Redefining the Landscape of Payment Systems

Summary of Proceedings of the World Bank Conference

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1. Introduction and Main Conclusions Gleaned from the Conference Presentations and Discussions

The World Bank conference on *Redefining the Landscape of Payment Systems*, held in Cape Town South Africa from April 7-10 2009, considered the evolution of payment, remittances, clearing and settlement for securities and derivatives systems world-wide. The conference attracted representatives from 60+ countries and 80+ institutions, from all global regions, and featured expert speakers from central banks and international institutions, public sector agencies, and bank and non-bank service providers and system operators from the private sector.

The conference addressed topics on the development of innovative technologies, products and services in rapidly integrating market structures and their implications for the accompanying changes evolving, or needed, in payment and other financial infrastructure arrangements, including legal and regulatory frameworks and oversight regimes. The role of the large-value or wholesale clearing and settlement systems as critical components of the infrastructure for inter-bank credit markets was also addressed in terms of the systems’ responses to the world-wide financial crisis. On each of these topics, the conference agenda provided special focus on the recent and emerging developments in wholesale and retail payment and securities systems in the Africa region.

The active participation of representatives from central banks, other interested public sector agencies and the private sector produced a rich mix of ideas on the drivers and the policy approaches to payment system development that allows some key conclusions for each of these groups to be drawn.

*Lessons for public policy formulation*

i. Recognize the importance of financial infrastructures in achieving national policy goals for economic and financial sector development. Invest time and resources in understanding the full complexity of financial infrastructures and the crucial role of payment, remittances and securities settlement systems and the markets and services they support.

ii. Promote innovation and modernization in payment and other financial systems. In this regard, innovations and new technologies require that oversight and regulation be based on function rather than type of institution, which is especially important as non-financial institutions have come to pay a prominent role as payment service providers. Further, ensure that access to critical infrastructure systems be opened on a fair but at the same time sound basis to all relevant service providers.

iii. Embrace regionalization and globalization as a means to attain more highly developed financial infrastructure by harmonizing, where necessary and to the degree required, national legal and regulatory frameworks and operational methodologies.

*Lessons for central banks*

iv. Lead in the development of financial infrastructures, especially those for payment, remittances and securities settlement. Represent the public interest in the development of critical infrastructures – retail as well as wholesale – by facilitating the development of innovative payment products, services and markets even though statutory mandates and regulatory authority may not always explicitly require the central bank do so.
v. Collaborate and cooperate with all relevant public and private sector stakeholders to help guide the modernization and reform of payments systems. Organize and sponsor collaborative working arrangements to help review, formulate, and promote the acceptance and achievement of payment system policy goals, including those that require change to existing statutes and regulations.

vi. Differentiate clearly between the oversight of systems and the supervision and regulation of system operators. The distinction is crucial since oversight requires a broad system-wide perspective and relies principally on guidance for market participants to balance the system-wide benefits against the systemic risks of innovation and change. On the other hand, supervision on individual institutions is rules-based and institution-oriented, and may often be too limited in scope and flexibility to support the responsive, efficient and stable development of financial infrastructure.

vii. Improve and adapt real time gross settlement (RTGS) services continually as a core function of the central bank because they are critical to the implementation of monetary and financial stability policies. Ensure that intra-day credit facilities are available to all institutions that play a critical role in the settlement of systemically important payment, securities and derivatives transactions.

Lessons for the private sector

viii. Recognize and accept the relevance of oversight and regulation of payment systems, including new schemes involving non-financial institutions, as part of the general business environment.

ix. Cooperate with public sector authorities in the formulation of new policies and regulations to help balance private and public interests while facilitating innovation and modernization of payment products, services and infrastructures.

x. Innovate and develop new products and services that are consistent with public policy objectives for economic and financial sector development, appreciating that innovation often leads regulation. Engage with overseers and regulators pro-actively to provide education about the design and operational aspects of payment innovations.

xi. Market new payment products and services in a socially responsible manner, that is, in a manner that complies with public policies relating to consumer protection and acceptable market conduct.

2. Summary of the Major Themes

2.1. Evolution of Payment Systems
The conference agenda supported a comprehensive and integrated review of developments in both wholesale and retail payment, remittances, and securities clearing and settlement systems. It also provided opportunity for both bank and non-bank payment system operators and service providers to discuss the forces driving change.
Large-value transfer and settlement systems for payments and securities, and clearing and settlement for derivatives, were the focus of the discussions around wholesale systems. These different types of clearing and settlement arrangements were treated in an integrated manner not only across systems, but with regard to the underlying money and inter-bank markets that they support. The recent crisis in the global financial markets served as the backdrop for these discussions and indeed the practical lessons learned from the crisis largely explain the rapid adjustments that are taking place in wholesale systems.

Without exception, the private sector representatives whose companies are innovating in the marketplace indicate that technology is a key force – but as an enabler to change rather that a primary driver. Innovation is in response to the needs of the users of payments and "new" technologies, many of which have first emerged in markets for other information-based services and are now being adapted to the needs of the retail payment marketplace. In short, service providers are "customer focused" and are identifying and investing in new technology where there is opportunity to serve new markets. Two aspects of technology as an enabler to enhanced functionality and efficiency are the rapid rate of change and the specialized expertise that is required to deploy the technology successfully in the retail payment arena.

2.1.1. Evolution in wholesale systems

The evolution of design and operational principles for large-value payment systems encompasses credit and liquidity policies, access to central bank RTGS systems especially to settlement accounts and intra-day liquidity, and pricing of operational services. The discussions revealed a broad consensus that direct access to central bank intra-day credit by the financial institutions responsible for systemically important payment and settlement flows is desirable. Robust risk management practices that protect central banks from the failure of a creditor to repay its intra-day loans are nevertheless prerequisites to adoption of a broad access policy. With regard to liquidity practices, conference presenters and participants appeared to agree that the design of RTGS systems is moving in the direction of so-called hybrid systems, which incorporate liquidity savings mechanisms with the core features of final settlement in central bank money.

Three presentations also described a new RTGS development whereby central banks, in cooperation with their national payments system councils, are adapting their systems to settle small value payments, including retail payment credit transfers. For example, the RTGS systems in Mexico, South Africa and Switzerland all extend settlement finality in central bank money to individual small-value payments initiated by both consumers and businesses. The "consumer interface" enabling real-time settlement finality for these types of retail payments is being contributed by private sector services providers and features new or adapted payment services. Extending RTGS services to a broader range of payments can generate scale and scope economies operationally, consolidate duplicative infrastructures and expand the benefits of real-time, final payment settlement to all users. The presentation of the future of RTGS indicated that, according to the World Bank’s 2008 global survey of payment systems1, at least seven central banks have extended their RTGS service to small-value, retail payment credit transfers, resulting in substantial increases in their transaction volumes.

Developments in securities settlement systems were addressed primarily in the context of the evolutionary development of financial markets in Africa. In general, these systems are advancing in their design and

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operation according to accepted international principles and guidelines. The establishment of central securities depositories to consolidate custody of securities, and reliance on central bank facilities for settlement of the cash leg of securities transactions, is becoming the norm. Regional consortia of financial institutions located in near-by countries are leading the continuing improvement in securities clearing and settlement.

The conference addressed the role of the central counterparty (CCP) model as a component of the risk management infrastructure for the financial markets. The presentations and discussions generally underscored the contributions that well-designed CCPs can make to settlement transparency, standardization in risk management, and extending the advantages of multilateral netting. The discussions reflected broad consensus for treating CCPs as part of the core infrastructure of the financial markets and for providing CCPs direct access to central bank settlement account and payment services, including intra-day credit. A cautionary note was sounded concerning the cost that CCPs can add to the clearing and settlement process in a developing financial market, and the need to achieve the desirable risk mitigation benefits that CCPs provide in the most efficient manner possible.

Finally, the presentations highlighted the key operational role played by the payment and settlement infrastructure in the inter-bank markets and in the implementation of monetary policy. Operationally speaking, reserve balances link the payment system, inter-bank markets, and monetary policy implementation. Accordingly, reserve management policies must be designed to meet central bank objectives across all of these areas. The recent financial crisis has underscored the importance of market arrangements and infrastructures that permit the efficient distribution of liquidity, including and especially central bank liquidity, to all money market and payment system participants. This can be achieved by: i) providing broad access to central bank payment services in a sound framework of credit risk management, and permanently broadening central bank collateral policy in a post-crisis environment; ii) building the necessary infrastructure for market and payment system participants to exchange liquidity amongst themselves safely and efficiently regardless of market conditions, which may include the development of collateralized money markets as well as a better organized marketplace (i.e. need to bring OTC money markets more in line with the best practices in organized markets).

2.1.2. Evolution in retail payment systems
Telecommunications, software, and security are the three applied technologies that are enabling major change in retail payment services. It was clear from the conference discussions that banks are experienced and comfortable in combining and working with these technologies to enhance the retail payment services they offer. At the same time, however, the rapid pace of technological change, and the advance deployment of technologies in other markets, telecommunications technologies in particular, has led to a newly prominent role for non-bank, non-financial institutions. As a result, there is a strong incentive for bank and non-bank service providers to partner in offering new services. Further, in some cases the lead role in enabling changes rests with the technology companies; as noted below, the newly prominent role for technology companies as payment service providers poses new challenges for how oversight is carried out.

One important area of retail payment system innovation that these technologies are enabling is the mobile channel, which appears to be a rapidly developing channel for making and receiving payments. Mobile is approached as an addition to the portfolio of payment services offered, alongside prepaid cards, credit and debit cards, money transfers, and the like. In theory, mobile payments could be revolutionary because they
may facilitate conquering the "last mile" problem that has long prevented the extension of more efficient and responsive services to the large under-served sector of the population in developing nations (not to mention that they can also add convenience value to users in developed economies). It was said that mobile can reduce the cost of non-cash payments by half. Market penetration for mobile payments is growing at double digit rates, taking full advantage of the scale and scope economies inherent in the use of pre-existing telecommunications platforms. Conference presentations brought out that the next breakthrough in mobile payments is enabling payment transactions to cross networks, a technological development that will be facilitated by banks taking on the role of aggregators and consolidators.

The conference also provided an opportunity to review the recent progress that has been made with regard to remittances. Data show that prices faced by end users have declined substantially across most channels, in no small part due to the transparency that has been enabled in the market by initiatives like the World Bank's remittance price database. Public exposure ("name and shame") and peer pressure have combined to make remittance service providers more efficient. Moreover, the applied technologies that are redefining the service level norm in retail payment markets generally are also being extended to remittances. However, it was mentioned that remittance prices do not generally reflect other costs that beneficiaries incur in order to collect their money, especially in rural areas. In this regard, a presenter estimated that 40-70 percent of remittances, depending on the country, are destined for people living in rural areas.

Traditional banking channels for cross-border retail payments have been slow and expensive, especially for remittance payments that have relatively low share of overall retail payment volume and an average value globally of only $200 (U.S.). In many countries, formal and informal non-bank money transfer organizations dominate banks in terms of market share and service cost, convenience and value-added services related to remittance payments.

International cooperation at the official level, and among varying types of financial institutions and business partners, is also contributing in improving the services delivered in the remittances marketplace. In particular, there is an emphasis on financial messaging standards specifically designed to support remittances that promises to enable future efficiencies in this market.

2.2. Regional Integration of Payment Systems

Cross-border and cross-currency commercial and financial payments have traditionally been made through regional and global correspondent banking networks. Correspondent banking networks typically involve multiple levels of intermediation to link national payment systems. Similar arrangements exist for cross-border securities and other market-based transactions. Such decentralized, highly-tiered cross-border arrangements for payment and securities transfer, clearing and settlement involve substantial liquidity, operating and user costs. Moreover, the services provided are often too slow and unreliable for the rising volume of payments associated with closer regional commercial and financial ties. Consequently, more tightly organized and integrated regional and even inter-regional payment and securities infrastructures are developing as a result of integration initiatives in the African, Asian and Latin American regions, among others. The discussions around the theme of regional integration of systems extended even further to the need for harmonized development of central bank payment system and monetary policies.
2.2.1. Integration in wholesale systems

The regional integration of national payment systems directly links the large-value payment systems of the participating countries. The link-up is through a distributed payment communications network involving either bilateral connectivity and system-to-system intra-regional payment settlement or connectivity to a central hub operating an intra-regional clearing and settlement facility. With large-value payment systems typically operated by national central banks, the distributed connectivity model of a regional payment system can substitute for the private correspondent banking network. The correspondent central banking arrangement concentrates intra-regional payments into a single central bank correspondent that participates in a network having more standardized service levels and agreements than the private system (i.e. correspondent banking). Over the medium-term, relative liquidity, operating and user costs should generally be lower and intra-regional payment settlement faster and more predictable than in the private system. A centralized model with a regional settlement bank can facilitate even greater standardization and more effective settlement risk control and, given a common settlement currency, permits multilateral netting that can lower liquidity costs even more as payment values and volumes rise.

Presentations on this topic focused on initiatives in Africa, the Middle East and Europe. All of the presenters noted that a regional payment system can also support on-going regional economic and financial integration and development. Ultimately, this translates into a higher volume and value of intra-regional payment transactions and demands for wider network expansion. The successful regional integration of national large-value payment systems does, however, require several pre-conditions. In addition to the obvious business case, the most critical pre-conditions are the harmonization of key institutional and structural elements in the national systems of the member countries and a sustainable commitment to the regional payment system, and the regional commercial and financial initiatives that underpin it. Experiences cited in a number of regional payment system initiatives indicate that unreasonable expectations of immediate pay-offs from integration and inadequate harmonization of key institutional elements during network expansion, such as those involving sound legal and oversight requirements, cause commitment to the project to waver and can sometimes cause the initiative to collapse. Organized and focused collaboration among all the key stakeholders and cooperation among the overseers of the national payment systems of the member countries is considered critical to sustaining commitment to the regional integration program.

Although several national securities depositories and securities settlement systems have developed bilateral system-to-system links in recent years, only a few have begun to integrate regionally or inter-regionally into an organized multilateral system. While the most developed cross-border systems are within the Eurozone, others have begun to develop elsewhere, as in the South African Development Community. The discussion concerning the role of CCPs in securities and derivatives settlement extended to consideration of regional, and even global, developments.

Schemes such as those proposed by Strate Ltd and ICAP for securities and OTC derivatives settlement are private sector initiatives that involve close collaboration with national and regional central banks. In a few cases, notably in the Eurozone, central banks are becoming directly involved in the settlement of regional, and even national, securities transactions. In anticipation of further development of regional systems for the clearing and settlement of payment and other financial system transactions, a number of global providers of ancillary services – specialized messaging and software applications, for example – have been developing standards and solutions for secure network communications and processing that can better facilitate straight-
through processing. Other service providers, such as CLS Bank which operates the largest global payment-versus-payment foreign exchange settlement systems, are developing other settlement service applications that can support settlement of inter-regional large value payments in a single or multiple currencies.

### 2.2.2. Integration of retail payment systems

Aside from the major global card payment systems, which are expanding their products and services into new payment applications for cross-border retail payments, there are only a few bilateral and multilateral system-to-system links that facilitate the clearing and settling of cross-border payments. Correspondent banking arrangements, even for the ultimate settlement of cross-border card payments, are still the primary network arrangements for the ultimate settlement of cross-border retail payments. The regional integration of large-value payment systems, in conjunction with the integration of retail and large-value payment systems at the national level, has spawned some initiatives for the regional integration of national retail payment systems.

The SEPA (Single European Payment Area) initiative is perhaps the most ambitious of these integration initiatives. Triggered by policy action and driven by industry initiatives, SEPA is aimed at creating a single integrated market for retail payment instruments and services throughout the Eurozone. The most critical challenges faced by the SEPA initiative have been the set-up of public and private sector collaboration mechanisms for decision-making, user support from public sector administrations, and the harmonization of national legal barriers. SEPA-compliant credit and debit transfers are now in place and work is proceeding on the introduction of SEPA-compliant card payments and on the development of SEPA-based online and mobile payment channels.

### 2.3. Strategic Reform in Payment Systems

The conference participants outlined three general challenges to the successful development of financial infrastructures. The first, and most fundamental, problem is an inadequate knowledge and vision among most stakeholders regarding the importance, breadth and interdependency among the various institutional, organizational and technical aspects of infrastructure arrangements and services. The second challenge is the absence of effective cooperation and collaboration among all the relevant stakeholders in new initiatives. The third is a misconception that even competitive markets for payment and securities services can develop and be sustained without some degree of cooperation and collaboration among public and private sector stakeholders. Too often, the combination of these problems is found to create an insupportable number of initiatives, too narrowly focused just on technology-driven projects, and too few with effective coordination of effort.

A consensus emerged that these development risks can be strategically managed. Guidelines developed by the Bank for International Settlements Committee on Payment and Settlement Systems (CPSS) for the development of national payment systems were cited as useful tools for managing these development risks. As market conditions change and as a new consensus is achieved on the CPSS, these guidelines as well as other relevant standards are reviewed and updated to maintain their relevance.

### 2.3.1. Strategic reform in wholesale systems

The discussions on strategic reform in wholesale systems focused to a large degree on central bank credit policy, pricing schemes for central bank payment services, and the usefulness of CPSS standards as a self-assessment tool. All involved some degree of proposed or recently enacted reforms in the existing operational and oversight policies of many central banks, particularly those in emerging market economies.
Participants discussed the importance of rationalizing central bank intra-day and overnight credit policy. A chief practical issue concerns the rationalization of how these two forms of credit are priced, in the event that an intra-day loan is converted to an overnight loan on the books of the central bank.

With regard to pricing of RTGS operational services, the discussions again revealed a broad consensus that explicit pricing is desirable to provide economically efficient incentives to users of services. In the end, however, participants agreed that RTGS is a core central bank service and that pricing to recover costs is subordinate to achieving central bank policy objectives. Key presentations also highlighted opportunities to adapt and strengthen the CPSS core principles governing systemically important payment systems, and illustrated how individual central banks measure and evaluate their own standing with regard to liquidity and credit management, access, and costing and pricing.

2.3.2. Strategic reform in retail payment systems

Many of the presentations on strategic reforms related to retail payment systems. This reflected the fact that the strategic reform of retail payment systems is an especially difficult task in financial sector development. World Bank studies indicate a strong correlation between a country’s overall level of economic development and its level of development in the area of retail payment systems. This is not necessarily the case for other areas of the national payments system (i.e. large-value systems, legal and regulatory framework), where several countries have been able to achieve a high level of development despite their overall status as medium or even low-income economies. A possible explanation is that retail payments systems typically entail a more complex array of payment instruments, services, service providers and end-users than do large-value payments. In addition, infrastructure needs and arrangements are more diverse and the broad acceptance of innovative products and technologies more difficult to achieve than in wholesale payment service systems. Leadership in the strategic development of retail systems can be more diffuse than for large-value systems with market incentives as the principal guidance for change. Experience indicates that the development of retail payment systems accelerates when central banks take a leadership role and when government agencies with high retail payment volumes embrace innovative payment applications. In addition to leading collaborative efforts among public and private stakeholders, central banks are increasingly reliant on focused oversight programs for retail payment systems. These oversight programs have proven effective without heavy-handed regulatory intervention when they rely on collaboration and cooperation with private sector service providers and other relevant public sector agencies. The cooperative arrangements are usually institutionalized through the establishment of formal advisory and consultative councils that facilitate strategic development.

In many emerging economies, the development and oversight of retail payment systems has been stimulated by increased remittance payments. In parallel, in 2007, the World Bank and the CPSS established internationally accepted guidelines for the development of efficient and secure remittance payment services which, although designed for remittance payments, are equally relevant to retail payment services in general.²

Some banks are now beginning to respond to the remittance and other retail payment service demands of their customers through collaborative arrangements with global card payment and mobile payment

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operators, and payment messaging organizations, to deploy new cost-effective remittance instruments and payment transfer services directly or through non-bank operators.

2.4. Evolution of Legal, Regulatory and Oversight Regimes

Innovative payment products and service schemes, new types of payment service providers, and cross-border integration in retail and wholesale payment, clearing and settlement systems are presenting a host of new challenges to the current legal, regulatory and oversight frameworks. For instance, many new payment schemes unbundle money storage, payment transfer, payment clearing and payment settlement services thereby allowing at least some of these functions to be sourced from non-traditional service providers.

2.4.1. Challenges to the legal and regulatory framework

Payment service providers and system operators participating in the conference accept oversight and regulation as part of their business environment. As long as it is the "right" regulation, regulation can have a positive business impact through "certification" effects that increase consumer acceptance and standardization of market rules and procedures. From a payment service provider’s perspective, the right regulation will: (i) provide an enabling environment for innovation and market development; (ii) balance regulatory concerns about risk and competitiveness against the transformational potential of new products; and (iii) develop regulations based on evidence and a clear understanding of the overall policy objectives and risks. All the private sector participants agreed that on-going communication with regulators and legislators provides a two-way learning opportunity that can help produce the right regulation. The EU Payment System Directive (2007), for example, was motivated by the on-going dialogue at the regional level between the private and public sector and designed to overcome the inertia for innovative change and harmonization of institutional arrangements by both industry and national authorities.

Some conference participants noted that existing regulations are often problematic for the development of new payment products and services and modern payment infrastructures. Regulation of innovative payment products and services may be based on perception rather than fact and justified through inadequate partial and narrowly-focused analysis. As a result, new regulations may disproportionate to the risks they are meant to manage. Also, existing regulations can begin to conflict with policy objectives that support innovation and change without periodic fact-based reviews of the emerging financial system and payment system landscape.

To illustrate these propositions, presenters considered two specific payment system developments that are presently challenge, and may be hindered by, current legal and regulatory frameworks. Anti-terrorist financing laws and regulations, many of which have a common basis in the recommendations of the multilateral Financial Action Task Force (FATF), are so broadly defined and applied that they can hinder the development and efficient delivery of remittance payments to countries which rely on such payments as a major source of national income. In a different context, the variety of different mobile payment schemes, many of which can contribute to the achievement of public policy objectives regarding economic and financial sector development both challenge the existing legal basis for payment systems and are hampered by regulations on payment services and service providers that are institutionally based around banking organizations rather than based on the business function.

2.4.2. Challenges in oversight

The conference provided opportunity for consideration and a rich discussion of oversight challenges from the perspectives of both the public and private sectors. The differences in perspective notwithstanding,
interactions at the conference reflected a broad consensus surrounding the importance of appropriately applied oversight, especially during a time of rapid innovation in payment systems.

The challenges faced by payment system overseers differ somewhat between wholesale and retail. Oversight of wholesale systems is motivated primarily by systemic risk concerns, and the internationally inter-linked nature of systemically important payment systems is calling for more harmonization of central bank practices across countries. At the operational level, the chief need is to harmonize collateral policies and to facilitate consolidated liquidity and risk management by internationally active financial institutions so that they are well positioned to achieve settlement in all of the systemically important national payment and settlement systems in which they participate. The international linkages among systemically important systems, which span both geography and markets such as securities and derivatives, call for an extraordinary degree of cooperation among the national oversight authorities.

Oversight of retail payment systems, as noted, was addressed from both the public and private sector perspectives. Private sector providers of retail payment services shared their view that the rapid pace of innovation necessarily defines oversight as a learning process in which the authorities must engage actively. In this connection, the risks associated with newly emerging payments may at times be more perceived than real for the party that is not "hands-on" familiar with the underlying technologies. Accordingly, retail payment system overseers should be careful to balance their desire for an acceptable amount of manageable risk with the benefits of state-of-the art technologies and methods applied to payments. Both the public and private sector participants recognized the need for appropriate official oversight of all major payment system providers, regardless of institutional type. They also agreed that oversight should center on the payment system functions that are performed, not on the type of institution providing that functionality. An objective of oversight should be to permit healthy competition, resulting in continuous innovation and improved payment services.

Finally, the World Bank staff reiterated that the central bank is the natural overseer of payment systems. Central banks should be enabled in their oversight by an explicit legal mandate covering both wholesale and retail payment systems. The exercise of payment system oversight, however, should not be held up by the lack of robust legislation. There are "light" approaches to oversight that the central bank can take without an explicit legislative mandate, which include monitoring of payment systems, collection of statistics on payment system operations and development, and facilitation of dialogue among key participants. Regardless of the conditions under which the central bank pursues its oversight responsibilities, it should ensure that it devotes sufficient resources to this function, independent of any supervisory responsibilities that the central bank may have.