

**Mexico: Financial Sector Assessment Program Update—  
Technical Note—Observance of the Core Principles for Systemically Important  
Payment Systems—An Update**

This Technical Note on Observance of the Core Principles for Systemically Important Payment Systems—An Update for Mexico was prepared by a staff team of the International Monetary Fund and the World Bank as background documentation to the Financial Sector Assessment Program Update with the member country. It is based on the information available at the time it was completed in November 2006. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Mexico or the Executive Board of the IMF.

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FINANCIAL SECTOR ASSESSMENT PROGRAM UPDATE  
**MEXICO**

**TECHNICAL NOTE ON OBSERVANCE OF  
THE CORE PRINCIPLES FOR  
SYSTEMICALLY IMPORTANT PAYMENT  
SYSTEMS: AN UPDATE**

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THE WORLD BANK  
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DEPARTMENT

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## GLOSSARY

ACH	Automatic Clearing House
ATM	Automated teller machine
ASIGNA	Central Counterparty for the clearing of derivatives
BOM	Bank of Mexico
CCP	Central Counter Party
CECOBAN	ACH for the clearing of cheques, credit transfers, and direct debits
CNBV	National Banking and Securities Commission
CPSS	Committee on Payment and Settlement Systems
CPSIPS	Core Principles for Systemically Important Payment Systems
CSD	Central Securities Depository
DRM	<i>Depósitos de Regulación Monetaria</i> , deposits with the BOM, used to mop up liquidity and to tighten the money market
EFT	Electronic Funds Transfer
e-Global	Switch for card and ATM transactions owned by banks that are active in the card business except the two largest banks
FSAP	Financial System Assessment Program
INDEVAL	Central Security Depository of Mexico
IOSCO	International Organization of Securities Commissions
IPAB	Institute for the Protection of Banking Savings
Prosa	<i>Promoción y Operación S.A. de C.V.</i> , switch for card and ATM transactions owned by the two largest banks
RTGS	Real-Time Gross-Settlement System
SIAC	<i>Sistema de Atención a Cuentahabientes</i> , Account holders Service System, an RTGS system operated by the BOM
SIDV	<i>Sistema Interactivo para el Depósito de Valores</i> , <i>Interac</i> , Interactive System for Securities Deposits and the settlement of securities transactions, operated by INDEVAL
SIPS	Systemically Important Payment Systems
SPEI	<i>Sistema de Pagos Electrónicos Interbancarios</i> , modern hybrid system operated by BOM
TIE	<i>Tasa de Interés Interbancaria de Equilibrio</i> , Interbank reference rate

## I. GENERAL

1. As part of an FSAP Update mission to Mexico from February 22 to March 8, 2006, an update of progress in meeting the standards of the CPSS Core Principles for Systemically Important Payment Systems (CPSIPS) was conducted.<sup>1</sup>
2. Under the Payment System Law of 2002, the Bank of Mexico (BOM) is granted power to supervise and regulate Systemically Important Payment Systems (SIPS). The BOM designates at the beginning of each year which payment systems are fulfilling this criteria. At the moment, two payment systems are designated, namely: (1) SIAC (*Sistema de Atención a Cuentahabientes*), and (2) SPEI (*Sistema de Pagos Electrónicos Interbancarios*). Further on, the securities settlement system SIDV (*Sistema Interactivo para el Depósito de Valores*) has a payment function that is deemed systemically important by the BOM.
3. In the FSAP mission of 2001 the observance of the CPSS Core Principles by SIAC and SIDV was assessed, as well as the observance of these standards by SPEUA (*Sistema de Pagos Electrónicos de Uso Ampliado*), a payment system that was replaced in 2005 by SPEI. An assessment of SIDV observance of the CPSS/IOSCO Recommendations for Securities Settlement Systems (SSS) could not be carried out in March 2001 since these standards were not yet finalized.
4. The Mexican authorities provided the FSAP team with a note in which they explained how they have followed up on the recommendations of the 2001 FSAP and the way the risks in the payment infrastructure, as indicated by the FSAP team, were addressed. The update of 2006 focused on the assessment of the measures taken and no new assessments were carried out. The International Monetary Fund and the World Bank will be available to carry out full reassessments once self-assessments for the new payment system SPEI and self-assessments of observance of the standards set by the CPSS/IOSCO for Securities Settlement Systems and for Central Counter Parties are prepared by the authorities

## II. INSTITUTIONAL AND MARKET STRUCTURE: THE REFORM OF THE PAYMENT SYSTEM SINCE 2001

5. Since 2001 the Mexican infrastructure for large value payment and securities settlement has been modernized and its safety and soundness improved substantially.
6. The implementation of the Payment System Law in December 2002 was an important milestone for upgrading the legal basis for payment and settlement systems. This law regulates: (a) the finality of payments in systemically important payment and settlement systems; (b) the protection of netting schemes and the collateral arrangements to ensure timely settlement and to facilitate liquidity management in payment and settlement systems;

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<sup>1</sup> The update was carried out by Jan Woltjer, Monetary and Capital Markets Department, IMF.

and (c) the oversight power of the BOM. In addition, the BOM has issued regulation to support check truncation, the use of electronic signatures, and regulation that endorse the development and implementation of new payment instruments.

7. In the area of retail payments, progress was made to improve the fragmented infrastructure and enlarge the connectivity and interoperability of the different networks of commercial banks. The clearing and settlement of checks and electronic fund transfers with deferred value date (EFTs), is now concentrated in CECOBAN, an automatic clearing house (ACH) owned by the banking sector. The centralization of the clearing of checks, made possible by imaging and check truncation, is completed and CECOBAN is now expanding its activities in the EFT market, especially credit transfers. However, with a market share of 50 percent, checks are still the most used noncash payment instrument. Debit and credit card transactions are growing rapidly, although from a relatively low level. Most of the debit cards are only used to withdraw cash from ATMs. Card payments and withdrawal of cash from ATMs by clients of other banks are cleared and settled via two switches, e-GLOBAL, owned by the two largest banks, and PROSA (*Promoción y Operación S.A. de C.V.*) which is owned by most of the other banks with a sizeable participation in the card business.

8. Notwithstanding these improvements, the banking sector still reaches only a relatively small part of the household sector and the infrastructure for retail payments is still underdeveloped compared to countries in the region or in the same phase of development. For instance in 2004, in Mexico there were 19 ATM's per 100,000 inhabitants, compared to 77 in Brazil, 25 in Chile, and 132 in Korea.<sup>2</sup> A relatively large part of the population, especially in the informal sector, has no bank account and in some rural parts of the country no banking infrastructure exists at all. Credit cardholders are found predominantly in the affluent classes of the formal economy. Due to the concentration in the banking sector, the supply of payment services is dominated by the four largest banks and competition is not optimal, resulting in relatively high costs for clients and low service levels. There is still a tendency to compete on access to the infrastructure instead of competing on fees and services. The largest banks are still inclined to force customers to join their network and not those of other banks by making, among other things, interbank transfers costly and cumbersome. Under existing payroll schemes, employees are not free to choose the bank where they want to receive their salary and have limited possibilities to change banks if they find the services and fees elsewhere more attractive. Employers normally limit the choice to one or two banks, since they have to open accounts with each of the banks involved in the payroll scheme to execute the payments on an intrabank basis. Payroll schemes with distributions of the salaries on an interbank basis via CECOBAN are scarce. Also direct debits are still executed on an intrabank basis forcing collecting enterprises or government

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<sup>2</sup> Sources: BOM, Central Bank of Brazil, *Superintendencia de Bancos e Infraestructuras Financieras* de Chile and Korea Financial Telecommunications & Clearings Institute (data of 2002). (The document "*Reaching out: Access to and use of banking services across countries*," World Bank, 2005, used in the description presented data of 2003 or before.)

institutions to open accounts with many banks to enlarge the scope. In 2004, under the Transparency Law, the BOM has been charged to enlarge transparency and competition and to regulate commissions and interchange fees charged by financial institutions. A broad package of measures was taken by the BOM to remove barriers for interbank transactions, enlarge the transparency of fee and commissions charged, and promote competition.

9. In the area of large value payments SPEI, a modern hybrid system, replaced in 2005 the SPEUA, which was a system that used mutual credit lines between each of the participants (the sum of the credit lines granted to a participant formed the debit cap or the amount of overdraft allowed in his account) and with an explicit guarantee of the BOM to settle the clearing results at the end of the day in SIAC, even if this would result in uncollateralized overdrafts in the latter system.<sup>3</sup> In the new system SPEI, neither the other participants, nor the BOM, grant any credit lines. No overdraft is allowed in the system and the participant himself has to manage the liquidity in his account by transferring sufficient liquidity at the opening of the system or during the day, if additional liquidity is needed, via an efficient liquidity bridge between SIAC and SPEI. Interbank large value transfers and urgent client-to-client orders sent in to SPEI will be placed temporarily in a queue and settled on a multilateral basis every 20 seconds, or as soon as more than 300 new payments are sent in by all participants together, using an algorithm that tries to settle payments in the queues with a total amount as large as possible, taking into account the liquidity in the balances of the different participants. Transfers in SPEUA had a minimum amount (500 thousand pesos at the beginning and it was reduced gradually to 50 thousand pesos). SPEI does not have a minimum amount.

10. Since SPEI is designated by the BOM as a Systemically Important Payment System, according to Chapter II of the new Payment System Law, all payments settled are final and irrevocable, and the received amounts can be used immediately in the following cycles or retransferred to the account of the participant in SIAC. Payments that cannot be settled during one of the many cycles during the day, and are still in the queue at the end of the day, are canceled. All remaining liquidity is transferred back to the accounts of participants in SIAC at the closing of the system.

11. SPEI, a system that effectively combined the characteristics of a real time gross settlement system with the liquidity savings of a multilateral netting system, is the central system for the settlement of large value payments and urgent client-to-client payments in Mexico. SIAC is mostly used for monetary policy transactions, the execution of intraday repos for liquidity management in the payment and securities infrastructure, the withdrawal of banknotes, and government payments.

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<sup>3</sup> In case the participant was not able to redeem the uncollateralized overdraft three days in a row, the BOM could reclaim some of the losses from the surviving participants in proportion to the bilateral credit lines granted to the defaulted participant. However, the loss sharing in SPEUA did not foresee multiple defaults. In that case the risk had to be borne solely by the BOM.

12. In 2004, the BOM improved its collateral arrangements drastically. An intraday repo facility was implemented and now it forms the heart of the liquidity management for participants in all payments and Securities Settlement Systems in Mexico. This repo facility replaces the former system of pledging of securities via the so-called *caución bursátil*. Under the latter arrangement it was difficult and time-consuming to realize the collateral in case of a default. The repo facility enables participants to obtain intraday liquidity from the BOM against eligible collateral. Orders can be sent online in real time and are executed immediately. For these repo operations, banks can use their portfolio of government bonds, central bank paper, and bonds issues by IPAB. Also, DRM (*Depósitos de Regulación Monetaria*) they have posted with the BOM within the framework of the execution of monetary policy can be used by banks as collateral for overdrafts in their SIAC accounts. Liquidity obtained can be transferred to the system where it is most needed via liquidity bridges that connect SIAC, SPEI and SIDV.

13. Moreover, the possibilities to obtain uncollateralized credit from the BOM have been reduced. Uncollateralized overdrafts are no longer allowed in credit auctions or for the buying of government securities in the primary market.

14. While in 2001 the BOM granted credit lines in the SIDV with collateral that included securities that had no secondary market, this possibility has been eliminated in the past years. No overdrafts are allowed any longer in the SIDV and the settlement in this system is no longer, implicitly or explicitly, guaranteed by the BOM. To reduce the risks, the system settles every 15 minutes, thus reducing the amounts to be settled and, as a designated system under the Payment System Law, achieving intraday finality. Banks and securities firms (*Casas de Bolsa*) that lack funds have the possibility to borrow them from the BOM through intraday repos, or they can obtain liquidity via the liquidity bridges. Other participants do not have access to the BOM liquidity arrangements. On the securities side, market makers can borrow government securities from the Mexican Treasury through a BOM window.

15. For equity transactions conducted on the Stock Exchange a Central Counterparty (CCP) was established to contain the risks in this type of securities transactions. The CCP settles in SIDV. For transactions conducted on MexDer, the derivatives exchanges are cleared and settled via ASIGNA (*Asigna Compensación y liquidación*), which also acts as a central counterparty.

16. A redesign of the SIDV is envisaged in the near future. One of the objectives of the restructuring is to enlarge the operational reliability of the system.

### III. PROGRESS IN MEETING THE CPSIPS

17. The main deficiencies observed in the FSAP of 2001 were related to the legal basis and the management of credit and liquidity risks.

## A. Legal Basis

18. With respect to the legal basis the mission recommended in 2001 to improve: (a) the finality of payments; (b) the legal basis for collateral arrangements and the possibilities to realize the collateral immediately in case of a default; (c) the recognition of electronic payments and the use of electronic signature; (d) the legal basis for check truncation and new payment instruments; and (e) the oversight powers of the BOM.

19. Finality of payments. Since December 2002, finality of payments in a systemically important payment system (SIPS) is regulated in chapter II of the Payment System Law. All payments in SIPS are final and payment orders accepted by the systems are irreversible. Resolutions from judicial or administrative authorities (including those derived from the application of the Bankruptcy Law) to prohibit, suspend, or limit payments through a SIPS will only become effective one day after the SIPS administrator has been notified. Payment orders sent in on the day the notification is received will be executed normally as long as there is sufficient liquidity in the account of the involved participant. In case of fraud or unfair preferential treatment of certain creditors, payments during the suspect period can be claimed back, but only outside the system. Within this context the judicial authorities cannot unwind payments settled in a SIPS. Moreover, bank accounts at the BOM cannot be seized by judicial or administrative authorities.

20. A sound legal basis for collateral arrangements. The BOM has improved its collateral arrangements substantially. Nowadays, the BOM uses two instruments to grant overnight or intraday liquidity, namely, pledge of DRMs and repos. The BOM only allows overdrafts in the current accounts or grants overnight credit to banks that have pledged enough DRMs to cover both the principal amount and interest on the credit. The pledge of both DRMs and repos to collateralize loans is fully recognized under Mexican laws. In case of a default the BOM is allowed to compensate immediately its claim with the DRM obligation that has been pledged to secure the loan. In repos, BOM is allowed to sell the underlying securities that have not been redeemed timely or not been rolled-over in a new repo operation.

21. Legal basis for electronic signature and new payment instruments. Electronic transfers and the use of electronic signature are fully recognized and check truncation and new payment instruments as direct debits are fully endorsed under Mexican laws.

22. Oversight responsibilities of the BOM. The Payment System Law of 2002 grants the BOM the power to oversee all systemically important payment and securities settlement systems. The BOM designates each year which systems are systemically important. At present the systems operated by the BOM itself (SIAC and SPEI) and SIDV, the system owned and operated by INDEVAL, are designated and fall within the scope of the oversight policy of the BOM. The Payment Law grants the BOM effective instruments to carry out the oversight task, such as the power to approve the internal rules of the designated systems, request information, and impose adjustment programs or sanction the system provider.

23. As a result of these changes, all the previously observed deficiencies in the legal basis have now been eliminated. Finality, protection of collateral arrangement used by the BOM to secure credit granted in the context of its payment policy, the use of electronic transfers and

electronic signature, and the oversight powers of the BOM are now well regulated. Further improvement will be brought forward when the recently approved Law on Banking Insolvency, in which clear rules for closing insolvent banks will be given, is implemented.

## **B. Management of Credit and Liquidity Risks**

24. With respect to risk management, the 2001 FSAP noted that the BOM was exposed to credit risks. The exposure was the result of the explicit settlement guarantee in SPEUA and the policy to allow uncollateralized overdrafts in the framework of credit auctions, the buying of government securities in the primary market, the withdrawal of banknotes and the payment of fees and commissions to the BOM. In addition, the improvement of the risk management of collateral was recommended.

- Settlement guarantees and uncollateralized credit lines. The explicit settlement guarantee was eliminated with the replacement of SPEUA by SPEI. No overdrafts are allowed in SPEI and if participants need liquidity to settle their payment obligation in this system, they have to conduct an intraday repo with the BOM and transfer the obtained funds via the existing liquidity bridges to their accounts in SPEI. Also the credit lines in SIDV were eliminated and overdrafts are no longer allowed in the context of credit auctions and the issuing of government bonds.
- Improvement of collateral risk management. The collateral arrangements of the BOM in the framework of intraday and overnight credit facilities are improved by: (a) using the repos as the main instrument to collateralize the credit granted; (b) renewing the list of eligible assets that could be used as collateral; and (c) setting adequate margins. The use of repos has eliminated the problem that liquidation of collateral could be cumbersome and time consuming. The new list of eligible collateral for repos contains only liquid paper while, in the past, explicitly nonmarketable and illiquid paper was used by banks. Only DRMs can be used as collateral on BOM's credit lines.

25. As a result of these changes, most of the risk exposures of the BOM from explicit and implicit guarantees and inadequately collateralized credit lines have now been eliminated. Some less significant credit exposure still exists in the schemes for determining the interbank reference rates (TIIE, *Tasa de Interés Interbancaria de Equilibrio*) and the cash withdrawal process, due to the fact that not all uncollateralized overdrafts are eliminated. However, modifications to have full collateralization in these schemes will come into effect by mid-2006. The requirement of posting collateral for intraday and overnight credit and the strengthening of the collateral arrangements has significantly reduced the possibilities for a bank with financial problems that has no adequate collateral available to have access to the BOM liquidity arrangements. In the past such an institution could try to obtain funds to remain active in the payment systems by drawing heavily on the overnight credit facility by bidding high prices in the credit auctions without having to post collateral in advance. Not only the risk exposure of the BOM has been reduced, but also the risks in the infrastructure are now more transparent for participants due to the fact that there no longer exists a loss sharing arrangement, as was the case in SPEUA.

#### **IV. RECOMMENDATION FOR FURTHER IMPROVEMENTS**

26. Although, the mission was impressed by all the work done and the far reaching payment reform which has gradually removed all the risks out of the system and modernized the infrastructure in the past years, the time might now have come to concentrate primarily on developmental issues and to allocate resources to build out the oversight function. Against this background:

- To broaden the scope of the oversight to oversee also retail payment systems and CCPs. Within the latter the legal basis (finality), the interoperability of different parts of the infrastructure, the efficiency and competition, and governance might be topics for investigation. Central counterparties concentrate on risks and may influence the functioning of the market and create risk to the participants, when the risk management is not properly designed and there is no strong legal basis.
- Build out the oversight role in order to be compliant with the standards set out for oversight in the CPSS Core Principles for Payment System (Responsibilities A-C) and the CPSS/IOSCO Recommendations for Securities Settlement Systems and for Central Counterparties.
- Carry out self-assessments. Within this context an update of the assessment of SIAC and an assessment of the observance of SPEI of the CPSS Core Principles should be performed. Also an assessment of the observance of SIDV and the two CCPs of the relevant CPSS/IOSCO Recommendations should be conducted in cooperation with the CNBV. In 2001 the observance by SIDV of the Core Principle for Systemically Important Payment Systems was assessed, although SIDV is in essence a securities settlement system. However, the CPSS/IOSCO Recommendations for SSS were not available at that time. Issues that need to be given special attention in the assessment of SIDV are the operational reliability of the system, the custody arrangements, and the use of collateral in the short-term money market.

#### **V. FURTHER STEPS**

27. Once the self-assessments and the necessary background information on rules and regulations, and other relevant aspects of the legal framework and the functioning of the systems are available, an assessment for these systems could be carried out by the Fund and the World Bank.