

# Bank of Canada Oversight Activities during 2006 under the Payment Clearing and Settlement Act

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**T**he Payment Clearing and Settlement Act (PCSA) formally requires the Bank of Canada (the Bank) to exercise oversight of clearing and settlement systems that could be operated in a manner that could pose systemic risk.<sup>1</sup> Systemic risk is defined in the PCSA as the risk that the default of one participant in a clearing and settlement system could, through the operation of the system, lead to the default of other participants in the system or other systems. A clearing and settlement system is the set of instruments, procedures, and rules governing the transfer of funds or other assets among system participants. Typically, there is agreement among the participants on the technical infrastructure to be used by the system.

The purpose of this report (the second in an annual series) is to review the Bank of Canada's oversight activities under the PCSA during 2006, as part of its efforts to be transparent and accountable for its activities in this area.<sup>2</sup>

Under the PCSA, the Bank identifies clearing and settlement systems in Canada that could be operated in a manner that could pose systemic risk. Once identified, and provided the Minister of Finance agrees that it is in the public interest to do so, these systems are designated for oversight by the Bank and must satisfy the Bank that they have appropriate risk controls in place to deal with any concerns related to systemic risk. Three such systems have been designated by the Bank: the Large Value Transfer System (LVTS), the CDSX, and the CLS Bank.

## The Large Value Transfer System

The LVTS is owned and operated by the Canadian Payments Association (CPA). It began operations in February 1999. It currently processes about 19,000 transactions per day, worth approximately \$166 billion. Since its inception, there have been very few changes to the design or rules of the LVTS that could raise concerns about systemic risk, and this pattern continued in 2006. However, some important changes were made to the system's rules last year to reduce certain potential sources of operational risk. These changes addressed the responsibilities of participants in the testing of changes to the LVTS, the adequacy of contact information, and the procedures to follow should the LVTS Direct Network be used to initiate a payment.<sup>3</sup>

Integral to the Bank's oversight process is the use of Memoranda of Understanding (MOUs) with operators of designated systems. MOUs describe the roles and responsibilities of both parties under the PCSA and set out how they intend to work together to meet those responsibilities. They address such topics as the Bank's exercise of its oversight responsibilities and powers, as laid out in the PCSA, confidentiality of information, time frames for review of significant system changes, and the use of minimum standards. A major accomplishment in this regard was the conclusion of intensive discussions with the CPA and the signing of an MOU covering the oversight of the LVTS in November 2006. The MOU reflects the collaborative and co-operative nature of the oversight process that the Bank prefers to follow. It has added clarity to the relationship between the Bank and the CPA and has enhanced the oversight process.

1. The PCSA came into force in 1996. Prior to that time, the Bank carried out this responsibility on an informal basis.  
2. See Engert and Maclean (2006) for a discussion of the general oversight strategy and processes used by the Bank.

3. See Goodlet (2006) for a description of the use of the Direct Network to address certain types of operational risk.

For example, the CPA will now provide advance written notice of any significant change to the LVTS bylaws or rules, so that the Bank can determine if the proposed changes raise any concerns about systemic risk.

## CDSX

CDSX is a system for the clearing and settlement of securities transactions in Canada. The system, which is owned and operated by CDS Clearing and Depository Services Inc., processes, on average, about 390,000 trades daily, worth \$230 billion.

During 2006, the most important issue dealt with by the Bank and The Canadian Depository for Securities Ltd. (CDS) involved the corporate restructuring of CDS. The purpose of the restructuring is to gain operational efficiencies by aligning various functions with corporate subsidiaries of CDS. This includes the separation of the clearing and settlement activities of CDS from its other activities.

From the perspective of systemic risk, one benefit of this separation is that it largely addresses the Bank's concern that, in very unlikely circumstances, the non-regulated activities of CDS could result in CDS being unable to make and receive payments in CDSX, thus compromising the ability of CDSX to settle payment obligations in a timely fashion. This situation could arise if, for example, the non-regulated activities of CDS were to cause its insolvency or result in legal actions that would prevent CDS from performing its role as central counterparty.

A new legal entity, called CDS Clearing and Depository Services Inc. (created on 1 November 2006), now acts as system operator and central counterparty in CDSX, and its ability to act will not be compromised, directly or indirectly, by the design and operation of services other than the clearing and settlement of securities transactions and associated activities. The Bank considers this step to be an enhancement of the risk proofing of the CDSX system.<sup>4</sup> The

restructuring involved much work by many parties (CDS staff, CDSX participants, and its regulators), and the smooth transition to the new corporate structure is a testament to their collaborative and co-operative approach.

An important aspect of the new structure is that the entity operating and serving as the central counterparty in CDSX also operates its cross-border services, which link CDSX or CDSX participants to foreign securities settlement systems. To deal with the potential systemic risk impact on CDSX, the Bank has clearly specified its information needs and the areas to be examined for possible risks when considering any future cross-border linkages involving the new operating entity. This specification is based on extensive discussions with CDS.

Another important development during 2006 was the self-assessment carried out by CDS concerning its compliance with international standards in its role as a central counterparty. CDS and the Bank have been strong supporters of the work in this area. Consequently, CDS made a presentation to the Bank for International Settlements Committee on Payment and Settlement Systems (which developed the standards) on the process and the results of the self-assessment. The Bank has also encouraged CDS to keep its financial-risk model current. CDS has now put in place processes to do this, which will facilitate the ability of the Bank and other parties to systematically examine potential risks arising from proposals for new clearing and settlement services.

A valuable component of the Bank's oversight process with regard to CDSX is the bilateral meetings between the Bank and CDS that examine a range of topics related to the operation of CDSX. These meetings provide the Bank and CDS with an opportunity to explore any concerns or questions related to proposed changes to CDSX on a timely and efficient basis. The Bank is thus alerted to possible changes very early in the process and can raise any concerns that it may have so they can be dealt with efficiently by CDS in the process of developing system changes. During 2006, the Bank held two such meetings with CDS.

The Bank approved 35 changes to CDSX rules and procedures during the year.

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4. The Bank also arranged with the Department of Finance for an Order-in-Council to designate the new entity as a securities and derivatives clearing house under Section 13.1 of the PCSA, which provides the continuation of important legal protections in the event of the failure of a CDSX participant. An Amendment to the PCSA to include the name of the new operating entity came into effect in April 2007.

## The CLS Bank

CLS Bank, which began operations in 2002, now clears and settles foreign exchange transactions in 15 currencies, including the Canadian dollar, with an average daily value of US\$2.7 trillion. The average daily value of Canadian-dollar transactions in 2006 was US\$60 billion. Since CLS Bank operates transnationally, the Bank of Canada, as well as a number of other central banks, has oversight responsibilities or interests in the operation of the system. Most of the developments with regard to CLS Bank in 2006 involved its overall operations, since there were no specific changes to the arrangements used to settle the Canadian-dollar portion of foreign exchange transactions.

The Federal Reserve, which is the lead supervisor of CLS Bank, reviews the liquidity and capital policies of the CLS as they relate to the supervisory standards set for CLS Bank. The results of this review, as well as other supervisory information, are shared with the central banks whose currencies settle in CLS Bank. This is part of the co-operative oversight arrangement for CLS Bank that facilitates the sharing of information among central banks (subject to confidentiality requirements), the discussion of common oversight policies and approaches, and the coordination of oversight activities.

As CLS Bank has evolved, the addition of new currencies and the expansion of the types of settlement services it offers have been a major focus of the analytical work of the co-operative oversight group. Since CLS Bank has a very robust process for settling transactions across borders, it continues to search for opportunities to spread the significant fixed costs associated with this process across a greater volume of transactions in existing or new types of business. With regard to the settlement of foreign exchange transactions, CLS Bank modified the prices for its services during 2006 to help increase the volume of transactions that it processes. In addition, CLS Bank is exploring the processing of new types of transactions on its existing platform by offering the financial sector a means of reducing risks or costs associated with current practices. The Bank of Canada believes that the fundamental principle guiding the oversight group in considering these issues should be that the addition of new currencies or new business should comply with the core

principles for systemically important payments systems and, in particular, should not impair the risk-mitigation arrangements employed by CLS Bank to deal with foreign exchange settlement risk.

During 2006, the central banks with CLS-eligible currencies carried out a survey of the management of foreign exchange settlement risk at major banks in their countries. The survey results and an analysis of the data are expected to be published by the Bank for International Settlements. With the decision of a fourth large Canadian bank to use CLS Bank for its eligible transactions, Canadian banks are recognizing that the CLS arrangement is increasingly being considered best practice for mitigating foreign exchange settlement risk.

## Other Oversight Activities

Following an extensive review of its oversight processes conducted in 2005, the Bank made a number of changes in 2006 to better align these processes with the ongoing operations of designated clearing and settlement systems. These included the implementation of more formalized internal processes, including those for handling system changes and conducting annual audits. The Bank and the Department of Finance reviewed the operation of the Payment Advisory Committee, resulting in a clearer mandate and oversight processes. In addition, the Bank continued to enhance its oversight resources to provide for greater analytical capability and better backup for important staff functions.

Internationally, during 2006, the Bank became a member of a BIS working group examining the cross-border interdependencies among clearing and settlement systems and their participants. In particular, the group is interested in the potential for systemic disruptions and contagion across borders should a major clearing and settlement system experience a serious disruption.

The Bank is also increasingly involved in the co-operative oversight arrangement for the Society for Worldwide Interbank Financial Telecommunication (SWIFT). SWIFT is the principal payment messaging service provider for financial institutions around the world and for critical systems, such as the LVTS and CLS Bank. In 2004, the G-10 central banks established a joint Oversight Group for SWIFT under the leadership of the National Bank of Belgium. This

Group monitors and assesses the extent to which SWIFT maintains appropriate governance arrangements, structures, processes, risk-management procedures, and controls to effectively address any potential concerns it may pose to financial stability.

Since 2002, SWIFT has been the subject of subpoenas issued by the U.S. Treasury Department for access to information on global payments using SWIFT messaging services. These subpoenas were imposed on SWIFT as part of a global scrutiny of terrorism financing. Knowledge of these subpoenas became public in 2006 and raised privacy concerns in several countries, including Canada, about the nature of the payments information being requested. The National Bank of Belgium issued a press release on behalf of the SWIFT Oversight Group and the G-10 Governors indicating that such issues were beyond the Oversight Group's mandate, which covers the financial stability implications of SWIFT services to systemically important systems. Moreover, the Oversight Group does not have the authority either to approve or prohibit SWIFT's compliance with such subpoenas. Privacy commissions in a number of countries conducted investigations into the actions of SWIFT. The Office of the Privacy Commissioner in Canada recently completed its investigation and concluded that SWIFT did not contravene Canada's Personal Information Protection and Electronic Documents Act when it complied with lawful subpoenas served outside of Canada.

During 2006, the Bank continued to work with the operators and participants of systemically important Canadian clearing and settlement systems to enhance arrangements for continuity of operations. These systems are at the centre of Canada's financial system, and serious economy-wide repercussions could arise if their operations were not extremely reliable. In 2006, the working group that was created to address systemic issues related to business-continuity planning (BCP), and to examine the coordination of BCP among system operators and participants and the Bank of Canada, completed the second phase of its work. The major findings of the phase II report of the Joint Working Group were: (i) the CPA and CDS had reduced their operational risk, with split operations initiatives accounting for much of the improvement; (ii) their BCP practices compared favourably with those of similar organizations in other

countries, although it was recognized that benchmark practices continue to evolve rapidly; and (iii) efforts to achieve a priority-recognition status with federal and provincial organizations with responsibilities for emergency management have yet to yield positive results. Recognition of the priority to access the supply of essential inputs such as hydro, diesel fuel, or municipal services during a seriously disruptive event is an important component of these systems and of the Bank's BCP work. The next phase of the group's work will be to involve the participants in the LVTS and CDSX to examine their roles in dealing with potential systemic BCP risks and the coordination of BCP efforts. The Bank is working actively with the CPA and CDS to facilitate this process.

The Bank has also been involved in groups addressing preparations for a possible flu pandemic. It has worked with the federal Department of Finance to review the BCP arrangements of federal agencies with responsibilities for the financial sector with a particular emphasis on a flu pandemic scenario. Similarly, the Joint BCP Working Group also gave special emphasis to this scenario. Internally, the Bank is re-examining its program for business-continuity planning with regard to any particular changes that might be necessary should a flu pandemic materialize.

During 2005, the Bank completed its three-year program to improve the ability of its backup site to respond effectively to serious operational disruptions. IT and business-recovery testing during 2006 revealed some shortcomings in meeting the Bank's objectives for internal recovery time. Most of these gaps have now been addressed and tested. Testing of further refinements is planned for 2007. The multi-year redevelopment of a high-availability system for providing banking services to financial institutions and critical clearing and settlement systems was expected to be completed in 2006. However, extended testing has resulted in a significant delay in the implementation of the system. The Bank of Canada remains committed to improving its ability to deliver its unique services to major clearing and settlement systems on a high-availability basis.

## Published Research Relevant to the Bank's Oversight Function

During 2006, the Bank published the following staff work related to clearing and settlement systems:

- Arjani, J.N. 2006. "Examining the Trade-Off between Settlement Delay and Intraday Liquidity in Canada's LVTS: A Simulation Approach." Bank of Canada Working Paper No. 2006-20.
- García, A. and R. Gençay. 2006. "Risk-Cost Frontier and Collateral Valuation in Securities Settlement Systems for Extreme Market Events." Bank of Canada Working Paper No. 2006-17.
- Kamhi, N. 2006. "LVTS, the Overnight Market, and Monetary Policy." Bank of Canada Working Paper No. 2006-15.
- Lai, A., N. Chande, and S. O'Connor. 2006. "Credit in a Tiered Payments System." Bank of Canada Working Paper No. 2006-36.
- McVanel, D. 2006. "The Impact of Unanticipated Defaults in Canada's Large Value Transfer System." Bank of Canada *Financial System Review* (June): 69–72.

Research summaries of the papers by Lai, Chande, and O'Connor, and García and Gençay were also published in the December 2006 issue of the Bank's *Financial System Review*.

## References

- Engert, W. and D. Maclean. 2006. "The Bank of Canada's Role in the Oversight of Clearing and Settlement Systems." Bank of Canada *Financial System Review* (June): 57–64.
- Goodlet, C. 2006. "Bank of Canada Oversight Activities during 2005 under the Payment Clearing and Settlement Act." Bank of Canada *Financial System Review* (June): 31–34.