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## **CPSS Core Principles for Payment Systems.**

Heinrich, Gregor

IMF International Monetary Fund

30 October 2003

Online at <https://mpra.ub.uni-muenchen.de/47429/>  
MPRA Paper No. 47429, posted 06 Jun 2013 08:50 UTC

GREGOR HEINRICH

There are a number of international initiatives that have the goal of improving or maintaining financial stability by strengthening financial infrastructure. The Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten (G-10) countries is contributing to this process through its work on developing Core Principles for systemically important payment systems (Core Principles).

At the time of this presentation, the Core Principles are not yet finalized. In December 1999 a consultative report was published, containing a set of Core Principles. At its meeting in Mexico in May, the CPSS approved the current draft of the Core Principles and also encouraged continuation of the work on Part 2 of the report, which explains the principles in more detail and provides guidelines for their implementation.<sup>1</sup>

The principles are expressed in a deliberately general way to help ensure that they can be useful in all countries and that they will be durable. They do not represent a blueprint for the design or operation of any individual system, but suggest the key characteristics that all systemically important payment systems ("SIPS") should satisfy.

The CPSS established a Task Force on Payment System Principles and Practices in May 1998 to consider what principles should govern the design and operation of payment systems in all

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<sup>1</sup> Almost 300 comments and suggestions were offered in the first consultative phase. In summer 2000 a revised text, taking account of the comments received was again made available for public comment, and the final version was published in January 2001 ([www.bis.org/cpss](http://www.bis.org/cpss)). This article reflects the state of discussions at the time of the presentation.

countries? The Task Force is seeking to develop an international consensus on such principles. It comprises representatives not only from G-10 central banks and the European Central Bank, but also from 11 other national central banks of countries in different stages of economic development from all over the world and representatives from the International Monetary Fund and the World Bank. In undertaking its work it has also consulted groups of central banks in Africa, the Americas, Asia, Pacific rim, and Europe.

### **The CPSS and General Concern for Risk Reduction**

The CPSS is one of the permanent central bank committees reporting to the G-10. The G-10 Governors established the CPSS in 1990, as a follow-up to the work of the Committee on Interbank Netting Schemes, which produced the "Lamfalussy Report,"<sup>3</sup> and more generally to take over and extend the activities of the earlier Group of Experts on Payment Systems, in 1990.

The CPSS serves as a forum for the G-10 central banks to monitor and analyze developments in domestic payment, settlement, and clearing systems as well as in cross-border and multicurrency netting schemes. It also provides a means of coordinating the oversight functions to be assumed by the G-10 central banks with respect to these private netting schemes. In addition to addressing general concerns regarding the efficiency and stability of payment, clearing, settlement, and related arrangements, the CPSS pays attention to the relationships between payment and settlement arrangements, central bank payment and settlement services, and the major financial markets which are relevant for the conduct of monetary policy.

The CPSS, under the auspices of the Bank for International Settlements (BIS), has published various reports in recent years covering large-value funds transfer systems, securities settlement systems, settlement mechanisms for foreign exchange transactions,

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<sup>2</sup> Chairman of the Task Force is Mr. John Trundle, Head, Market Infrastructure Division, Bank of England; *see* Annex 3.

<sup>3</sup> "Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries," BIS, November 1990.

clearing arrangements for exchange-traded derivatives, and electronic money.<sup>4</sup>

The CPSS has long been at the forefront of efforts to reduce risks in payment and settlement systems. This has been motivated by concerns that the credit and liquidity risks inherent in payment and settlement systems have the potential to contribute to systemic problems if not properly managed and controlled. In this connection, the CPSS has considered it important to cooperate with other groups, including the International Organization of Securities Commissions (IOSCO), the Basel Committee on Banking Supervision, and the G-10 Deputies, to address issues of common concern. In the context of its activities the CPSS maintains contact with many global payment system providers, industry associations, and other regulatory authorities.

The work of the CPSS has consistently emphasized the importance of large-value interbank funds transfer systems, which are used by banks to execute payments among themselves for their own account or on behalf of customers. More recently, the CPSS has also embarked on a more detailed study of retail payment instruments and related settlement systems. Payment systems, their risk management arrangements, and implications for central bank policy have often been a focus of the CPSS discussions, and over time it has compiled substantial information on their main characteristics both in G-10 and in non-G-10 countries. This experience has laid the groundwork on which the new Core Principles can build.

### **Why Core Principles for Payment Systems?**

Safe and efficient payment systems are critical to the effective functioning of the financial system. Payment systems are the means by which funds are transferred between banks, and the most significant payment systems, which the Core Principles refer to as "systemically important payment systems," are a major channel by which shocks can be transmitted across domestic and international financial systems and markets. Robust payment systems are,

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<sup>4</sup> Most publications are available online at the website of the Bank for International Settlements (BIS) at <http://www.bis.org/cpss>.

therefore, a key requirement in maintaining and promoting financial stability.

As regards the Core Principles in particular, several influences are of relevance: international consensus for promoting internationally accepted standards, the objective need to reduce payment system risk, the request from many emerging market economies for particular guidance in their payment system reform process, and the existing body of policies and recommendations emanating from the CPSS.

### **The Consensus for Promoting Internationally Accepted Standards**

Over the past few years, a broad international consensus has developed on the need to strengthen payment systems by promoting internationally accepted standards and practices for their design and operation. The consensus for promoting internationally accepted standards was perhaps first formulated in 1997 by the ad hoc Working Party on Financial Stability in its report on "Financial Stability in Emerging Market Economies."<sup>5</sup>

In response to an initiative at the Lyon summit in June 1996, representatives of the countries in the Group of Ten and of emerging market economies had jointly sought to develop a strategy for fostering financial stability in countries experiencing rapid economic growth and undergoing substantial changes in their financial systems.<sup>6</sup>

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<sup>5</sup> "Financial Stability in Emerging Market Economies-A strategy for the formulation, adoption, and implementation of sound principles and practices to strengthen financial systems," Report of the Working Party on Financial Stability in Emerging Market Economies, April 1997; ([www.bis.org/publ/gten02.htm](http://www.bis.org/publ/gten02.htm)).

<sup>6</sup> Representatives of Argentina, France, Germany, Hong Kong, Indonesia, Japan, Korea, Mexico, the Netherlands, Poland, Singapore, Sweden, Thailand, the United Kingdom, and the United States participated in the work, which was carried out under the chairmanship of Mario Draghi, Chairman of the Deputies of the Group of Ten. In the course of the work, representatives of these economies consulted with officials from other countries in order to take account of their views on the matters being considered. Representatives of the Basel Committee on Banking Supervision, the International Accounting Standards Committee (IASC), and the International Organization of Securities Commissions (IOSCO) and staff members of the Bank for International Settlements (BIS), the European Commission, International Monetary Fund (IMF), Organization for Economic Cooperation and Development (OECD), and the International Bank for Reconstruction and Development (World Bank) attended

(continued)

This enterprise had been prompted by the recognition that banking and financial crises can have serious repercussions for these economies in terms of heightened macroeconomic instability, reduced economic growth, and a less efficient allocation of savings and investment.

The Working Party formulated a concerted international strategy to promote the establishment, adoption, and implementation of sound principles and practices needed for financial stability. The strategy has the following major components:

- Development of an international consensus on the key elements of a sound financial and regulatory system by representatives of the G-10 and emerging market economies;
- Formulation of norms, principles, and practices by international groupings of national authorities with relevant expertise;
- Experience such as the Basel Committee, the International Association of Insurance Supervisors (IAIS), and IOSCO;
- Use of market discipline and market access channels to provide incentives for the adoption of sound supervisory systems, better corporate governance, and other key elements of a robust financial system; and
- Promotion by multilateral institutions such as the IMF, the World Bank, and the regional development banks of the adoption and implementation of sound principles and practices.

Financial stability requires sufficient political and social consensus supporting the measures needed to establish and maintain that stability. A financial system that is robust is less susceptible to the risk that a financial crisis will erupt in the wake of real economic disturbances and more resilient in the face of crises that do occur.

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the meetings and provided crucial input. The working party also consulted with other international groupings, received contributions from a number of regional development banks, and had the benefit of market participants' views.

Although reforms are in many cases urgent, the time required for their implementation will differ considerably depending on the nature of the reform and the need for appropriate sequencing.

The working party thus established that the international community could be of assistance by developing in a consultative manner a corpus of sound principles and practices bearing on financial system robustness and supporting their adoption and implementation.

As the existing examples of standards issued by various standard setting bodies show, these "high-level" recommendations by the Working Party on Financial Stability have resulted in a number of detailed initiatives, each geared toward plugging particular gaps in the global financial stability framework.

Such standards, including the Core Principles, are important as "the widespread adoption of high-quality internationally accepted standards, or codes of good practice, can make an important contribution to effective policymaking, well-functioning financial markets and a stronger international financial system."<sup>8</sup>

### **The Need to Reduce Payment System Risk**

Stable and healthy payment systems are the essence of a well functioning market economy. The need for a well-founded body of principles which all countries can look to for guidance is ever more important, given the developments in payments and payment systems in particular during the past 20 years.

Probably most important is the phenomenal growth in financial market activity. Estimates compiled by the CPSS indicate that these systems transfer the equivalent of over 6 trillion U.S. dollars per day in the G-10 countries,<sup>9</sup> a large portion of which is related to the settlement of financial market transactions. Since financial

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<sup>7</sup> See the Financial Stability Forum's "compendium of standards" at [http://www.financialstabilityboard.org/cos/key\\_standards.htm](http://www.financialstabilityboard.org/cos/key_standards.htm) ]

<sup>8</sup> (<http://www.financialstabilityboard.org/cos/wasi.htm>)

<sup>9</sup> Bank for International Settlements, *Statistics on Payment Systems in the Group of Ten Countries*, 1998.

of Ten Countries, 1998.

transactions almost invariably involve some form of payment, one product of this market growth has been growth in the values that have to be handled by payment systems-many of which were originally ill equipped to handle the activity. The result: a substantial increase in risks.

This growth has occurred in terms of both the total number of individual payments and related messages as well as of the total amounts involved in payments. For instance:

- CHIPS, the New York Clearing House's net settlement system and, along with the European Central Bank's real-time gross settlement system TARGET, the system with the largest turnover, is a good example for the volumes settled in one single system, and for its cross-border impact: 87 financial institutions from 27 countries create an average daily volume of 234,000 payments valued at a total of US\$1.3 trillion; its peak day, so far, was November 28, 1997, when 457,012 payments were settled, with a total value of US\$22,236 trillion.<sup>10</sup> As regards TARGET, transnational payments within TARGET reached a daily average of 350 billion euro in July 1999.
- Within the European Union (EU) the volume of cross-border payments is bound to increase as the internal market establishes itself and develops toward full economic and monetary union,<sup>11</sup> in particular as the European Central Bank has urged the providers of payment services to develop an infrastructure that allows payments from one EU country to another to be made as fast and cheaply as within any given national/domestic framework.
- S.W.I.F.T. was considered very successful in 1978 when it linked about 500 banks in 16 countries and had achieved an annual traffic volume of almost 25 million financial messages. Today S.W.I.F.T. handles the same number of messages in a few weeks,

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<sup>10</sup> Nelson, "Proposed changes to CHIPS," *Int'l PaySys*, London: ibc, 1999.

<sup>11</sup> In March 1992 the volume of retail payments below ECU 2,500 was estimated at 200 million transactions: "Payment systems in Europe," opening address by Commissioner d'Archirati at the European Finance Convention, December 3, 1993. In the EU, the Commission typically focuses on retail payments, whereas work on large-value payment systems has been undertaken by central banks.



and its users, who now exceed 6,500 in number, are located in roughly 130 countries; traffic totalled 937 million messages in 1998.<sup>12</sup>

Payment systems involve many risks. The prime concern here—i.e., from the point of view of regulation—is counterparty risk. That is, credit and liquidity risks arising from the interbank exposures which exist in many payment systems.

More specifically, the concern is with counterparty risk where it is extreme enough to cause systemic risk—namely, the risk that, because of these interbank exposures in payment systems, the failure of one bank participating in a payment system will cause the failure of others.

### **Request from Emerging Markets**

Emerging markets have themselves been requesting guidance. In the same measure as awareness of payment system risk increases, central banks worldwide have been active in reducing perceived risks. One tendency is certainly the increased introduction of real-time gross settlement (RTGS) systems.<sup>13</sup> RTGS is particularly important, partly because it comes as close to eliminating payment system risk as you can get and partly because it is an important platform for other system improvements—namely, mechanisms to deal with the "exchange of value" risk that occurs when settling financial market transactions.

But also netting systems have undergone constant improvements towards greater safety and towards reducing to a very large extent payment system risk.

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<sup>12</sup> S.W.I.F.T. — 1998 Annual Report, p. 14. As a systems operator for the private ECU Clearing and Settlement System, S.W.I.F.T. started in 1986 with 7 clearing banks and about 1,700 daily transactions (average), and terminated these services in December 1998 with 62 clearing banks and on average 7,308 daily transactions (information provided by the BIS as former Agent for the Private ECU Clearing and Settlement System, January 4, 1999).

<sup>13</sup> We are not aware of a list containing all existing RTGS systems, but we know of over 40 countries where RTGS systems, or systems with similar risk reduction effects, have been introduced or which are about to introduce such a system.

While the industrialized countries have led the pace in payment system reform, countries and institutions that are at the beginning or in the middle of a payment system reform process are eager to "do the right thing" and to be assured that the major investments they are putting forward will result in an own modern payment system infrastructure that is in line with agreed international best practice and yet compatible with the country's particular needs.

### **Making Good Use of the "Acquis"**

The CPSS and previous related groups have over the years developed a rich body of analysis of relevance to payment systems,<sup>14</sup> the best known being probably the 1990 Report to G-10 Governors of the Committee on Interbank Netting Schemes (the Lamfalussy Report)<sup>15</sup> The report analysed issues affecting cross-border and multicurrency netting schemes and established minimum standards and more general goals for the design and operation of such schemes as well as principles for their cooperative oversight by central banks.

But in the context of establishing minimum standards for relevance in promoting financial stability worldwide, i.e., for establishing standards that would address any type of system of systemic relevance, the Lamfalussy standards are suitable only to a degree.

On the one hand, the Lamfalussy standards were designed for netting arrangements in large-value payment systems in a cross-border context and did not as such contemplate the new RTG developments or entirely national systems or, for that matter, retail payment systems. Nevertheless, the standards proved to be extremely useful in assessing risk reduction measures in payment systems and the Lamfalussy standards have been accepted and applied increasingly widely, not only in the specific field for which they were

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<sup>14</sup> The past work of the CPSS and related groups has included detailed analysis of payment and settlement system infrastructure in both developed and emerging economies. Although most of the earlier work has been analytical rather than prescriptive, in some areas—notably in its work on cross-border and multicurrency netting and on foreign exchange settlement risk—more specific guidelines and strategies have been developed to reduce risk, particularly systemic risk.

<sup>15</sup> See footnote 3.

developed, but also to payment, clearing, and settlement systems of many other types, even where they did not entirely "fit" the scope of the standards. The Lamfalussy standards were instrumental in encouraging designers, operators, and overseers of netting systems to consider and address risks and to achieve certain minimum standards. "Best practice," however, as one of the goals of the CPSS Core Principles, is more demanding than the minimum and an increasing number of systems have recognized the benefits of, for example, being able to withstand the failure of more than the single largest net debtor to the system.

On the other hand, the Lamfalussy standards were developed entirely in a G-10 environment, as the only potential participants in multicurrency or cross-border netting systems at the time were from G-10 countries. Even if the Lamfalussy standards are regarded as convincing and serve as a guideline for many payment systems overseers, new standards and "core principles" for payment systems required a wide consultation with as many relevant parties as feasible.

The CPSS Core Principles thus build on the existing work; they use to a large extent standards of the Lamfalussy Report, but they also extend the Lamfalussy standards in that they do not apply only to netting systems and in that a much wider circle than only G-10 central banks participated in their creation.

### **Who Is the Audience?**

The Core Principles are directed both at public bodies as well as the private sector. On the one hand, they will be of relevance to system *operators and designers*. In many countries, the operator of a payment system will be the national central bank, but that is not necessarily the case. Designers of payment systems will also have an interest in the Core Principles as they will help the designers to avoid certain, non-compatible design features in SIPS.

The Core Principles are also directed at payment *system overseers*, mainly the central banks. The overseer will need to monitor on a regular basis the compliance of any systemically important payment system with the Core Principles. This applies both

to systems that are operated by the central bank and also to systems that are operated by the private sector.<sup>16</sup>

Finally, the Core Principles are directed at *participants and users* of SIPS as they have a justified interest to know which minimum criteria to expect from overseers and operators of such systems. Also, the requirements, expectations, and expertise of participants and users in payment systems are an important element in the continuing dialogue between operators, overseers, and users that is essential for the success of any payment system.

### **The Scope of the Core Principles**

#### "Systemically Important" Payment Systems

How does a country know which of its payment systems should comply with the Core Principles?

The consultative report sets out Core Principles for the design and operation of systemically important payment systems and defines central bank responsibilities in applying these principles. It is noteworthy that the Core Principles do not distinguish between "large-value" and "low-value" or "retail" payment systems as such, and application of the principles also does not depend on whether such systems involve a credit or debit mechanism and whether they operate electronically or involve paper-based instruments. Rather, the new term "systemically important" refers to systems that could trigger or transmit systemic disruptions in the financial area because of the size or nature of individual payments that they handle or because of the aggregate value of the payments processed. In practice the boundary between payment systems that are systemically important and those that are not will not always be clear-cut and the central bank will need to consider carefully where that boundary should be drawn.

It should be noted that it is well possible that a given country may not have a systemically important payment system. But even for

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<sup>16</sup> See Annex I, "Responsibilities of the Central Bank in Applying the Core Principles."

payment systems that are not "systemically important," the principles may also be useful in assessing and understanding the characteristics of systems which pose relatively little systemic risk and it may be desirable for such systems to comply with some or all of the principles.

### **Universal Coverage**

The Core Principles are not a set of rules that are addressed only to developed countries nor only to certain regions of the world. Rather, they are geared toward SIPS in all countries. At the same time, the principles do not propagate a certain type of system, nor do they propagate a given system of a particular country, as being the one model other countries should follow.

They are thus a general framework giving payment system overseers and other relevant institutions a guideline, and some minimum standards, for the design, operation, and oversight of payment systems.

### **Not Addressed to Securities Systems**

The focus of the Core Principles is on *payment systems*, that is, systems that provide for the transfer of funds. The most direct application is for systems which involve only funds transfers, but the principles can also apply to the payments aspects of systemically important systems in which transfers of other financial assets, such as securities, and related transfers of funds are both settled. Such systems can raise financial stability issues in their own right, so the report states that it is important too that their overall design and operation should be safe and efficient.

The Core Principles may also provide some help in evaluating the arrangements for settling other types of financial assets, such as securities settlement systems, but a full consideration lies outside the scope of the Core Principles report.

Rather, CPSS and IOSCO have embarked on a project to examine the specific issues involved in securities settlement and to draft recommendations for such systems.<sup>17</sup>

### **The Requirement of a Well-Founded Legal Basis**

As mentioned above, the Core Principles retain the essential elements of the Lamfalussy principles, as they are of relevance to SIPS.

In particular Principle I, "*The system should have a well-founded legal basis under all relevant jurisdictions,*" is identical to Principle I, taken from the Lamfalussy Report.<sup>18</sup>

When looking at the Core Principles, one will notice that not only Principle I has legal implications. In fact, a number of principles have legal implications and will require particular attention when implemented in national environment:

- Well-founded legal basis under all relevant jurisdictions (I).
- Clear rules and procedures on the system's impact on financial risks incurred through participation (II).
- Clear rules and procedures on management of credit risks and liquidity risks (III).
- Prompt final settlement on the day of value (IV).
- High degree of security and operational reliability (VII).

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<sup>17</sup> The objective of this project is to promote the implementation by securities settlement systems of measures that can reduce risks, increase efficiency, and provide adequate safeguards for investors by developing recommendations for the design, operation, and oversight of such systems. The recommendations will cover both individual systems and the cross-border linkages between systems. To this end, the two committees have set up a joint task force on securities settlement systems, comprising about 20 central banks and securities regulators, in addition to the co-chairmen, from both industrialized and emerging market economies. A first international consultative meeting with more than 50 public institutions was held at the BIS on January 19, 2000.

<sup>18</sup> See Annex II.

- Access criteria (IX).
- Governance (X).

The legal basis for a payment system is critical to its overall soundness. The term "legal basis" as such does not mean that a specific law is required that will address payment system issues or, in the context of the Core Principles, systemically important payment systems.

The foremost goal of a sound legal basis is to achieve predictability for all parties that participate in a given system. The parties therefore need to know their obligations and liabilities to a degree that they can reasonably predict the outcome of a regular transaction, and also the risks they incur in the event of a disruption of the system itself or of a failure of another participant in the system. Since most risk management systems ultimately must make assumptions about the rights and obligations of parties to payment transactions, the analysis of risk management systems almost always leads back to questions about the soundness of legal assumptions.

The "legal basis" typically consists of framework legislation as well as specific laws, regulations, and agreements governing payments and the operation of the system, and of course any binding court decisions that need to be taken into account. Framework legislation will be legislation that is of relevance to payment systems, even if not specifically addresses payment systems. Examples of framework legislation include public law rules that cannot be altered by agreement (e.g., insolvency law, public law of banking, or in some cases also competition and consumer protection laws), or general legislation whose rules may apply in the absence of particular agreements between the parties to a contract. Specific laws governing the central bank, payments including electronic payments, payment finality, payment netting, and related topics are especially relevant. In addition, laws from countries other than the host country may be relevant to the robustness of the system, where their effects can be identified.

The drafters of the Core Principles were well aware of the legal complexities and of the differences in the various national legal frameworks. Although sound legal underpinnings are very important,

absolute legal certainty is seldom achievable. Recognition of this fact, however, should not deter payment system operators, participants, and authorities from seeking to establish a sound legal basis for payment systems.

In this context, a number of important elements of the "legal basis" can be identified.

(a) *Finality*: It is particularly important to establish the timing of final settlement of payments made through the system in order to define when key financial risks are transferred in a payment system and to provide an important building block for risk management systems.

(b) *Insolvency law*: Insolvency law is very relevant, as system designers and relevant authorities must ask themselves what would happen if a participant in the system were to become insolvent. Would transactions be honored as final, or could they be considered void or voidable by liquidators and relevant authorities? In some countries, for example, so-called "zero-hour rules"<sup>19</sup> may cause payments not to be final even if they appear to have been settled in a payment system (even in a real-time gross settlement system) prior to the insolvency of a participant on the day of value.

Furthermore, insolvency statutes may not yet recognize the netted value of payments or related obligations as binding on the liquidator in the event of insolvency. For example, it can be relevant to consider whether a liquidator might be able to successfully challenge the netted value of payments in a payment system involving net settlement. In such cases, it is not safe to rely on netted amounts for credit or liquidity risk management purposes.

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<sup>19</sup> When applied in the context of a payment system, "zero-hour rules" make all transactions by the bankrupt participant null from the start ("zero hour") of the day of the bankruptcy (or similar event). In the case of a system with deferred net settlement, such a clause could cause the netting of all transactions to be unwound. This would entail a recalculation of all net positions and could cause significant changes to participants' balances, with possible systemic consequences. In a real-time gross settlement system, the effect could be to reverse payments regarding the bankrupt participant that have apparently already been settled and were thought to be final.



In particular, following the analysis undertaken for the Lamfalussy Report, a number of countries have therefore undertaken programs of legal change years to strengthen greatly the legal underpinnings of netting and to remove the risk of adverse effects from "zero-hour rules," particularly on systemically important payment systems.<sup>20</sup>

(c) *Collateral and rights in rem*: The law of secured interests (whereby, for example, collateral can be accepted as security for lending)<sup>21</sup> may also be highly relevant to the design of risk management systems for payment systems. For example, many central banks provide credit to participants in a payment system subject to some type of collateralization agreement. Many privately operated netting systems adopt collateralization mechanisms to back up lending facilities to help ensure settlement in the event of initial failures to settle. The law of secured interests is typically the foundation of the collateralization or security agreement, and must be scrutinized carefully to ensure that a security agreement will be enforceable in a timely manner as envisaged.

(d) *Technological neutrality*: As a general principle, it is desirable for laws not to differ in their effect according to the type or level of technology used in a payment system. Where electronic processing is

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<sup>20</sup> See, for instance, the EU Settlement Finality Directive, which obliges EU countries to remove "zero-hour rules" and to uphold certain netting and collateral arrangements also in the event of the insolvency of payment system participants: Directive 98/26/EC of the European Parliament and of the Council of May 19, 1998 on settlement finality in payment and securities settlement systems — *Official Journal L 166. 11/06/1998 p. 0045-0050*; Devos, "Specific cross-border problems regarding bank insolvencies and European harmonization efforts," in Giovanoli/Heinrich (ed.), *International Bank Insolvencies: A central bank perspective*, London: Kluwerlaw International, 1999, pp. 311-36. On the issues in general, see, for instance, Giovanoli, "Legal issues regarding payment and netting systems," in: *Cross-border electronic banking-Challenges and opportunities*, (ed. by J. Norton); London: Lloyd's of London, 1995, pp. 205-31; Le Guen, "Netting and legal protection for interbank settlement systems," *Banque de France Bulletin Digest*, No.10, Oct. 1994, pp. 33-44.

<sup>21</sup> A collateral transaction is typically subject to three main bodies of law: the law of secured interests, insolvency law, and contract law. The main areas of concern are the conditions under which a pledge or repo will be valid and also the procedures that have to be followed if the transferor defaults and the collateral has to be realized by the transferee. However, the most likely reason for a default by the transferor is insolvency, and thus the realization of the collateral is also likely to be directly affected by the relevant *insolvency law*.

involved, or whether the underlying instruments the system handles are electronic or paper-based, it will be necessary to ensure that the relevant law (particularly where it is not very modern) is compatible with the methods used. New legislation might indeed be needed to achieve clarity and predictability of interpretation if the existing legal system is too restrictive and/or does not allow for the parties to agree on relevant issues by contract.<sup>22</sup>

(e) *Public law of banking*: Banking and central banking laws can play an important role. Banks and central banks may need authority in law to establish and participate in payment systems and to design effective and well-managed systems, including adopting sound risk management principles.<sup>23</sup>

(f) *Foreign law*: Laws from outside the domestic jurisdiction can be relevant where there is a cross-border element to the system. At one extreme this is particularly the case where a system provides a cross-border service. The laws of the participants' home jurisdictions are likely to be relevant, as well as the laws of the jurisdiction under which the system operates. Many laws are potentially relevant, but of particular importance will be insolvency laws in the different jurisdictions. It may be relevant to consider whether, in the event of a foreign participant's insolvency, the insolvency procedure in the foreign country will have a direct effect in the country where the payment system is located or whether the foreign liquidator might be

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<sup>22</sup> See UNCITRAL Model Law on Electronic Commerce/Loi type sur le commerce électronique, June 14, 1996, ([www.uncitral.org/english/texts/electcom/ml-ec.htm](http://www.uncitral.org/english/texts/electcom/ml-ec.htm)). Also, even though not directly applicable to payment systems as such, the standard contractual arrangements contained in the S.W.I.F.T. handbook or the model standard contract between two or more trading partners developed by the United Nations and the European Union, respectively, may be of interest: United Nations Economic and Social Council (ECE), Model Interchange Agreement for the International Commercial Use of Electronic Data Interchange, of September 20, 1995, ECE Recommendation No. 26, adopted by the Working Party on Facilitation of International Trade Procedure in March 1995, UN DOC. TRADE/WP.4/R.1133/Rev.1, June 23, 1995; Bertrand, "EDI-The final draft of the European Interchange Agreement," *Int'l Computer Law Adviser* 5 (1991) 4-15.

<sup>23</sup> See Banca d'Italia, White paper on payment system oversight: Objectives, methods, areas of interest, Rome, November 1999.

able successfully to challenge the netted value of payments in a national payment system.<sup>24</sup>

Furthermore, foreign law may need to be considered when evaluating the validity of any collateral agreement in a cross-border context.

There have been a number of regional and international initiatives to reduce the risks of legal uncertainties or conflict. These include various European Union directives, such as the Settlement Finality Directive,<sup>25</sup> aimed in particular at setting legal certainty for operations with the TARGET system, the United States' Uniform Commercial Code<sup>26</sup> (on which the New York Commercial Code is based and which is of relevance for the CHIPS system) and the UNCITRAL Model Law on Cross-Border Insolvency.<sup>27</sup>

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<sup>24</sup> See Giovanoli/Heinrich (ed.), *International Bank Insolvencies: A central bank perspective*, London: Kluwerlaw International, 1999.

<sup>25</sup> *Supra* footnote 20.

<sup>26</sup> The New York Commercial Code follows— in its articles relevant to payment systems—Article 4A of the Uniform Commercial Code. The relevant section in the New York State Uniform Commercial Code Article 4-A [N.Y. U.C.C. § 4-A-403(2)], practically identical in every U.S. state, reads: "Section 4-A-403. Payment by Sender to Receiving Bank. (1) ....; (2) If the sender and receiving bank are members of a funds-transfer system that nets obligations multilaterally among participants, the receiving bank receives final settlement when settlement is complete in accordance with the rules of the system. The obligation of the sender to pay the amount of a payment order transmitted through the funds-transfer system may be satisfied, to the extent permitted by the rules of the system, by setting off and applying against the sender's obligation the right of the sender to receive payment from the receiving bank of the amount of any other payment order transmitted to the sender by the receiving bank through the funds-transfer system. The aggregate balance of obligations owed by each sender to each receiving bank in the funds-transfer system may be satisfied, to the extent permitted by the rules of the system, by setting off and applying against that balance the aggregate balance of obligations owed to the sender by other members of the system. The aggregate balance is determined after the right of setoff stated in the second sentence of this subsection has been exercised" (<http://assembly.state.ny.us/cgi-bin/claws?law=122&art=38>). Also note the general deference within the law to funds transfer system rules contained in Article 4-A-501: Section 4-A-501. Variation by Agreement and Effect of Funds— Transfer System Rule (<http://assembly.state.ny.us/cgi-bin/claws?law=122&art=39>).

<sup>27</sup> Although not geared at specific issues related to payment systems. See UNCITRAL Model Law on Cross-Border Insolvency/Loi-type sur l'insolvabilité transnationale, of May 30, 1997; UNCITRAL, Official Records of the General

As regards the law for security interests in goods, an international convention unifying substantive rules governing security interests appears does not appear to be feasible, in particular in view of the wide divergences existing among legal systems and the complexity of the issues involved in secured credit law; however, a number of international bodies are working at harmonizing applicable rules—at least for certain types of commercial transactions.<sup>28</sup>

## What Are the New Principles?

### **Principle IV, requiring at least same-day settlement, preferably intraday:**

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.

This principle is one of two that stipulates a *minimum standard*, i.e., it establishes a measurable threshold that a given system will either achieve or not achieve.

Principle IV relates to daily settlement in normal circumstances. Between the time when payments are accepted for settlement by the payment system (including satisfaction of any relevant risk management tests, such as the application of limits on exposures or availability of liquidity) and the time when final settlement actually occurs, participants may still face credit and liquidity risks. These risks are exacerbated if they extend overnight, in part because a likely time for the relevant authorities to close insolvent institutions is between business days. Prompt final settlement helps to reduce these

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Assembly, Fifty-second Session, Supplement No. 17 (A/52/17, annex I) (UNCITRAL Yearbook, vol. XXVIII: 1997, part three); *Idem*, *Guide to Enactment of the UNCITRAL Model Law on Cross-Border Insolvency* (A/CN.9/442). The Model Law and Guide to Enactment are also available at <http://www.uncitral.org/pdf/english/texts/insolven/insolvency-e.pdf>; Sekolec, "The UNCITRAL Model Law on Cross-Border Insolvency," in Giovanoli/Heinrich, *supra* footnote 24.

<sup>28</sup> For an overview of initiatives at both government and nongovernment level, see United Nations/UNCITRAL, "Security interests-Current activities and possible future work. Report of the Secretary-General," Doc. A/CN.9/475, April 27, 2000.

risks. As a minimum standard, final settlement should occur at the end of the day of value.

The Core Principles do not recommend a particular type of system that would fulfill this minimum standard, and in particular, they do not explicitly recommend the introduction of RTGS systems, as the desired goal may be achieved by several different system designs that are not necessarily "RTGS."

Nevertheless, the Core Principles report emphasizes that in most countries it should be a goal for at least one payment system to exceed this minimum standard by providing real-time final settlement during the day.<sup>29</sup> This is particularly desirable in countries with large volumes of high-value payments and sophisticated financial markets.

Principle VI, calling for safe settlement assets, preferably claims on a central bank or otherwise assets that pose little or no credit risk:

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.

Most systems involve the transfer of an asset among system participants to settle payment obligations. Most systemically important payment systems settle across the books of a central bank, as the most common and preferable form of a settlement an asset is an account balance at the central bank, representing a claim on the central bank.<sup>30</sup> In contrast, settlement via an account at a commercial financial institution always involves the credit and liquidity risk relating to the solvency of that institution.<sup>31</sup> When that central bank is the central bank of issue for the currency used by the payment system,

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<sup>29</sup> Core principles report, at Principle IV, 2.

<sup>30</sup> See Giovanoli, "Bargeld-Buchgeld-Zentralbankgeld: Einheit oder Vielfalt im Geldbegriff?," in: *Banken und Bankrecht im Wandel* (Festschrift Beat Kleiner), Zurich: Schulthess, 1993, 87–123 (121).

<sup>31</sup> Credit risk: the risk that a party within the system will be unable to fully meet its financial obligations within the system currently or at any time in the future. Liquidity risk: the risk that a party within the system will have insufficient funds to meet financial obligations within the system as and when expected, although it may be able to do so at some time in the future.

there is no credit risk for the payment system participant holding that balance, and the liquidity risk to the system and its participants is also virtually nonexistent. Such central bank balances are therefore the most satisfactory settlement assets.

There are, however, examples of other forms of settlement asset, representing claims on other supervised institutions, as exemplified in the account with a commercial bank. If settlement is completed using such assets, the Core Principles require that the assets must pose little or no credit risk. The Task Force's latest thinking is that account should also be taken of whether such an asset involves significant liquidity risk.

As all participants in the system must accept the asset, the system's safety depends in part on whether the asset leaves the holder with significant credit risk. If there were more than a negligible risk that the issuer of the asset could fail, the system could face a crisis of confidence, which would create systemic risk.

**Principle VII, stipulating that a SIPS needs to be practical for users, efficient for the economy:**

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

Operators, users (that is participants, such as banks and their customers), and overseers of systems all have an interest in the efficiency of a system. "Efficiency" is a however a very commonly used term-not just in payment systems. In the context of payment systems, the term relates to achieving an acceptable level of safety and service at the minimum cost. There will typically be a trade-off between minimizing resource costs and other objectives, such as maximizing safety. It may be conceivable to design a system that is absolutely risk free in a given environment, but the cost may be so high that noone uses it. This may be an issue in any environment where several payment systems compete with each other or where a system design that was suitable for one country was introduced into another without taking account of the country's specific factors such as geography, its population distribution, and its infrastructure.

The costs of providing payment services will depend on the quality of service and the features demanded by users, and on the need for the system to meet the Core Principles limiting risk in the system. A system which is consistent with the demands of the markets it serves is likely to be more heavily used and so will spread more widely the risk-reducing benefits of satisfying the other principles and the costs of providing the services.

But a given system that is efficient today may not be so tomorrow. Systems should therefore be designed and operated so that they can adapt to the development of the market for payment services both domestically and internationally. Their technical, business, and governance arrangements should be sufficiently flexible to respond to changing demands, for example, in adopting new technologies and procedures.

The report discusses these concepts in more detail, and sets out an analytical framework for system design. This should encompass:

- the identification of efficiency requirements;
- the evaluation of costs (social and private, including not only those that are passed on to participants directly through system charges but also indirect costs, such as cost of liquidity and collateral);
- the determination of technological and infrastructure constraints (e.g., telecommunications, energy availability, transportation, and banking structure); and
- the definition of the safety constraints imposed by the core principles.

**Principle X, requiring effective, accountable, and transparent governance arrangements:**

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

Payment system governance arrangements<sup>32</sup> encompass the set of relationships between the payment system's management and its governing body (such as a board of directors), its owners, and its other stakeholders. These arrangements provide the structure through which the system's overall objectives are set, how they are attained, and how performance is monitored.

Effective governance provides proper incentives for management to pursue objectives that are in the interests of the system, its participants, and the public more generally. It also ensures that management has the appropriate tools and abilities to achieve the system's objectives. Governance arrangements should provide accountability to owners (for example, to the shareholders of a private sector system) and, because of the system's systemic importance, to the wider financial community, so that those served by the payment system can influence its overall objectives and performance.

An essential aspect of achieving accountability is to ensure that governance arrangements are transparent, so that all affected parties have access to information about decisions affecting the system and how they are taken.<sup>33</sup>

Because systemically important payment systems have the potential to affect the wider financial and economic community, there is a particular need for effective, accountable, and transparent governance, whether the system is owned and operated by the central bank or by the private sector. And good governance provides the foundation for compliance with the Core Principles as a whole.

### **Principles A-D, spelling out the responsibilities of central banks in applying the core principles:**

Different aspects of the safety and efficiency objectives for SIPS may be pursued by a variety of different public sector agencies. Central banks have a leading role, particularly because of their strong

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<sup>32</sup> For banking institutions, *see*, for instance, Basel Committee on Banking Supervision, *Enhancing corporate governance in banking organisations*, BIS, September 1999 ([www.bis.org/publ/bcbs56.htm](http://www.bis.org/publ/bcbs56.htm)).

<sup>33</sup> *See* IMF Code of Good Practices on Transparency in Monetary and Financial Policies, September 26, 1999 ([www.irnf.org/extemallnp/mae/mft/codelindex.htm](http://www.irnf.org/extemallnp/mae/mft/codelindex.htm)).



interest in financial stability, their role in providing settlement accounts for payment system participants, and their concerns with the functioning of money markets for the implementation of monetary policy and with maintaining confidence in the domestic currency both in normal circumstances and in a crisis. The expertise they have developed through carrying out these functions means that central banks have a leading role to play in respect of SIPS. In many cases they have been given explicit responsibilities in this area, e.g., in central bank legislation, or their role is part of an undisputed tradition. Most central banks now recognize the oversight of systemically important payment systems as a core function, contributing to financial stability and complementing the implementation of monetary policy.

The four central bank responsibilities in applying the Core Principles to SIPS<sup>34</sup> stem from this leading role. A distinction is drawn (in Responsibilities B and C) between those systemically important payment systems which are operated by the central bank and those which are not. The central bank has different responsibilities in these two cases but, in both cases the central bank's objectives are safety and efficiency and the obligation to see that the Core Principles are applied.

### **Implementation**

Finally, the question arises how the Core Principles should be implemented, and who will enforce implementation.

As an international standard of best practices, the Core Principles are intended to be applied. They are part of the "Compendium of Standards" compiled by the Financial Stability Forum (FSF).<sup>35</sup>

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<sup>34</sup> See Annex I.

<sup>35</sup> This compendium provides a common reference for the various economic and financial standards that are internationally accepted as relevant to sound, stable, and well-functioning financial systems. As the compendium is posted on the FSF's website (<http://www.fsforum.org>), it serves as a gateway or point of entry for financial authorities and market participants to access the sites where the complete standards, supporting documents, and assessment methodologies referenced in the standards are located. The compendium aims to signal the importance attached by the international community to the implementation of these standards and sound (continued)

However, there is no absolute "recipe" how a country should go forward in applying the principles, nor is there an absolute method how the international community will see to it that the Core Principles are respected.

As any document or recommendation produced under the auspices of the BIS, the Core Principles do not have the power of law; at best they are "soft law."<sup>36</sup> As the BIS and the CPSS have no regulatory powers, any guidance has to be of high quality in order to be relevant. The Core Principles-like other work of the CPSS-have to be relevant and useful in helping designers, operators, and overseers of payment systems decide what to do.

However, other international financial institutions like the IMF and the World Bank can and do encourage, within their mandate, adoption and implementation of such guidance as part of the assistance they provide.

This shows two facets of implementation of the Core Principles: the "pull" and the "push" method. In the first instance, the countries that will apply the principles will want to do so entirely on their own motivation, because they find the principles convincing and because they want to be part of the international consensus that was achieved. In the second instance, implementation may be seen as occurring through "pushing," as the World Bank and the I.M.F will use the principles in financial sector assessments or in technical assistance programs aiding those institutions that wish to bring their systemically important payment systems to the level recommended in

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practices; and facilitate the dissemination of information on them. An FSF document listing ongoing and recent work relevant to sound financial systems is available at <http://www.fsforum.org/Reports/RepORW.html>. At an FSAP follow-up meeting held in spring 2001, the IMF and World Bank also recognize the Core Principles as being one of 11 key standard areas, together with the CPSS/IOSCO recommendations for Securities Settlement Systems (Consultative Report, January 2001, <http://www.bis.org/cpss>).

<sup>36</sup> See Giovanoli, "A new architecture for the global financial market: Legal aspects of international financial standard setting," in: Mario Giovanoli (ed), *International Monetary Law-Issues for the New Millennium*, Oxford, 2000, pp. 3-60.

the Core Principles and call on these institutions for guidance and assistance.

For instance, IMF staff, in conjunction with the relevant authorities of the respective countries, has embarked on a series of experimental "Reports on the Observance of Standards and Codes" (ROSC).<sup>37</sup> These reports summarize the extent to which countries observe certain internationally recognized standards, focusing primarily on the areas of direct operational concern to the IMF.<sup>38</sup>

In practice, the "pull" and "push" approaches will need to be distinguished, even though they will necessarily influence each other. In the context of the international community's desire to strengthen financial stability, the Core Principles are one of many existing standards. Therefore, a prioritization of standards will be necessary, and such prioritization will necessarily vary from economy to economy, taking into consideration their current legal and institutional framework, their status in observance of standards, economic circumstances, financial structures, and policy priorities. As concerns the Core Principles, a balance would also need to be struck between national and domestic considerations, which could be achieved through national authorities working closely with the international financial institutions (such as the BIS, the IMF, or the World Bank) and standard-setting bodies, such as the CPSS.

In the context of a particular country's--or central bank's desire to implement the Core Principles, this can of course be accomplished independently of the other international standards that are not related to payment and settlement systems. Also in such event it should be recalled that the Core Principles do not propagate any particular model. In particular Principle VIII comes into play here as it specifically mentions that a system should be "practical for its users

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<sup>37</sup> At their inaugural meeting in Berlin on December 16, 1999, the Group of Twenty Finance Ministers and Central Bank Governors agreed to undertake the completion of the "Reports on Observance of Standards and Codes" (ROSC) and of the "Financial Sector Assessments" (FASP)-both elaborated jointly by the IMF and the World Bank- within the context of continuing these efforts. Similarly, Western Hemisphere Finance Ministers have encouraged their members to participate in FSAPs and have agreed to participate in ROSCs.

<sup>38</sup> Access to country reports and general information on ROSCs is available at <http://www.imf.org/external/np/rosc/index.htm>.

and efficient for the economy." In some countries this will require thorough analysis of the needs, possibilities, and also limitations of the payment system participants and the economy as a whole, and may also require the building of particular payment system expertise.

In this, cooperation is of essence. Cooperation does not mean copying what the neighbor has done, and it also does not mean following blindly the advice of experts and consultants. In implementing the Core Principles, a multifaceted approach is desirable, lie in any major project.

In some central banks, specialized offices or teams have taken on the task of bringing forward a country's payment system reform project.<sup>39</sup> In others, those responsible for payment system oversight have been grouped into a special division in the central bank, separate from the department that is responsible for the operations, or even, a special authority may be created, with certain own regulatory powers and an own annual report.<sup>40</sup>

Within the institution, or among institutions, it is important that all relevant experts, economic analysts, technicians, and lawyers cooperate from the outset of a project. As experience has often shown, it would be a mistake to bring in lawyers only at the end of a project, shortly before planned implementation of a new system; likewise it would be a mistake if only technicians, accountants, and information technology experts worked together without consulting the economists on issues such as the cost of collateral, expected participation, pricing, etc. This may require that the lawyers gain more knowledge of the concerns of payment system experts. And, as Principle I of the Core Principles shows, the payment systems experts need to be aware of the importance of legal issues and need to be aware of the solutions that the lawyers can find in order to achieve a "well-founded legal basis". On a national level, it will be beneficial that the authorities that are taking the lead in a payment system reform project-most likely the central bank-engage from the outset in a dialogue with the anticipated users of the systems-the banking

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<sup>39</sup> *E.g.*, at the central banks of Peru and Brazil, at the BCEAO in Dakar, or at Bank Indonesia (National Payment System Development Bureau).

<sup>40</sup> *E.g.*, for Australia Payment Systems Board, *Annual Report*, Sydney: Reserve Bank of Australia, 1999.

community. Again, we know from anecdotal evidence that this is not always the case.

### **Conclusion: The Need for Continued Cooperation**

Finally, on an international level, it is important that payment system experts work together. The Core Principles are after all a good example for such cooperation. It is important that payment system experts in the central banks know all the arguments, concerns, and solutions to concerns that the colleagues have found. After all, payment system overseers need to convince: they have hardly any regulatory or executory powers, as opposed to bank supervisors, and any good argument can help in their task. Some central banks that have identified a common goal or where there are common regional interests have created more or less formal groups of experts, like the CPSS, or the Group of Payment System Experts of the EMEAP (Executives' Meeting of East Asia and Pacific Central Banks) countries, or the group of payment system experts from the central banks/monetary authorities of the Gulf Cooperating Council (GCC).<sup>41</sup>

Where no formal arrangement exists, experts may meet in special events, such as workshops or roundtables organized, for instance by the CPSS in cooperation with local or regional institutions, or by the IMF and the World Bank (and the current event is a very good example of an expert meeting-for lawyers--organized by the IMF). Also the contribution of private or commercial initiatives<sup>42</sup> and of more nationally oriented assistance and training programs,<sup>43</sup> to the discussion and dissemination of payment system expertise should not be neglected.

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<sup>41</sup> Similar central bank initiatives are under way for some Eastern European countries that have applied for accession to the European Union, and for countries of the Black Sea Group. In addition, regional political cooperation may include cooperation in the payment systems area, e.g., the PSSC (Payment and Settlement Systems Committee) within the ESCB, between the ECB and the candidates for accession to the EU, among central banks of the South African Development Community (SADC), or among the member countries of the Western African Monetary Union and the BCEAO as their central bank.

<sup>42</sup> *E.g.*, commercial seminars and workshops, S.W.I.F.T.'s annual SIBOS event, etc.

<sup>43</sup> *E.g.*, the U.S. "Financial Services Volunteer Corps," or programs organized by individual central banks.

I personally hope that the good cooperation between CPSS, IMF, and the World Bank, as shown in the elaboration of the CPSS Core Principles, will continue also when the principles are finalized and have become part of a living body of internationally accepted standards.

## **Annex 1: The Core Principles and Central Bank Responsibilities**

### **Public Policy Objectives: Safety and Efficiency in Systemically Important Payment Systems**

#### *Core Principles for systemically important payment systems*

The system should have a well-founded legal basis under all relevant jurisdictions.<sup>44</sup>

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 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.

\*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.

\*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.

Assets used for settlement should preferably be a claim on the central

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<sup>44</sup> Committee on Payment and Settlement Systems, Bank for International Settlements, *Core Principles for Systemically Important Payment Systems*, Report of the Task Force on Payment System Principles and Practices.

bank; where other assets are used, they should carry little or no credit risk.

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

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

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

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

\* Systems should seek to exceed the minima included in these two principles.

### ***Responsibilities of the central bank in applying the Core Principles***

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.

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

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.

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.

## **Annex 2: The "Lamfalussy Standards"**

The Lamfalussy standards relating to netting schemes<sup>45</sup> are:

Netting schemes should have a well-founded legal basis under all relevant jurisdictions.

Netting scheme participants should have a clear understanding of the impact of the particular scheme on each of the financial risks affected by the netting process.

Multilateral netting systems should have clearly defined procedures for the management of credit risks and liquidity risks which specify the respective responsibilities of the netting provider and the participants. These procedures should also ensure that all parties have both the incentives and the capabilities to manage and contain each of the risks they bear and that limits are placed on the maximum level of credit exposure that can be produced by each participant.

Multilateral netting systems 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 net-debit position.

Multilateral netting systems should have objective and publicly disclosed criteria for admission which permit fair and open access.

All netting systems should ensure the operational reliability of technical systems and the availability of backup facilities capable of completing daily processing requirements.

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<sup>45</sup> *Supra* footnote 3.



### **Annex 3: Members of the Task Force on Payment System Principles and Practices**

*Chairman:* John Trundle (Bank of England)

Reserve Bank of Australia

National Bank of Belgium

Banco Central do Brasil

Bank of Canada

European Central Bank

Banque de France

Deutsche Bundesbank

Hong Kong Monetary Authority

National Bank of Hungary

Banca d'Italia

Bank of Japan

Bank Negara Malaysia

Banco de Mexico

Nederlandsche Bank

Central Bank of Russian Federation

Saudi Arabian Monetary Authority

Monetary Authority of Singapore

Federal Reserve Bank of New York

South African Reserve Bank

Sveriges Riksbank

Bank of England

Board of Governors of the Federal Reserve System

Central Bank of West Africa (BCEAO)

International Monetary Fund

World Bank

Bank for International Settlements (Secretariat)

