUND

THE WORLD BANK

Financial Sector Assessment Program—Experience with the Assessment of Systemically Important Payment Systems

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April 19, 2002

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List of Abbreviations

AUD	Australian Dollars
BCEAO	Banque Centrale des Etats de l'Afrique de l'Ouest
BEAC	La Banque des Etats de l'Afrique Centrale
BIS	Bank for International Settlements
CAD	Canadian Dollars
CEMLA	Centro de Estudios Monetarios Latinoamericanos
CHF	Swiss Francs
CLS	Continuous Linked Settlement System for Foreign Exchange Transactions
CLSB	Continuous Linked Settlement Bank
COI	Cooperating Official Institution
CP	Core Principle
CPSS	Committee on Payment and Settlement Systems
CSD	Central Securities Depository
DKK	Danish Kronor
DvP	Delivery-versus-Payment
EMEAP	Executives Meeting of East Asia Pacific Central Banks
EU	European Union
EUR	Euro
FRBNY	Federal Reserve Bank of New York
FSAP	Financial Sector Assessment Program
GBP	Pound Sterling
GN	Guidance Note
IOSCO	International Organization of Securities Commissions
IT	Information Technology
JPY	Japanese Yen
MFP	Monetary and Financial Policy
MoU	Memorandum of Understanding
NOK	Norwegian Kroner
PvP	Payment-versus-Payment
RSSS	Recommendations for Securities Settlement Systems
RTGS	Real-Time Gross Settlement System
SADC	Southern Africa Development Community
SEK	Swedish Kronor
SGD	Singapore Dollars
SIPS	Systemically Important Payment Systems
SSS	Securities Settlement Systems
USD	U.S. Dollars
WHI	Western Hemisphere Payments and Securities Clearance and Settlement Initiative

EXECUTIVE SUMMARY

1. **Assessment of systemically important payment systems in Bank-Fund member countries under the Financial Sector Assessment Program (FSAP) began in 1999**. Based on the observance of the Core Principles for Systemically Important Payment Systems (CPSIPS), issued by the G-10 Governors' Basle-based Committee on Payment and Settlement Systems (CPSS), the assessments contribute to the overall evaluation of the risks and vulnerabilities in the financial system and of development opportunities in the payment system.

2. **The assessments also seek to determine the extent to which vulnerabilities in the payment systems could potentially undermine the implementation of the monetary policy, or generate systemic disruptions in the financial markets, and more widely across the economy.** A problem may be initiated by the inability of a participant to settle its financial obligations, or by operational failures of the system as a whole. The resulting payment default may be passed on to other participants, and get transmitted across financial systems and markets, threatening their stability.

3. **The assessments suggest that there are weaknesses in many of the 57 payment systems (in 42 countries) that were assessed between 1999 and 2001 under the FSAP**. Failure to observe the CPSIPS arise where payment system participants are unable to manage credit, liquidity and other risks they incur within the payment system arrangement, and where the system is not protected against one participant being unable to settle its obligations. Other problem areas include: a legal framework that does not support the payment system rules and regulations, and an insecure operating system and environment. Many payment systems are also not adequately overseen by their central banks, and the governance arrangements are insufficiently transparent. Payment systems in advanced economies and, to a large extent, also in transition economies, observe most of the core principles. In developing countries, a significant majority of the systems suffer shortcomings of various importance in their design and operation that may expose them to risks in the event of a problem. While this is a concern, it should also be noted that the flow of funds in these payment systems is not as significant as in systems in more advanced economies, and that also several countries are in the process of developing programs to reform their SIPS.

4. **Assessments have also brought out potential negative impacts on the liquidity situation in payment systems in different countries.** This is a result of: (i) arrangements for resolution of troubled banks; (ii) nontransparent systemic liquidity arrangements provided by the central bank; (iii) liquidity which is concentrated among only a few of the banks, in a country in which there is currently no intraday liquidity available from the central bank; and (iv) settlement risks in the securities and the foreign exchange markets, caused by the lack of Delivery-versus-Payment (DvP) and Payment-versus-Payment (PvP) facilities, respectively. In many countries, it is implicitly assumed by most participants that the central bank would

cover (in practice) liquidity shortages (even failures) in order to avoid any systemic process to occur.

5. **Based on the assessments, FSAP missions have made recommendations to address the shortcomings.** The authorities have generally responded positively, not only to the recommendations, but also to the whole assessment process, which has also been helpful in enhancing understanding of payment system risks. Several countries have confirmed that, following the assessment, steps have been taken to upgrade their payment systems, toward making them safer, efficient and supportive of monetary policy implementation. This also includes upgrading of securities settlement systems, as a failure in such systems would negatively affect the functioning of the payment system. In some countries, an FSAP follow-up has included technical assistance from the Bank and the Fund.

6. **The assessment experience has also identified some limitations in the assessment process and in the analytical tools available to the assessors**. Four areas were identified, as needing improvements—(i) consistency in assessments; (ii) assessment of actual implementation; (iii) links between the standards assessments and the diagnosis of sectoral risks and vulnerabilities; and (iv) management of the overall assessment process. These are now being addressed by the Bank and Fund staff, as part of the overall enhancement of the standards assessment framework under the FSAP.

I. INTRODUCTION[1]

7. **Payment systems are critical to the effective functioning of financial systems worldwide.** They provide the channels through which funds are transferred among banks and other institutions to discharge payment obligations arising in the financial markets and across the entire economy.

8. **Every country has at least one payment system whose role in the economy is so critical that it is regarded as a Systemically Important Payment System (SIPS).** A payment system is regarded as systemically important (i) if it is the only payment system in the country, or the principal system in terms of the aggregate value of payments; (ii) if it handles mainly payments of high individual value; or (iii) if it is used for the settlement of financial market transactions or for the settlement of other payment systems in the same currency.

9. **If a SIPS is insufficiently protected against credit, liquidity, legal, operational and other risks, disruption within the system could trigger or transmit further disruptions among its participants, or generate systemic disruptions in the financial markets or more widely across the economy.**

10. **The Core Principles for Systemically Important Payment Systems (CPSIPS, or principles) have been drawn up by the G-10 Governors' Basle-based Committee on Payment and Settlement Systems (CPSS) as universal guidelines to encourage the design and operation of safe and efficient SIPS worldwide.** They form one of the standards recognized by the Bank and Fund Executive Boards as being useful to the operational work of the staff. The CPSS has also defined the responsibilities of each central bank for applying the principles in its country. The CPSS Task Force, which drafted the principles and responsibilities, included representatives of 23 central banks, from a range of advanced and developing countries and countries in transition, and from the Bank and the Fund.

11. **In recognition of the essential role played by the SIPS in every economy, its assessment against the CPSIPS has been undertaken by FSAP missions since mid-1999**. Between then and the end of 2001, 57 SIPS in 42 countries have been assessed.[2] The

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[1] The main contributors to this paper were Kai Barvell, Udaibir S. Das and Peter Allsopp (Consultant) from the IMF; and Massimo Cirasino and Mario Guadamillas from the World Bank.

[2] The SIPS in the following countries have been assessed under the FSAP program from 1999 to the end of 2001 (not all assessment reports have yet been completed): Argentina, Armenia, Bulgaria, Cameroon, Canada, Colombia, Costa Rica, Croatia, Czech Republic, Dominican

(continued…)

aims of assessing a country's SIPS are four-fold: (i) to contribute to an overall assessment of the risks and vulnerabilities of that country's financial system; (ii) to assist in identifying areas of further reform of the payment system; (iii) to show how that system compares with the core principles; and (iv) to show how the country's oversight regime compares with the central bank's responsibilities for applying the principles.

12. **The assessments seek to identify the strengths and weaknesses of the SIPS**, including its potential to transmit shocks (also originating in other countries), risks to, or vulnerabilities in the monetary system, the financial markets or across the economy more generally. The assessments, as appropriate, recommend changes or reforms to the SIPS. They also help to make the authorities aware of those aspects of their SIPS that should be kept under review as the economy and financial markets develop. In practice, some FSAP assessments have used the Core Principles as a base for assessing more widely the whole payment infrastructure of a country and risks arising from interrelation between various payment systems.

13. **This paper examines the experience with the CPSIPS assessments in the FSAP.** It is based on an analysis of completed assessments, together with feedback from assessors, mission chiefs and the authorities. Its findings and conclusions will be shared with the CPSS.

14. **The remainder of this paper is organized as follows:** Chapter II discusses payment systems and their oversight; Chapter III sets out the CPSIPS, and the use made of them by the Bank and the Fund; Chapter IV discusses the assessment process and the main findings; Chapter V looks at the recommendations that the missions have given to the authorities, and at the post-assessment follow-up; Chapter VI discusses enhancements to the assessment process, and experience with the CPSIPS; and Chapter VII offers some concluding remarks.

II. Payment Systems and Oversight Approaches

A. Payment Systems, Monetary Policy, and Financial Stability

15. **An efficient, secure and reliable payment system reduces the cost of exchanging goods and services, and it is an essential tool for the effective implementation of**

Republic, El Salvador, Estonia, Finland, Gabon, Georgia, Ghana, Guatemala, Hungary, Iceland, India, Iran, Ireland, Israel, Kazakhstan, Latvia, Lithuania, Luxembourg, Mexico, Nigeria, Peru, the Philippines, Poland, Slovenia, South Africa, Sri Lanka, Sweden, Switzerland, Tunisia, Uganda, UAE, Uruguay, and Yemen. In addition, some further SIPS have been assessed under the Core Principles, although not formally under the FSAP program (e.g., in the Western Hemisphere Payments and Securities Clearance and Settlement Initiative and Fund's Technical Assistance Program).

monetary policy, and for the smooth functioning of the money and capital markets. It is also the channel for settlement of all other types of transaction, including cross-border financial flows (see Box 1).

Box 1. Payment Systems, Monetary Policy, and Financial Stability

A payment system that is used for the settlement of financial market and other large-value transactions will, if it complies with international best practices, offer substantial benefits for monetary arrangements, and it can also contribute to the maintenance of the stability of the financial systems. 1/ These benefits include:

- the elimination of float (funds that have been debited to the payer's account, but not credited to the recipient's account) arising from these transactions, thus reducing erratic fluctuations in bankers' balances with the central bank, and making it easier to forecast their levels accurately;
- the effective operation, at a low cost, of an interbank money market, in which banks and other financial institutions can efficiently manage their daily liquidity requirements, and in which the central bank can conduct precisely targeted open market operations;
- the elimination of credit exposures between banks, and the reduction of their liquidity exposures, arising in the settlement of their transactions, and those of their customers;
- the opportunity for banks to maintain a lower stock of overnight balances with the central bank; and
- the ability to reduce or eliminate settlement risk arising from transactions in other financial markets, such as for securities or for foreign exchange.

1/ For detailed discussions of these issues, see Summers (ed), 1994, "The Payment System: Design, Management and Supervision", IMF, and Johnson et al, 1998, "Payment Systems, Monetary Policy, and the Role of the Central Bank", IMF.

16. **A payment system that, in contrast, is not efficient, secure and reliable can adversely affect the financial system, and can contribute to systemic crises.** If the risks inherent in its design and operation are not adequately contained, a financial shock—initially in the form of a liquidity shortfall, which may be followed by default and even bank insolvency—can be passed from one participant to another. The most important payment systems—or SIPS—are channels through which potentially very large shocks may get transmitted across domestic and international financial systems and markets, thus threatening their stability. Since a bank's liquidity problems will typically first become visible in the payment systems in which it participates, those systems are by definition vulnerable to a wide range of shocks. These systems can also impose unexpected strains on central banks, forcing them to give large loans to banks (without receiving collateral), which could endanger their monetary policy objectives. Although the fact of such lending is typically not disclosed, at the time or later (ostensibly to avoid damaging public confidence in the banking system), the potential scale is illustrated in the following.

17. **The potential scale of such liquidity problems is illustrated by two episodes.** In 1985 the Bank of New York, a major clearing bank in the U.S. payment system and the U.S. Government securities settlement system, experienced a computer breakdown which made it possible for the bank to settle only purchased securities, but not sold securities. To ensure that a large number of major banks and securities houses did not have to default on their obligations that day, the Federal Reserve Bank of New York (FRBNY) had to make an overnight loan of $22.6 billion to the Bank of New York, collateralized by $36 billion in securities, which enabled it to settle all outstanding market transactions. After the September 11, 2001, events in the United States, and their impacts on the functioning of the financial market, several central banks announced that they were prepared to provide necessary liquidity to market participants , to ensure that the temporary inability to reconcile

and settle transactions in the U.S. financial markets did not cause systemic problems for those currencies' payment systems. Central banks in some countries, not only offered to lend in domestic currency, but also in U.S. dollars. Overnight lending by the FRBNY, including $20 billion lent by the ECB under a swap line, reached a peak of $81 billion on September 14.

18. **In terms of its payment systems, no jurisdiction operates in isolation.** The current situation and circumstances of every market economy are continuing to change, in response not merely to changes in its domestic circumstances, but also to a variety of pressures and influences (see Box 2) and to the development and expansion of cross-sectoral and cross-border linkages.

Box 2. Influences on Payment Systems

The payment systems in every market economy are subject to a variety of influences. Typical sources of these influences may include peer group pressure on central banks, for example in the G-10 countries (through the CPSS), in the EU, in Latin America and the Caribbean (CEMLA/WHI), 1/ in Asia (EMEAP), 2/ and in Southern Africa (SADC), Western Africa and in Central Africa. 3/ Regional groups of central banks have been formed with the purpose of enhancing a region's knowledge about payment, clearing and settlement issues, and in some cases also for developing safe and efficient payment systems. The CPSS, in particular, has published several policy reports and recommendations, as well as country reports, the latter having been published also by regional groups. 4/

Pressure on the host countries from branches of major multinational commercial banks, which seek (sometimes under pressure from their home country supervisors) to operate under consistent rules and standards worldwide will also influence the payment system, as will new payment products and technological developments.

The establishment of real-time links between payment systems and systems for settling transactions in government and private sector securities also influences the design and operation of the payment systems, as does the introduction of laws and regulations binding across all member countries of multinational communities such as the EU (whose laws apply, in this respect, also to candidate countries).

Training, technical assistance from the Bank and the Fund, as well as project finance from the Bank or from other development agencies also influences domestic payment systems.

1/ CEMLA/WHI (Centro de Estudios Monetarios Latinoamericanos/Western Hemisphere Payments and Securities Clearance and Settlement Initiative).
2/ EMEAP (Executives Meeting of East Asia Pacific Central Banks) http://www.emeap.org:8084.
3/ SADC (Southern Africa Development Community), BCEAO (Banque Centrale des Etats de l'Afrique de l'Ouest)) and BEAC (La Banque des Etats de l'Afrique Centrale) are also running payment system projects.
4/ Links to country specific payment system information can be found on the CPSS website http://www.bis.org/cpss/paysysinfo.htm.

19. **Close attention has, therefore, been paid since the mid-1980s, initially by central banks and then by the participants, to the design and operation of payment systems**. This was in response to both technological developments, which reduced the cost and increased the speed of the automated processing of payment instructions, and a rapid increase in the values being settled through many of these systems. As a result, substantial changes are

being seen in the design and use of the SIPS in a wide range of countries and currencies. These changes reflect not only the need, wherever practical, to eliminate risks arising between payment system participants, but also the increasingly stringent standards being demanded of payment systems in response to developments in the infrastructure of financial markets, such as clearing and settlement systems for securities.

20. **It is increasingly the norm for payments arising from financial market transactions, and other large-value or time-critical payments, to be settled through a designated payment system**. In the most favored model of such a system, the settlement asset is a balance in the books of the central bank, and the accounts of the payer and the receiver with the central bank are respectively debited and credited with finality in real time throughout the day. This is generically known as a Real-Time Gross Settlement (RTGS) system.[3] Using accounts at the central bank eliminates any credit exposure on the funds that a bank receives through the system. In order to be able to make its own outward payments without undue delay, the payment system participant may need access to intraday liquidity, which is typically supplied by the central bank against collateral.[4]

21. **In most countries, however, the SIPS still takes the form of a multilateral net settlement system,[5] for electronic payments or for checks**. The credit and liquidity exposures in a check clearing system are substantially more difficult to manage. Although some limited arrangements to manage the interbank risks can be devised, systemic risks almost inevitably remain in check systems if they are used to channel large value payments. This is why countries with such systems are usually advised to establish a dedicated RTGS system to take large-value and time-critical payments out of the check system.

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[3] Variants of the basic RTGS system, so called hybrid systems, which take into account liquidity saving features that exist in net settlement systems, are also being introduced in some countries.

[4] A participant in an RTGS system requires a substantial balance on its account with the central bank to be able to release its outward payments smoothly throughout the day. If this required balance exceeds the participant's overnight balance (together with any statutory or other reserves that can be drawn down during the day) the participant will have to borrow the necessary funds from another institution in the intraday interbank money market (if one exists); or, more typically, from the central bank.

[5] A multilateral net settlement system is a system in which each settling participant settles at the end of the day, or at some other specified time(s) (typically by means of a single payment or receipt) the multilateral net-settlement position, which results from the transfers made and received by it, for its own account and on behalf of its customers or non-settling participants for which it is acting.

B. The Main Elements of a Stable, Secure, and Efficient Payment System

22. **The key premise of every SIPS is that a payment system is not an end in itself: it is only a means to an end—a means of enabling financial obligations to be settled securely and efficiently between debtors and creditors, or between originators and beneficiaries of payments**. The design of a system to achieve that end, inevitably requires a series of trade-offs and compromises between different factors and objectives. There is no single and universally correct design: what are appropriate or necessary trade-offs and compromises in the current circumstances of one country may be entirely inappropriate in different circumstances of another country. Furthermore, what is appropriate today, may not be appropriate tomorrow.

The legal environment

23. **A fundamental requirement for a stable and secure payment system is that it should operate in a well-defined legal environment, setting out the rights and obligations, in normal as well as in adverse circumstances, of each party involved in transmitting a payment through the system**. This requires predictability in the application of rules and regulations by the system operators and overseers,[6] and predictability in their enforcement by the courts. The legal environment needs to cover payment instruments as well as the system; it also needs to cover all participants in the system, whether they are incorporated in the host country or in other countries, and therefore subject, for example, to possibly conflicting bankruptcy and insolvency laws.

24. **The legal and regulatory environment for every SIPS should ensure the finality and irrevocability of all payments made through the system**. It should in particular prohibit reliance on any form of "unwind" (partial or complete) to allow the system to settle on the due day if one or more of the participants in a multilateral net settlement system is unable to settle its obligations (see Box 3). It should also be sufficiently flexible to permit the development of new payment instruments and systems, and the possible involvement of new categories of participants in the SIPS and in other systems.

Box 3. The Unwinding Procedure for a Multilateral Net Settlement System

In a deferred multilateral net settlement system, for electronic payments or for checks, all payments are provisional until the final settlement takes place. The rules of the system, or the assumptions of its members, will typically provide that if one of the participants is so short of funds that it cannot settle its

[6] In fact, appropriate regulatory and supervisory arrangements are *per se* a crucial element for sound and efficient payment systems, see below Section D.

net debit position, its provisional payments and receipts are deleted from the system and the settlement obligations of the remaining participants are recalculated. This **"unwinding" procedure** has the effect of transferring unpredictable liquidity pressures, and possibly losses, onto the remaining participants, and may in an extreme case result in defaults by other participants. The consequential systemic risks are particularly serious when any financial market transactions, such as securities purchases, are settled through that system. To avert those risks the central bank may feel impelled to lend, overnight or longer and with or without collateral, to the defaulting participant, to prevent the unwind, or to the other participants to prevent their consequent settlement failures. In order to avoid unwinding procedures, a system could set up a guarantee fund, paid into by the participants, in combination with a limit system on net open debit positions, which would make sure that settlement would take place even if the largest debtor in the system defaults.

The national infrastructure

25. **A secure and stable SIPS depends critically on the quality of the national infrastructure**. An Information Technology (IT)-based system, such as most RTGS systems, requires adequate power supplies and high-quality telecommunication links. It also needs a permanent cadre of skilled IT staff, to manage and maintain the system and to implement any changes. A paper-based SIPS, such as a check clearing system, relies on the country's transportation network to carry instruments between the banks and the clearing system.[7] An inefficient transportation system creates delays in carrying the instruments, exacerbates exposures and generates unpredictable and potentially costly float; it also increases the system's insecurity and potential for fraud.

Economic efficiency and the payment system

26. Efficiency is a concept, which is used widely and used in many different ways. It can be used as a technical measure of production, for example, of the number of payments that can be processed in an hour. It can also be used in the sense of cost-effectiveness, for example, as a measure of the cost per payment of operating the payment system. Economists use the term efficiency in the sense of a choice of a method of producing the payment service demanded, such that those services could not be produced at a lower cost to the economy. The payment system also promotes social efficiency, through considerable, mostly positive, externalities like the smooth exchange of goods, services and financial assets.

27. **A diagnosis of a country's major payment system covers aspects of the design or the rules of the system that can lead to poor risk or liquidity management, poor operational performance (errors, long processing delays, and general unreliability) of the system.** It would also cover the use of the system (potential excess capacity) and if the

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[7] To reduce the need to transport checks, some countries use a system of "truncation", under which the essential content of each check is transferred electronically between the presenting bank and the paying bank, but the check itself is archived, usually by the presenting bank.

central bank is heavily subsidizing the system. Such findings often lead to a desire to take remedial actions. Sometimes the solution to a diagnosed problem is easy and inexpensive, requiring perhaps only simple organizational and policy changes. For instance, there may be a paper-based clearing and settlement system in which large values and small values are all lumped together. In other cases more profound measures may be needed.

C. Payment Systems and Emerging Cross-Sectoral Links

Securities settlement systems

28. **Efficient and risk-free linkages with Securities Settlement Systems (SSS) are critical for a country's SIPS.**[8] SSS are recognized as incurring the same inherent risks as those associated with SIPS. Moreover, the timely settlement of securities transactions, in the risk-free form of DvP, is critically dependent on the settlement of the associated payments.[9] Payment system participants are therefore vulnerable to any problems arising in the securities settlement process. In addition, linkages are increasingly required across borders, as securities held in one country may be settled through a payment system in another country, or are used as cross-border or cross-currency collateral.

29. **Efficient SSS are essential for the timely delivery of securities to serve as collateral for payment system purposes, such as intraday borrowing from the central bank by pledge or repurchase agreement.** They are also pre-requisites for the development of collateralized money markets and for the conduct of open market operations. Thus, there needs to be an effective interoperability of a payment system and the SSS, generally through a DvP facility, if these key market transactions are to be settled smoothly and efficiently in real time throughout the day.

30. **The more linkages that are established between a SIPS and other domestic or cross-border payment systems, or securities settlement systems, the greater the risk of contagion.** An operational failure, or any other problem, in one system can prevent the timely settlement of a transaction (i.e., the delivery of cash or of securities) in another system, thus transmitting the problem between markets, and perhaps countries, and potentially magnifying its scale and impact. Therefore, the achievement and maintenance of effective interoperability

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[8] Securities Settlement Systems (SSS) incorporate the clearing and settlement function as well as the function of the Central Securities Depository (CSD).

[9] A Delivery-versus-Payment facility establishes a link between the SSS and the payment system, such that the final transfer of title to the securities passes in the SSS from the seller to the purchaser if, and only if, a final and irrevocable payment has been made to the seller through the payment system.

between any two systems requires consistency in their rules and procedures and their risk management arrangements. It also requires coherent and compatible legal bases to the two systems and to their interconnections, with rights and obligations that are clear, effective and enforceable even across borders.

31. **The CPSS and IOSCO have released in November 2001 *Recommendations for Securities Settlement Systems (RSSS)*.**[10] The 19 recommendations and accompanying explanatory texts identify minimum standards that SSS should meet. The recommendations are designed to cover all types of securities, for securities issued in both industrialized and developing countries, and for domestic as well as cross-border trades; they are highly relevant to linkages between systems, since they cover, for example, such topics as DvP and risks in cross-border links including legal risks. The CPSS-IOSCO Task Force, which produced the recommendations, is currently working on an assessment methodology for these recommendations, and the Bank and the Fund staff is participating in that work. In some FSAP missions, the soundness of securities settlement systems has been assessed based on the emerging standards, either by or in cooperation with the CPSIPS assessor.

Settlement of foreign exchange transactions

32. **Much attention has been paid in recent years to reducing risks—including liquidity and credit risks—on the settlement of foreign exchange transactions.** A very high proportion of the daily flows through the SIPS of the globally traded currencies are accounted for by payments in settlement of interbank foreign exchange transactions. Any settlement failure could have an immediate impact on the smooth operation of those SIPS.[11]

33. **Foreign exchange transactions are today settled through the payment systems of the two countries whose currencies are involved, and these systems may not be open at the same time due to time zone differences.** This raises the possibility that one counterpart in a transaction delivers funds that it has sold, while the other counterpart, later on that same day, may default and subsequently fail to deliver its funds.

34. **A new bank, Continuous Linked Settlement Bank (CLSB)** (see Box 4) **is, after repeated delays, due to come into operation later in 2002, with the intention of reducing**

[10] The Financial Stability Forum (FSF) has agreed that the Recommendations would be reflected in the key standards highlighted by the FSF for sound financial systems .

[11] These settlement flows, which are estimated to amount to between $3 trillion and $4 trillion per day, are typically effected by means of gross payments through relevant SIPS.

this risk by means of a PvP facility.[12] One side-effect of the CLSB will, however, be an increased vulnerability of each domestic SIPS to problems in another country's SIPS, since in the PvP mechanism, if one currency is not paid in to the CLSB, the counterpart currency will not be paid out, so creating a cross-currency liquidity shortfall. In order to minimize these risks, it is important that the SIPS, to be used by the CLSB, seek to fully observe the CPSIPS. It should be noted that although smaller banks can settle transactions in the CLSB through member banks, CLSB will not be opened for small currencies.

Box 4. Continuous Linked Settlement Bank

There will initially be some 70-settlement member banks of CLSB, settling their own transactions and those of their customers in, initially, 7 major currencies (USD, CAD, GBP, EUR, CHF, JPY, and AUD), though more will join the system later, including SEK, DKK, NOK and SGD. CLSB, as the settlement agent, will have a settlement account with the central bank of issue of each currency; payments into and out of that account will be through the respective real-time systems. The members will pay to the CLSB, and receive from the CSLB, only the net amounts due in respect of each currency, thus reducing the intraday liquidity required for the smooth operation of those payment systems.

The CLS Bank is set up under U.S. law as an Edge Act company (an organization chartered by the Federal Reserve to engage in international banking operations), regulated by the Federal Reserve Bank of New York, in consultation with other involved central banks.

Resolution of problem banks

35. **There is an important and a bi-directional linkage between the rules and the operation of each payment system and the approach to the resolution of problem banks participating in the system.** Clearly defined triggers are required before the authorities (typically the central bank) should intervene to resolve problems at any bank in a payment system. One such important trigger is the inability of a bank to settle its obligations. This is because a system that relies, explicitly or implicitly, on overdrafts granted automatically and without limit by the central bank to participants suffering liquidity shortages could disguise the need for—and therefore could delay—a timely intervention to resolve more serious problems. This could provoke important losses for depositors, and also potential losses for the central bank. On the other hand, the suspension of operations of a failed bank can expose the payment system to substantial risk if the authorities decide that it is more important to use the bank's available funds to protect its depositors, rather than to settle its position against other participants in the payment system. This situation is especially critical when the

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[12] The PvP is a mechanism in a foreign exchange settlement system, which ensures that a final transfer of one currency occurs, if and only if, a final transfer of the other currency or currencies takes place.

payment system concerned is systemically important, and the amount involved in the settlement is high. The use of RTGS systems for large value payments can mitigate the challenge of dealing with a failing bank without endangering the payment system. In contrast, multilateral net settlement systems that settle such payments may exacerbate this challenge. If the netting process falters, all payments, including the ones, which are not affected by the defaulting participant, also get stopped.

36. **A satisfactory approach to the resolution of a bank failure requires in the legal framework for the payment system, a clear and practical definition of the precise moment when a failure to pay, or to settle, takes place.** This also requires an effective mechanism for the fast coordination of responses among the relevant authorities. The first requirement—definition in the legal framework—does not present any problem apart from an adequate provision in the law. Regarding coordination, it has to be formal, automatic and prompt. This is crucial, as the fall in the value of the bank's asset base, and contagion effects among other banks increase exponentially once the problem is known, if a quick solution has not been identified and communicated to the depositors. In some countries, one can find contradictions between the existing laws governing banking and bankruptcy and system regulations.

D. The Role of the Central Bank in the Oversight of Payment Systems

37. **It is generally acknowledged that every SIPS should be subject to effective oversight**. The role of the overseer should be to ensure the development of rules and procedures for the system; assess and enforce compliance with those rules; promote and co-ordinate individual and collective action by the participants; and ensure the smooth functioning of the system; and promote its future development. In carrying out that role, the overseer will have regard to the development of an efficient, safe and stable system, and to the prevention of market abuse or criminal abuse.[13] It will also be looking to ensure sound legal foundations for the system and a level playing field for all stakeholders.

38. **The overseer should have arrangements in place to ensure cooperation with relevant authorities, domestic and foreign, including the supervisors of the banks and of other institutions that participate in the system**. These arrangements should preferably be based on Memoranda of Understandings (MoUs), or similar provisions to permit the timely exchange of information between different authorities.

[13] Thus, the tasks of the overseer should include ensuring that operational aspects of the system, such as the flow of information attached to each payment, help to prevent its use for money laundering.

39. **The central bank has typically the responsibility to oversee any SIPS that it does not itself own and operate. The oversight function should preferably be an independent function in the central bank, directly under senior management.** To minimize conflicts over priorities or policies it should not be combined with any banking supervision functions in the central bank, nor with the banking operational function, which is responsible for handling the central bank's own transactions through the system, and is also likely to be its settlement agent.[14]

40. **Experience suggests that it is preferable for the central bank to have clear statutory authority to oversee the SIPS: moral suasion, based on its role as banker to all the system participants, is not normally sufficient**. It can become increasingly difficult for a central bank to oversee a SIPS using moral suasion alone. This is particularly the case if the system needs to be reformed in such a way that it will increase the cost for participating and making payments in the system. A decision to move from a multilateral net settlement system to an RTGS system could, for example, result in an opportunity cost to the participants, as they may have to increase their holding of collateral to be able to obtain intraday liquidity in an RTGS system. This compared to the contingent cost hitherto borne by the central bank through an implicit guarantee on the daily settlement of the existing unreformed system.

41. **The central bank should not guarantee, even implicitly, the settlement of a SIPS**; nor should participants in the system have any grounds to assume that in the event of a serious problem, the central bank will automatically provide sufficient funds to complete the daily settlement. This would severely compromise whatever discretionary authority it may have as the lender of last resort. It would also provide little incentive for the participants to take their own, potentially costly, measures to understand and to manage their liquidity exposures.

III. Core Principles for Systemically Important Payment Systems

A. The Core Principles

42. **The CPSIPS serve as universal guidelines to encourage the design and operation of safe and efficient Systemically Important Payment Systems worldwide**.[15] The CPSIPS (see Box 5) are objectives, not prescriptions; and they are intended to be sufficiently broad in scope to apply to a wide range of circumstances and to be useful over time. Moreover there

[14] In a growing number of countries, the oversight function extends beyond the SIPS.

[15] Preliminary drafts of the CPSIPS, and of the accompanying notes on their interpretation and implementation, were published for public consultation, and received extensive comments. The Report is available on the BIS website: www.bis.org/publ/cpss34.pdf.

can be different—and entirely legitimate—ways to observe them, depending on the circumstances of each country. In essence, the CPSIPS provide an analytical framework, which can help each central bank to examine the key features of its SIPS and to apply an effective oversight regime.

Box 5. The CPSIPS and Central Bank Responsibilities

Core Principles for Systemically Important Payment Systems

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

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.

III. The system should have clearly defined procedures for the management of credit risks 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.

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.

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.

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 and little or no liquidity risk.

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

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

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

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

Systems should seek to exceed the minima included in Core Principles IV and V.

Responsibilities of the central bank in applying the Core Principles

A. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.

B. The central bank should ensure that the systems it operates comply with the Core Principles.

C. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.

D. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

43. **The CPSIPS pertain to all central banks and other interested public sector agencies, as well as to all private sector owners and operators of payment systems**. The CPSS report on CPSIPS discusses, in some detail, the interpretation and implementation of the principles, which apply to all SIPS, whether they involve credit or debit transfers, electronic or manual processing, and electronic or paper instruments. CPs I through VII deal with the vulnerability of a SIPS, and of its participants, to a range of shocks, including legal, credit, liquidity and operational risks; CPs VIII through X deal with its efficiency and practicality, the ease with which new participants can join the system, and the governance arrangements.

The responsibilities of the central bank in applying the CPSIPS

44. **The contribution to be made to a country's financial sector stability by an effective oversight regime for its SIPS is emphasized through four key responsibilities of central banks in applying the CPSIPS.** A key element of the oversight regime relates to the transparency of the payments policies being applied by the central bank: hence the requirement in Responsibility A for those policies to be publicly disclosed. This aspect of the CPSIPS report was developed in parallel with the work of the IMF on its Code of Good Practices on Transparency in Monetary and Financial Policies (see Box 6).

Box 6. Payment System Oversight and the IMF's Code on Transparency in Monetary and Financial Policies

The IMF Code (adopted by the Interim Committee in September 1999) identifies desirable transparency practices for central banks in their conduct of monetary policy and for central banks and other financial agencies in their conduct of financial policies, including payment systems. Oversight is included among the activities of financial agencies that are covered by the Code's good practices on transparency in financial policies. Section 5 of the Code identifies two practices of particular relevance:

5.3 The role of oversight agencies with regard to payment systems should be publicly disclosed.

5.3.1 The agencies overseeing the payment system should promote the timely public disclosure of general policy principles (including risk management policies) that affect the robustness of systemically important payment systems.

45. **Responsibilities B and C address the need for the central bank to assess existing payment systems,** and to initiate or promote action to ensure that the principles are implemented and enforced. Responsibility D covers the need for it to cooperate with other authorities, domestic and foreign, in the course of its oversight function.

B. The Use of the CPSIPS by the Bank and the Fund

46. **The Bank and the Fund are using the CPSIPS in their work on financial sector surveillance and development, with increasingly close attention being paid to payment system issues, and to their implications for monetary management and financial stability.**[16] Both the Bank and the Fund have also focused on the strengthening of financial infrastructures and supporting financial development, which has also been the Bank's

[16] For a more comprehensive description of the IMF's activities, see, for instance, "The IMF and Payment Systems: Technical Assistance, Surveillance and Research" by Omotunde E.G. Johnson, *Payment Systems Worldwide*, Spring 1999.

emphasis.[17] The work of the two institutions, which coordinate their efforts in the payment systems area, has made a substantial contribution to payment system developments in member countries.

47. **The role of the Bank and Fund in providing technical assistance in payment systems covers several topics.** These range from an analysis of a country's existing payment systems, to advice on the design of safe and efficient payment systems that suit the needs and specific circumstances of each country, including legal aspects, and on how to implement payment system reforms. The Bank and the Fund have also played a major role in coordinating assistance in the payment system area, as in Russia in the early 1990s (Fund), in the Southern Africa Development Community (SADC) in the late 1990s (Bank) and the Western Hemisphere Payments and Securities Clearance and Settlement Initiative (WHI) since 1998 (Bank), in the Western, Central and North Africa region (Bank) and the Eastern Europe area (Bank-Fund). During the period 1998–2001, about 50 countries received Fund technical assistance missions explicitly on payment system issues, while the Bank has carried out payments activities in a similar number of countries, through a combination of technical assistance, lending operations and knowledge dissemination.

48. **Bank and Fund staff have published a number of books and working papers** with a view to promoting best practices in the area of payment systems;[18] and they have organized seminars and workshops for central bankers on a regular basis at the Joint Vienna Institute and the Singapore Regional Training Institute (Fund) and at the Centro de Estudios Monetarios Latinoamericanos (CEMLA) in Mexico City (Bank).

IV. The Assessment Process and the Main Findings

A. The Assessment Process

49. **In the course of the FSAP program, 57 SIPS in 42 countries have been assessed. The identification of the SIPS is determined jointly by the national authorities and the Bank-Fund staff**. The assessment is usually performed by one payment system expert, although some missions to countries with two or more SIPS, or with very large or well-developed financial markets, could include two payment system experts. Some assessors are Bank or Fund staff members, while others come from the FSAP Cooperating Official Institutions (COI) (see Table 1).

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[17] For a more comprehensive description of the Bank's activities, see www.worldbank.org/finance.

[18] See, footnote in Box 1, page 8.

Table 1. Number of Experts and Cooperating Official Institutions

	Number of Experts	Number of COIs
FY 2000	6	5
FY 2001	16	12
FY 2002	15	12

50. **The approach used by the assessors involves a combination of written material, interviews and discussions, building, where appropriate, on a self-assessment of its SIPS undertaken by the central bank (see Box 7).** In many countries, assessors found payment system projects in various stages, the assessments, however, have focused on the existing payment systems at the time of the FSAP mission. In the course of the mission the assessors meet with relevant experts from the central bank, including the overseers of the SIPS and its operators (who may be from the central bank or the private sector). They also meet with other participants in the system, the banking supervisors, relevant government departments and other financial institutions.

Box 7. CPSIPS Self-Assessments

Following the release of the CPSIPS Report, central banks began to undertake self-assessments of their country's SIPS against the Core Principles. (The self-assessments of Denmark, Sweden and the United States have been made publicly available.) The completion of a self-assessment is now requested ahead of an FSAP mission and should normally be available to the assessor(s).

At the regional level, the newly formed Working Group on Payments System Issues of the central banks of Latin America and the Caribbean (LAC) has decided to carry out a self-assessment exercise on each country's SIPS. A detailed questionnaire to guide this exercise is based on the questionnaire prepared by the Bank and the Fund in the context of the payment system analysis under the FSAP. Under this initiative it is left to each individual central bank to decide how widely it will make available the results of its completed self-assessment.

B. The Assessment of the CPSIPS

Main findings

51. **Overall, the assessments are revealing substantial weaknesses in many SIPS.**[19] These weaknesses suggest that many of them may be vulnerable to shocks—internal or

[19] A number of SIPS were not individually assessed during the pilot phase of the FSAP program. For some SIPS their observance of the Core Principles was assessed, but not their observance of the central bank responsibilities for applying the principles Because many of the assessments are essentially judgmental, the exact percentages are not cited. Instead, broad qualitative descriptors (taken from the *Supporting Document to the Code of Good Practices on Transparency in Monetary and Financial Policies - July 2000*) are used to indicate the (continued…)

external—which could lead to instability in the system as a whole, and pose potential systemic problems. The extent of observance of each principle, and of each of the central bank responsibilities for applying the CPs, varies widely among these systems (see Table 2). Many of the SIPS do not observe CPs II and III in full, and are, therefore, vulnerable to potentially widespread problems, if a member is unable to settle its obligations in full and on time. CP II covers the need for SIPS participants to understand the risks they run as members of those systems, while CP III addresses the means available to them to manage and control those risks. It is important to recognize that an inability to settle may be caused not only by liquidity or a solvency problem, but also by a variety of other problems, including operational or technical failures at a single member or at a central facility.

Table 2. Aggregate Level of Observance for All SIPS

Level of Observance 1/	Observance of each Core Principle and Central Bank Responsibility 2/													
	I	II	III	IV	V	VI	VII	VIII 2/	IX	X	A	B	C	D
Observed	21	32	26	33	7	52	27	18	48	29	16	13	13	18
Broadly Observed	12	8	5	9	2	3	19	21	5	8	3	4	6	4
Partially Observed	20	12	15	3	5	1	6	11	2	14	4	5	1	3
Not Observed	4	5	11	12	11	1	5	4	2	6	7	7	9	5
Not Applicable					32							1	1	
Number of SIPS	57	57	57	57	57	57	57	54	57	57	30	30	30	30

Source: FSAP Reports

1/ A principle is considered *observed* when all assessment criteria are generally met without any significant deficiencies. It is considered *broadly observed* whenever only minor shortcomings are found, which do not raise major concerns and when corrective actions to achieve full observance of the principle are scheduled and realistically achievable within a prescribed period of time. It will be considered *partially observed* whenever the shortcomings are sufficient to raise doubts about the ability to achieve observance within a reasonable time frame. It will be considered *not observed* whenever major shortcomings are found in adhering to the assessment criteria. A principle will be considered *not applicable* whenever it does not apply given the structural, legal and institutional conditions.

2/ In some FSAPs, CP VIII and Responsibilities A-D were not assessed.

52. **The security, operational and technical reliabilities of a SIPS are addressed by CP VII.** Most systems do not observe this principle in full, and may therefore be vulnerable to failures that can prevent the daily settlement being completed in time by one or more participants, or vulnerable to fraud or misuse that can damage an individual participant.

53. **Many systems fail to observe CP IV in full; and a significant majority of the net settlement systems do not observe CP V in full.** CP IV states that a SIPS should ensure prompt final settlement on the day of value, and CP V requires every multilateral net

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prevalence of a particular finding, as follows: “Few/Some” <33%; “Many” >33%; “Most/Majority” >50%; “Significant majority” >66 settlement system to ensure its ability to settle on the due day, even if one of the participants is unable to meet its payment obligations. These findings indicate further vulnerabilities in the systems, since a settlement problem at one participant could rapidly spread to other participants, and ultimately force the central bank to step in as emergency lender of last resort.

54. **The above weaknesses are compounded by the relatively large proportion of SIPS that do not observe CP I in full that requires all SIPS to have a well-founded legal basis under all relevant jurisdictions**. Where a system has an uncertain legal basis, the impact of a settlement problem for one participant is more liable to be compounded by steps taken by the other participants to protect their own interests.

55. **The observance of CP VIII, covering the efficiency in payment systems, has proven to be difficult to assess, partly due to the lack of both an operational definition of payment system efficiency and adequate information.** The assessors' argumentations for a particular level of observance are also showing large discrepancies.

56. **The vulnerabilities, and potential instability, of many SIPS is also reflected in the fact that almost half do not observe CP X in full—the governance of a SIPS should be effective**. It is in practice not possible for a SIPS to observe this principle if it does not observe all, or most, of the other 9 principles. A failure to observe any of the principles is, by definition, a proof of a less effective governance structure.

57. **A less effective governance structure itself, reflects failures by a majority of the central banks to observe in full their responsibilities B and C, which relate to the oversight of a SIPS**. Less than half of the systems are subject to adequate oversight; if their central banks do not pay close attention to the structure and operations of the system they may not be well placed to avert potential problems, or to manage problems that do occur. Indeed, it is notable that more than half of the SIPS that are operated by the national central banks are not subject to adequate oversight by the central bank in its capacity as the overseer of the system. In terms of the transparency practices relating to oversight of the SIPS, deficiencies were most pronounced in respect of the clarity of roles, responsibilities and objectives of central banks in their capacity as overseers.[20]

58. **The most important strength disclosed by the FSAP assessments is shown by the extent of observance of CP VI—a SIPS should settle in central bank money, as a risk-free asset**. Nearly all of the systems settle in central bank money, and therefore avoid imposing on their members an interbank exposure in respect of their settlement assets. Also

[20] Under the FSAP, in conjunction with the assessment of the CPSIPS and the associated central bank responsibilities, an assessment is also made of the transparency practices relating to payment system oversight, as set out in the IMF Transparency Code (see Box 6). As of December 2001 payment system transparency had been assessed in over 40 countries.

CP IX—a SIPS should have objective and publicly disclosed criteria for participation—is observed in full by most systems.

The level of development of the countries assessed under the FSAP program

59. **In considering the extent to which the CPSIPS are observed by the SIPS assessed, a marked divergence was observed among different groupings of countries.** [21]

Developing countries

60. **The assessments suggest that a significant majority of developing countries are currently operating payment systems that suffer shortcomings in their design and operation, potentially exposing them to risks in the event of a problem (see Table 3).** This may be a consequence of different priorities, lack of adequate skilled resources and the need for enhanced understanding of payment system risks. It has potentially important implications for central banks as lenders of last resort, and for their conduct of monetary policies. It should, however, be noted that in certain of these countries payment system reform projects were already in progress, or planned, at the time of the FSAP assessments; successful implementation of these projects will reduce the systemic vulnerabilities in their SIPS.

Table 3. Aggregate Level of Observance for SIPS in Developing Countries

Level of Observance	Observance of each Core Principle and Central Bank Responsibility													
	I	II	III	IV	V	VI	VII	VIII	IX	X	A	B	C	D
Observed	5	9	5	7	4	20	7	1	19	7	3	3	3	4
Broadly Observed	4	5	2	7	1	3	11	10	4	5	2	2	2	3
Partially Observed	13	7	9	2	3	1	4	8	2	10	3	3		2
Not Observed	3	4	9	9	7	1	3	3		3	2	2	4	1
Not Applicable					10								1	
Total	25	25	25	25	25	25	25	22	25	25	10	10	10	10

Source: FSAP Reports

61. **Among the principles relating to financial stability, the SIPS in a significant majority of the developing countries fail to observe CPs II, III, and IV in full**. The inability to manage liquidity risks in a SIPS is a serious weakness in countries with frequently illiquid interbank money markets. In practice, however, it appears from the detailed assessment reports that the central bank is often expected to cover this shortfall through such measures as granting unlimited and uncollateralised loans to the non-settling bank. Where the central bank has a discretionary power to provide this liquidity, the SIPS participants will

[21] The grouping of countries is based on that applied in the IMF's World Economic Outlook.

typically assume that the central bank would always choose to lend. In effect they assume a permanent central bank guarantee on the daily settlement of the SIPS.

62. **Similarly, the multilateral net settlement systems in a significant majority of developing countries do not observe CP V in full, and cannot therefore be certain of their ability to settle if one member is unable to meet its obligations**. Instead, some of the systems continue to rely on an unwinding arrangement (see Box 3), which is not acceptable in a SIPS; other systems have no provisions for such an event, or implicitly rely either on direct lending by the central bank or on obtaining access to a continuing high level of required reserves.

63. **In a significant majority of developing countries, the SIPS do not have a well-founded legal basis (CP I).** The relevant legislation may not exist, or where it exists it may not have been tested in court. For instance, in one country with an IT-based RTGS system there is a law on checks, but no law on electronic payments. In another country a private law contract governs the operation of the RTGS system, but it is uncertain whether its provisions would be upheld in the event of a challenge by the liquidator of a bank. The multilateral netting arrangements, in one large country with a check-based SIPS, are not backed by law, and again might not survive if challenged. In the same country there are substantial problems and extensive delays in realizing collateral, which exacerbates interbank credit risks as well as liquidity risks. In several countries, no attempts have been made to establish the legal rights and obligations of foreign banks under the host country's bankruptcy legislation.

64. **Governance of the SIPS is an important weakness, with a significant majority of them failing to observe CP X; Similarly, the central banks do not fully observe their responsibilities to ensure adequate oversight arrangements, or to cooperate with other relevant authorities, domestic or foreign**. In some countries, the central bank lacks the statutory authority to oversee those payment systems that it does not itself operate. In another country no single function in the central bank has a clear mandate to carry out this task, leading to confusion between departments. In only a few countries are the SIPS judged to be efficient and practical (CP VIII).

Countries in transition

65. **The SIPS of the countries in transition appear in general to be markedly less vulnerable than those of the developing countries (see Table 4)**. This largely reflects the fact that the countries, which are candidates to become members of the EU (the "Accession Countries"), have, with extensive assistance from the EU central banks and other institutions, made major efforts to prepare their RTGS systems to be able to join the EU RTGS system,

TARGET.[22] Among other measures, they have begun to amend their laws and regulations to be able to observe CP I and other principles in full. Where there are weaknesses, in both accession countries and in the other countries in transitions, they are similar to those described above in respect of the developing countries.

Table 4. Aggregate Level of Observance for SIPS in Countries in Transition

Level of Observance	Observance of each Core Principle and Central Bank Responsibility													
	I	II	III	IV	V	VI	VII	VIII	IX	X	A	B	C	D
Observed	4	13	11	15	2	19	10	9	18	11	6	4	5	7
Broadly Observed	7	3	3	2	1		5	6	1	3	1	2	3	1
Partially Observed	7	3	4		1		2	3		4	1	2		1
Not Observed	1		1	2	3		2	1		1	2	2	2	1
Not Applicable					12									
Total	19	19	19	19	19	19	19	19	19	19	10	10	10	10

Source: FSAP Reports.

66. **Among the key financial stability principles, a significant majority of these countries observe CPs II, III, and IV in full.** The remaining countries continue to incur liquidity risks, which they are not able fully to manage, and therefore implicitly rely on the central bank for emergency support. The multilateral net settlement systems in three countries fail entirely to observe CP V, but each of those countries also has an RTGS system, so that the impact of a default in the net settlement system may be more easily containable, again, however, with reliance on the central bank.

67. **An important weakness continues to be shown in respect of CP I (Legal certainty), which a significant majority of these countries do not observe in full, although (as stated above) this aspect is being addressed at least in the EU Accession Countries**. There are also clear weaknesses in respect of their governance and oversight, including the oversight of the SIPS operated by the central banks themselves.

Advanced economies

68. **The SIPS of the advanced economies are generally robust, and appear to be the least vulnerable to systemic shocks, among all those assessed by FSAP missions (see Table 5)**. Central banks in these countries (nearly all of which are members of the G-10 or the EU) have generally been well exposed to payment system issues and concepts throughout the

[22] Of the 12 countries in this category, which have been assessed by FSAP missions, 8 are EU Accession Countries.

last 10 to 15 years, and most of them have already taken very substantial steps to reform their payment systems.

Table 5. Aggregate Level of Observance for SIPS in Advanced Economies

Level of Observance	Observance of each Core Principle and Central Bank Responsibility													
	I	II	III	IV	V	VI	VII	VIII	IX	X	A	B	C	D
Observed	12	10	10	11	1	13	10	8	11	11	7	6	5	7
Broadly Observed	1						3	5					1	
Partially Observed		2	2	1	1								1	
Not Observed		1	1	1	1				2	2	3	3	3	3
Not Applicable					10							1		
Total	13	13	13	13	13	13	13	13	13	13	10	10	10	10

Source: FSAP Reports.

69. **Nearly all the SIPS in the advanced economies observe in full 7 out of the 9 applicable Core Principles,[23] including the principles that are key for financial stability—CPs I, II, III, IV, and V.** The outliers already have implemented, or are in the process of implementing, projects to reform their payment systems so that they observe in full the CPs and the associated central bank responsibilities.

V. Assessment Recommendations and Post-Assessment Follow-Up

A. Assessment Recommendations

70. **The assessments have provided a basis for recommendations on taking corrective action to address the shortcomings and improve the payment systems and its oversight.** Several policy and technical recommendations have been made, mainly focusing on enhancing the stability of the payment systems, and its future development.

Stability and soundness issues

71. **Most recommendations in this areas have been based on the deficiencies affecting the stability and soundness of the payment systems (CPs I through VII, and central bank responsibilities B, C, and D)**. On the legal basis of the SIPS, recommendations have been made for the review and strengthening of bankruptcy laws, including the laws on bilateral and multilateral netting, to ensure finality of payments through

[23] CP V is only applicable to net settlement systems, and most of these countries do not have a SIPS that is a net settlement system.

the SIPS. In some cases, suggestions have been made for the need to clarify the law on pledges and collateral, and for getting appropriate opinions from foreign banks confirming that their home-country laws are consistent with the governing law of the SIPS.

72. **As regards the need for improving the understanding and management of financial risks, recommendations focus on consolidating the systems rules and regulations, and for the payment system participants to improve their understanding of credit and liquidity risks in the SIPS.** Recommendations have emphasized the need for a review of the procedures for dealing with settlement problems; providing real-time information to participants on the flow of their payments and receipts through the system; and for the central banks to consider the provision of intraday liquidity to participants, and to review future liquidity needs in the payment system.

73. **On improving the security and operational reliability, recommendations relate to establishing back-up processing sites;** regularly reviewing and testing contingency procedures, including against potential liquidity problems resulting from increasingly close cross-sectoral and cross-border linkages; and occasionally using external auditors to review the system.

74. **Recommendations on central bank oversight of the SIPS have emphasized strengthening the oversight powers of the central bank and give it a statutory base, including legal protection for the relevant officials.** Suggestions have also been made with regard to the institutional arrangements for oversight, including the need for improving the expertise in the oversight function, and separating the function from other central bank tasks. These have complemented the recommendations made based on the assessment of the MFP Transparency Code, and included clarifying the respective roles and responsibilities of the central bank and the banking supervisors in respect of the payment systems and its participants; developing and disclosing the co-operative arrangement with the banking supervisor, including a formal protocol or MoU; improve the communication of general principles of payment system policies, including risk management policies, and clarifying the laws defining the respective roles and responsibilities of the central bank and other agencies as they relate to payment systems.

Issues relating to the future development of the financial sector

75. **While relatively few recommendations were made in respect of these issues, the recommendations sought to address concerns of efficiency and practicality, the rules for access to the SIPS, and its governance arrangements.**

76. **For improving efficiency and practicality of the payment systems, recommendations were made for reviewing the cost structures and the pricing policies, including the full cost-recovery.** Specific suggestions also included: investigating pricing incentives to promote a smooth flow of payments and to reduce peak hour liquidity stresses.

Recommendations were also made toward strengthening the precautions against fraud so as to increase public confidence in the banking system.

77. **With respect to access to the SIPS, recommendations focused on making explicit and disclosing the criteria for access to, and exit from the SIPS, and reviewing the structure of fees for small banks and for nonbank financial institutions.**

78. **Governance related recommendations consisted of creating a National Payments Council or a similar consultative forum; developing and publishing a statement of the central bank's payment system policies; publishing information about the central bank's support for individual banks; and making transparent the rules for obtaining overdrafts from the central bank.**

Prioritization of recommendations

79. **The assessors did not in general prioritize their recommendations. Several of the recommendations would, however, in practice, have to be pursued concurrently.** For example, a SIPS which is the subject of separate recommendations under CPs II, III and VIII, the central bank will need to take these forward together, so as to achieve a practical and balanced trade-off between the objectives of risk reduction, practicality and efficiency which are inherent in those principles.

80. **An analysis of the recommendations made, also shows that they are not always entirely consistent with the level of observance the assessors gave for individual principles.** A factor that may account for some of this difference is that the assessment shows the situation, as it is, at the time of the mission, while noting any changes or reform projects that are in the course of being implemented; while the recommendations generally focus on problems or lacunae that are not currently being addressed.

B. The Authorities' Responses

81. **The responses from the authorities to the outcome of the FSAP assessment process as it relates to payment system vulnerabilities have generally been very positive**. Developing countries, in particular, and to a lesser extent the countries in transition, found an educative and informative value in the task of preparing for the assessment, including the completion of a preparatory factual questionnaire; the preparatory work also contributed to a greater understanding of the CPSIPS. The assessment process itself, and the detailed discussions held with the assessor on each of the CPs, further advanced this understanding—including an increased awareness among the senior management of the various central banks of the importance of payment system issues.

82. **In the advanced economies, the authorities found it useful to discuss their payment systems with FSAP payment system experts**, who were able to bring new

insights and suggest new approaches on particular issues. In a few countries, they also put themselves through a self-assessment exercise.

83. **The assessment process also helped to create increased awareness of payment system issues in the banking community**. In some countries the authorities asked the assessors to present its findings to the payment system participants, with the aim of convincing them that there was a strong case for making major changes, including building new systems, in order to achieve a higher degree of safety and efficiency in the SIPS.

84. **Several countries have confirmed that following the outcome of their assessments they are taking steps to upgrade their payment systems, to make them safer and more efficient**. Among these steps are changes to the relevant laws, including an enhancement of the legal oversight responsibilities of the central bank; the formation of a policy-makers' team in the central bank and development of an appropriate policy; the implementation of new security measures in the SIPS; and a new (and substantially improved) framework for risk management in a netting system.

85. **In respect of some SIPS, however, there were areas where the assessors and the authorities had different views on certain issues.** Thus, a central bank claimed that its ability to lend to banks would ensure that its check clearing system would always be able to settle, and therefore the system fully observed CP V, despite its lack of any risk-management mechanism. While that view is no doubt correct in current circumstances, the net settlement system cannot be said to observe in full CPs II and III (the understanding and management of financial risks): there can be no certainty about the management of risks in a system whose rules prescribe an unwind in the event of a settlement failure, and whose daily settlement therefore depends ultimately on the permanent willingness of the central bank to exercise its discretion in favor of lending to a problem bank. There have also been disagreements between assessors and central banks about the legal basis of the SIPS (CP I), with a central bank asserting that it had an adequate legal framework for its RTGS system, while the assessor was concerned about the enforceability of collateral security arrangements, on which the RTGS participants may depend for obtaining intraday liquidity.

C. Follow-up and Technical Assistance

86. **The findings by FSAP missions have in some cases resulted in central banks asking for, and receiving, technical assistance from the Bank and the Fund.** Such requests are likely to be forthcoming both as a result of FSAP missions and of peer pressure from the central bank community. The technical assistance has covered topics like discussions about features in RTGS systems (for example, queuing of payments, payment message types and central bank intraday lending to participants), as well as broader issues like payment system reforms, involving either large value payment systems or retail payment systems or both.

VI. Enhancing the Assessment Process

87. **Experience of the process of assessing SIPS since the start of the FSAP has revealed several shortcomings.** These were discussed in a technical review of the process by Bank and Fund staff together with the external assessors for the Basel Core Principles of Effective Banking Supervision, the IOSCO Objectives and Principles for Securities Regulation and the CPSIPS, in Paris in November 2001.[24] Four areas were identified, as needing improvements—(i) consistency in assessments; (ii) assessment of actual implementation; (iii) links between the standards assessments and the diagnosis of sectoral risks and vulnerabilities; and (iv) management of the overall assessment process.

A. Improving Assessment Modalities

88. **Insofar as they are relevant to the CPSIPS assessments, the following areas are being progressively addressed:**

- the need for comprehensive guidance for the assessors on the approach and the methodology to be adopted, to ensure thoroughness and consistency. This is now provided by a Guidance Note (GN) prepared by the Bank and the Fund, in collaboration with the CPSS, which was issued in August 2001. The GN has been built on the detailed notes on the interpretation and implementation of each principle which were prepared by the CPSS, but which became available only about a year after the start of the program;

- the benefits, as a further aid to consistency, of using assessors who are experienced in the process and the approach. This is being addressed, wherever feasible, by the selection of individuals who have already participated in previous FSAP missions, or who come from central banks that have hosted FSAP missions; and

- the introduction of a uniform presentation of the outcome and conclusions of the assessments, to assist in the use and, where appropriate, in the publication (by the Bank, the Fund or by the country authorities) of the resulting reports on a basis that is comparable between countries. This is also being addressed through the GN.

89. The vulnerabilities that has been found in SIPS have not always been taken fully into account in the overall financial sector stability assessment. There is a need for a more in depths analysis of the effects that payment system vulnerabilities may have on a country's financial system and on macroeconomic development.

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[24] IMF, World Bank: Financial Sector Assessment Program—Technical Consultations on Strengthening the Assessment of Financial Sector Standards, Memo to Bank-Fund Financial Sector Liason Committee (March 2002).

90. **Other areas refer more in general to the FSAP process.** In particular, an early preparation of the mission, which includes access to all available information on the FSAP experience and the current situation in the country. Also, the availability of Bank-Fund experts in banking supervision, securities regulation and payments for eventual assistance in all phases of the process, and an effective communication in the post-mission work within the team and with country authorities, have emerged as key issues, which need to be improved.

B. The Efficacy of the CPSIPS

91. **The experience to date suggests that the CPSIPS provide a satisfactory framework for assessing and grading SIPS.** The assessments has, however, identified some issues, which should be considered by the assessors, but were not fully brought out in the GN, nor in the Interpretation and Implementation notes prepared by the CPSS to accompany the principles. Experience has moreover emphasized that the detailed application of the principles in each country—and therefore the way in which they are used by assessors as benchmarks of best practice—is essentially specific to that country, and that the assessors should not expect to see an identical solution applied in every country. As indicated in Chapter III (A) above, the principles are objectives, not prescriptions, and there can be different, and entirely legitimate, ways to achieve those objectives, depending on the circumstances of each country and its SIPS.

92. **Three issues in particular should be considered by the assessors—**the context within which liquidity risks can be managed by the SIPS participants; the scope for a SIPS to be adversely affected by problems in a financial market settlement system, which is linked to that payment system; and the scope for reducing risks in a check system by diverting some of its larger payments through an inexpensive RTGS system.

93. **The ability to manage the credit and liquidity risks incurred by the participants in a SIPS is addressed by CP III**, since the successful management of those risks is a key consideration in maintaining the financial stability of each country. That ability can, however, properly be assessed only within the wider context of the markets in which the SIPS is operating, and whose payment traffic it is handling. Thus, if there is a deep and liquid money market, in which most of the SIPS participants, and possibly the central bank, are active, it may often be possible to cover a participant's failure to settle through the market, so avoiding any systemic impact. If, on the other hand, the money market is shallow and inactive, perhaps because the liquidity is generally concentrated in a few large banks, which are unwilling to lend to their competitors, a settlement failure at one institution could have a wider systemic impact.

94. **The assessment of a system's observance of CP III needs also to take account of the extent to which there are formal links between the payment system and the settlement systems for securities or other financial instruments, or with payment systems in other currencies, for the settlement of foreign exchange transactions**.

Chapter II C above discusses the potential impact of a settlement fail in one system on the smooth flow of transactions in another system, when they are linked through a DvP or PvP facility. The risk of that contagious impact cannot easily be quantified, nor therefore can it easily be managed; but it needs to be clearly recognized and commented on in the course of the assessment.

95. **In some countries, which have been subject to FSAP assessment, there is a lack of comprehensive data on the use of their national payment systems**. It is therefore difficult to measure, on a consistent basis, the credit and liquidity exposures arising in the settlement of the systems; and exposures, which cannot be measured, cannot easily be managed. It is also hard to assess whether any particular system is practical and efficient for its users; and it is difficult to establish a satisfactory business case for any major reform project.

96. **The SIPS in many countries that have been assessed by FSAP missions are check-clearing systems.** The CPSIPS report recognizes very clearly the practical difficulties, and the cost and efficiency implications, of seeking to bring a check system into full observance of several of the principles, and in particular of CP V. It is often logical, therefore, for an assessor to recommend that an RTGS system be established, to carry the large value and time-critical payments hitherto made by check, following which the check system itself may no longer be regarded as systemically important. Such a recommendation should, at least in the smaller developing countries, which are concerned about the implementation cost, be accompanied by the reassurance that a large value low volume gross settlement system does not have to be IT-based to be effective: a well-designed paper-based system could be fully observant of all the Core Principles, and—in the right circumstances—be more efficient than an IT-based system.

97. **Despite the availability of the GN, the judgments as to whether each individual SIPS has a sound legal basis (CP I), is secure and reliable (CP VII) and is efficient for the economy (CP VIII) have proved particularly problematic for assessors.** Consideration of the legal basis requires a scrutiny of all the relevant laws and regulations on the payment systems and instruments in the country, and on bankruptcy and insolvency; it also requires an examination of the way in which relevant cases have in the past been handled by the courts. In a country where no such cases have been through the legal system, an opinion is required, from a qualified source, as to how the courts would approach a hypothetical situation involving a failure to settle by an illiquid or insolvent debtor bank in the payment system. There is typically little time or opportunity, during an FSAP mission, to take this topic in the depth required. The assessor still has to judge the level of observance, but should also identify the questions, which need to be addressed by the central bank's legal department, or by its external legal advisers, as time and resources permit.

98. **Consideration of the security and reliability of an IT-based SIPS, under CP VII, requires specialist competence**. The assessor is unlikely to possess this competence, and

will in any case have insufficient time during an FSAP mission to pursue the topic in detail. The assessor should, therefore, seek to ensure that the central bank and the payment system participants have taken appropriately qualified expert advice, which is being continually reviewed, and that this aspect of the SIPS is subject to regular audit by specialists.

99. **A full assessment of a system's efficiency under CP VIII requires detailed information on costs and revenues in the central bank, as well as data on the participants' liquidity needs and other indicators; the views of a range of participants in the system are also desirable.** Even if all this information is made available to the assessor, there is usually insufficient time to examine it thoroughly. It is therefore sometimes necessary to proceed merely by comparing the transaction charges, for payments through a system, or the central bank's cost-recovery policy, with those applied in other countries, although the use of this approach makes it more difficult to take account of the specific national circumstances of each SIPS.

VII. Concluding Observations

100. **The assessment of the Core Principles has made a substantial contribution to the overall FSAP program.** It has helped to increase the recognition of the fundamental importance of secure, reliable and efficient payment systems in the infrastructure of every market economy, and in ensuring the stability of their banking systems. It has for a number of central banks, particularly in developing countries, but also in some countries in transition, increased their understanding of the risks and vulnerabilities in their economies and financial markets that result from the current state of their SIPS. This provides a strong basis for future training or technical assistance projects by the Bank and the Fund. The assessment process has also furthered the relationship of the Bank and Fund with the CPSS in the on-going efforts to strengthen the financial architecture of the world's market economies. More work is, however, needed to make sure that major potential vulnerabilities in the payment system, are fully taken into account in the general assessment of the stability of the financial sectors of the assessed countries.

101. **The FSAP experience has shown that the CPSIPS provide an useful and robust framework to assess the reliability and efficiency of the systemically important payments system**. Clarification is still necessary on some implementation issues particularly for Principles I, VII, and VIII. The continuing dialogue between the Bank and the Fund and the CPSS, with an active involvement of all assessors will lead to an increasingly better understanding of these issues. Efforts should also be made to promote the CPSIPS report and its standards, particularly in developing countries.

102. **In many of the SIPS, particularly in developing countries, some substantial weaknesses have emerged.** On the other hand, in some of these countries, reform programs are in place to eliminate or reduce these weaknesses, in some cases with support from the Bank and the Fund. The continuing involvement of the Bank and the Fund, with support

from the CPSS, in reform activities will increase the number of SIPS in compliance with the CPSIPS, especially in the developing world.

103. **The assessment process still needs to be streamlined, despite the very positive impact of the GN.** In particular a constant dialogue between the country authorities, the team leaders, the assessors and the Bank-Fund experts especially prior to the mission will improve the efficacy of the fieldwork, and the quality of the assessment. Flexibility when putting the mission together, taking into account the number of systems, as well as the complexity of the financial market to be assessed, would be beneficial for the assessment process.