FOR AGENDA

SM/08/18
Correction 1

February 6, 2008

To: Members of the Executive Board

From: The Acting Secretary

Subject: **Canada— Financial System Stability Assessment—Update**

The attached corrections to SM/08/18 (1/16/08) have been provided by the staff:

Factual Errors Not Affecting the Presentation of Staff's Analysis or Views

Page 8, fifth bullet, last sentence:	for "Similarly, the ministerial waivers…for public interest reasons.", read "Similarly, the Minister may…for public interest reasons."
Page 15, para. 13, footnote 2:	deleted
Page 18, Box 1, footnote 1:	for "provisions", read "additional loss buffer."
Page 22, para. 31, footnote 16:	for "The "marginal funding facility" was…to back up the facility.", read "Certain dealer bank asset…have indicated an interest in participating."
Page 25, para. 43, line 7:	for "generally are not", read "have thus far never been."
line 8:	for "…on the viability of its members' institutions, cancel insurance coverage, issue cease-and-desist orders, or assume receivership.", read "…on the viability of its members' institutions, terminate and cancel insurance coverage, or assume receivership."

Page 26, para. 44, line 4:	for "Similarly, the ministerial waivers…unacceptable systemic risk.", read "Similarly, the Minister may…for public interest reasons."
Page 27, para. 48, 3rd bullet:	add "further"
Page 34, footnote 25:	move footnote to end of following sentence, and insert "For example," at beginning of footnote.
Page 43, para. 91, line 3:	for "The TSX already…expires in 2009", read "In December 2007, the TSX…the first quarter of 2008."
Page 43, footnote 39:	for "The equity marketplaces…and the Alternative Trading Systems (ATS).", read "The equity marketplaces…and the several alternative trading systems (ATS)."

Typographical Error

Page 12, para. 6, 2nd sentence: for "greatail" read "retail"

Questions may be referred to Mr. Ferhani (ext. 34870) and Mr. Habermeier (ext. 38857) in MCM.

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Att: (10)

Other Distribution:
Department Heads

The focused review of the Basel Core Principles for Effective Banking Supervision (BCP) found the Office of the Superintendent of Financial Institutions (OSFI) to be compliant with the four revised principles. Bank supervision is reliance-based as a means of reducing duplication and controlling regulatory costs. However, the need to assess risk in a complex and evolving financial services environment would seem to require some additional resources for supervisory cross-checking of banks' submissions, including on-site.

The regulatory framework for the securities market in Canada in most respects implements the International Organization of Securities Commissions (IOSCO) Principles. While the assessment relies largely on the framework for Ontario and Quebec, most of the provinces have a robust legal and institutional framework for the regulator and for most of the areas covered by securities regulation. There are gaps in the regulation and supervision of collective investment schemes, although the most significant problems would be addressed with the implementation of National Instrument 31–103 on Registration Requirements. Enforcement of securities laws also needs further improvement. In addition, there is scope to improve the coordination among the provincial regulators to eliminate gaps and overlaps, and to make efficient use of resources.

There would be advantages in moving towards a single securities regulator. Significant improvements to the regulatory system have been made as a result of the creation of the CSA, including those that will be brought about by the implementation of the passport system. Nevertheless, in the view of the staff, there would be merit in consolidating regulatory and oversight functions in one agency. A single regulator would allow policy development to be streamlined, allowing Canada to respond more quickly to local and global developments. It would probably also reduce costs for market participants, since there would be only a single set of fees. A single regulator would have enforcement authority in the whole country, and therefore would eliminate the inefficiencies created by the limited enforcement authority of individual provincial regulators. In addition, the existence of a single regulatory authority responsible for administrative enforcement would help to simplify coordination with other enforcement agencies. A single regulator could be structured in different ways, including the "common" regulator recommended by the Crawford Panel.

The Canadian Depository Securities Settlement System is sound, efficient and reliable, and it complies with almost all Recommendations for Securities Settlement Systems (RSSS). The legal basis for the system's operation is solid, its functionality is well developed, its procedures to mitigate credit, liquidity and operational risks are appropriate, and its governance structure is effective and transparent. Recommendations focus on steps to further enhance risk management procedures and the regulatory environment.

MAIN RECOMMENDATIONS

High priority

- Careful monitoring and management is needed of the fallout from turmoil in the global money and credit markets, which has led to problems in the Canadian nonbank sponsored ABCP market. Given the significant risk of spillovers to the banking system, all of the relevant authorities need to regularly review possible measures in view of emerging information.

- Market participants should be encouraged to take steps to ensure that conduits and other structured finance products are sufficiently transparent, supported by reliable ratings, and the authorities should ensure that market participants continue to move in this direction.

- Given the need to assess risk in a complex and evolving financial services environment, OSFI may wish to consider allocating additional resources for cross-checking of the submissions provided by financial institutions, including in on-site inspections.

Medium priority

- The Bank of Canada (BoC) may wish to regularly conduct stress tests, as an input for its Financial System Review. There is already close cooperation on financial stability analysis between OSFI and BoC, and it would be desirable to build on this in developing a system-wide approach.

- Transparency would be buttressed by reducing the room for discretion and forbearance in bank intervention and resolution. Currently, the “structured early intervention” regime provides for, but does not mandate, specific supervisory actions as certain capital thresholds are breached. Similarly, the Minister may not approve certain CDIC interventions for public interest reasons.

- There would be advantages in moving beyond a passport system towards a single securities regulator. A single regulator would allow policy development to be streamlined, would likely further reduce costs, and improve enforcement.

Lower priority

- Clearing and Depository Services (CDS) could assess the benefits and costs of acting as a central counterparty (CCP) for trade-for-trade (TFT) transactions.

- A securities lending facility could be introduced to reduce settlement failure; CCP functions should be separated from the CDS functions; and the concentration of settlement cash for U.S. dollar-denominated securities in a single settlement bank should be reduced.

- OSFI and the provinces should ensure that the regulatory framework for pension funds focuses increasingly on the adequacy of risk management practices and resources, in addition to the traditional solvency approach.

Other recommendations are found in the body of the FSSA and in the Reports on the Observance of Standards and Codes (ROSCs).

Table 2. Canada: Financial Sector Structure, End-2006

	Assets		
	In Billions of Can$	In Percent of Total Assets	In Percent of GDP
Banks	**2,389.0**	**59.3**	**166.0**
Canadian	2,214.0	54.9	153.8
Foreign	175.0	4.3	12.2
Trusts (including bank subsidiaries) 1/	**254.7**	**6.3**	**17.7**
Credit unions and caisses populaires	**193.8**	**4.8**	**13.5**
Life insurance companies 2/	**346.5**	**8.6**	**24.1**
Canadian	331.1	8.2	23.0
Foreign	15.4	0.4	1.1
Property and casualty (P&C) insurance	**93.2**	**2.3**	**6.5**
Mutual funds	**660.2**	**16.4**	**45.9**
Asset based financing and leasing 3/	**92.3**	**2.3**	**6.4**
Total	**4,029.7**	**100.0**	**280.0**

Sources: Office of the Superintendent of Financial Institutions; Credit Union Central of Canada; and Canadian Finance and Leasing Association.

1/ Assets of the bank subsidiaries are double counted in the consolidated bank assets.
2/ Excluding fraternals.
3/ Based on the 2005 Industry Survey by the Canadian Finance and Leasing Association.

5. **Financial performance of the major banks has been good in recent years**, with solid profitability, stronger asset quality, and comfortable capital ratios (Table 3). Core financial soundness indicators are among the best in the G-10 (Figure 1).

6. **The "widely held" rule for large banks limits the concentration of bank share ownership and thus the scope for mergers and for foreign entry through acquisition.** The legal framework has enabled Canadian banks to concentrate on their profitable domestic retail franchises, leaving many large domestic borrowers to look abroad for wholesale funding. Although the structure of the Canadian banking market is oligopolistic, available studies do not provide conclusive evidence that the large Canadian banks are in a position to abuse what market power they may have. Even so, the ability of the Canadian banks to garner large profits in low-risk activities suggests scope for steps to increase competition. This said, it is not clear that lifting the widely-held rule would achieve this objective, as such a step, by itself, could result in even greater market concentration.

Insurance

7. **The insurance industry is stable, profitable, and well-capitalized.** The life and health (L&H) insurance sector is dominated by three large domestic groups (accounting for 84 percent of the assets at the end of 2006). Both life and P&C insurers have been allowed to expand into other financial activities, through separately held subsidiaries, including banking and brokerage. Policy does not permit the consolidation of the largest life insurers, or their merger with the largest banks. Canadian life insurers are increasingly global, and earn more than 50 percent of their revenue outside Canada. The P&C insurance sector is more fragmented, with an important role for foreign insurers and those owned by provincial governments. Capital ratios comfortably exceed regulatory targets. Investment practices are conservative, with about 60 percent of assets held in investment grade bonds, and the geographic composition of assets roughly matching that of liabilities. Holdings of ABCP are minimal. Earnings have been high in both the L&H and P&C sectors in the last few years.

Securities

8. **Canada's sophisticated securities industry has benefited from particularly favorable conditions in recent years.** Total revenue amounted to C$ 15.9 billion in 2006, up 17.8 percent over 2005, while operating profits rose by one-third. The mutual fund industry is highly developed, with a majority of assets held in tax-deferred registered savings accounts. Among the 10 largest mutual fund managers, four are part of large Canadian banking groups, and three are part of financial groups in the United States and United Kingdom. Sound fiscal policy has resulted in declining government (and more recently provincial) debt issuance, but has been more than offset by corporate bond issuance. Trading

10. **The percentage of U.S. dollar-denominated bonds issued in the United States by Canadian corporations has increased since the late 1980s.** Very large issues, formerly placed only in the eurobond market, are now also being placed domestically.

11. **There is no high-yield bond market in Canada.** Domestic demand for high-yield bonds has traditionally been limited, including by pension funds (even as the largest pension funds have diversified into new asset classes). Furthermore, investors have at times viewed the income trust market as a substitute for high-yield bonds. Canadian issuers of high-yield debt (especially large issuers) have traditionally found better financing conditions, and a larger pool of investors to tap, in the United States.

Hedge funds

12. **Hedge fund activities in Canada are rapidly expanding.** Assets managed by domestic hedge funds are estimated at C$ 30 billion in early 2007, up from about C$ 4 billion in 2000.[1] Even so, the hedge fund industry remains small by international standards, with less than 10 percent of the funds managing assets in excess of C$ 100 million. Canada-based hedge funds are primarily focused on long/short equity strategies. The recent acceleration in the development of hedge fund activities follows years when the growth of the industry was impaired by two prominent cases of fraud, but investor protection is improving, and a "comprehensive registration rule" has been proposed.

Housing finance

13. **The Canadian mortgage market is well-developed, with low default rates.** In recent years, the market has been undergoing rapid change and development, while maintaining prudent underwriting practices. Subprime loans account for less than 3 percent of outstanding mortages. Securitization of mortgages has not been as widespread as elsewhere (only one-fifth of Canadian mortgages are securitized), reflecting the statutory requirement that all bank-held mortgages with loan-to-value ratios above 80 percent be insured (these mortgages carry a zero risk weight for regulatory capital purposes, reducing the incentive for originating banks to securitize). While most large lenders offer mortgages with long amortization periods (25 years is typical, and 30 and 40 year terms are increasingly available), the contractual maturity usually does not exceed 5 or 10 years. Prepayment penalties and lack of interest deductibility reduce demand for longer-term mortgages, while the prevalence of deposit financing makes banks reluctant to offer long maturities.

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[1] Hedgeweek, "Toronto Hedge Fund Services 2007" (May 2007), hedge fund press releases, and discussions with prime brokers.

Retirement savings

14. **Canada's retirement income system consists of three pillars and is based on a mix of public and private schemes.** The first pillar is the Old Age Security/Guaranteed Income Supplement Program, a public program financed by the Government of Canada. The second pillar is the Canada Pension Plan, which provides all workers in Canada with a basic earnings-related pension. It is financed through mandatory employee and employer contributions, and is sustainable at current contribution rates until at least 2075**.** The Quebec Pension Plan is the second pillar program for residents of Quebec, and is similar to the Canada Pension Plan. The two public pillars provide a replacement rate of approximately 70 percent. Finally, registered pension plans sponsored by employers, as well as individual registered retirement savings plans, comprise the third pillar. These registered plans are often defined benefit, tax deferred, and voluntary, and have been growing in importance (they now provide more than 30 percent of retirement income).

Derivatives

15. **Canada's derivatives markets are well-developed and sophisticated.** A wide range of financial contracts are available to market participants, either through regulated markets, or over-the-counter (OTC). As in other developed markets, derivatives activity has developed primarily in the OTC markets. Canadian firms and residents conduct energy and commodities business primarily in London and New York, and regulation in the Canadian electricity market limits hedging needs by end-users. The Montreal exchange, which specializes in derivatives, is set to merge with the TSX in 2008.

II. Financial Stability

16. **Canada's financial system appears stable, with a low risk of systemic problems.** Financial stability is supported by sound macroeconomic policies, a well-designed crisis management framework (Section III), and advanced prudential regulation and supervision (Section IV). Given their dominant position in the system, the resilience of the large banks was carefully assessed, including through stress testing. The global problems in the money and credit markets that began in August 2007 have spilled over to the Canadian financial system, triggering illiquidity in a large segment of the market for ABCP. Banks are also beginning to write down exposures to subprime assets. However, it appears that thus far, these problems are manageable.

A. Bank Soundness and Stress Tests

17. **Canadian banks appear to be sound and resilient.** The stress tests indicate that the five largest banks would be capable of weathering a shock about one-third larger than the 1990–91 recession, involving a contraction of the North American economy, an increase in

interest rate risk premia, and lower commodity prices.[2] This resiliency may in part reflect the fact that the Canadian banks are national in scope and thus able to benefit from regional and sectoral diversification.

18. **The banks' position going into the stress tests was favorable.** The sum of loan loss provisions and capital (as a ratio of risk-weighted-assets) stood at 12½ percent at end 2006, a slight decline from 13¾ percent at end 2003, but still comfortable by international standards.[3] The nonperforming loan ratio declined from 1.2 percent to 0.4 percent during the same period.[4]

19. **The stress tests examined the effects of several different shocks.** The principal stress test was based on a macroeconomic scenario (MS) covering ten quarters and developed using the BoC macroeconomic model. The model was used to ensure the internal consistency of the scenario, including in the interactions among countries. Bottom-up stress tests (BU) were performed by the five largest banks, using their internal risk models. The BU results for the MS were cross-checked using consistency tests (CT), drawing on banking data provided by the authorities. The risk-based methodology used for the CT allows the estimation of expected losses (EL) and unexpected losses (UL) for each of the banks participating in the stress test with publicly available information. In addition, five single factor shocks (SF) were considered.

20. **The results of the MS stress test for *credit risk* show that banks would experience significant capital stress in the unusually strong recession in the scenario.** However, thanks to their comfortable initial capitalization, banks appear to be capable of weathering this storm. The cumulative effects of the macroeconomic shocks are reflected in increasing probabilities of default, then in expected and unexpected losses, and ultimately in banks' capital adequacy ratios. The results (Box 1) show that from the fifth quarter on, the minimum capital adequacy ratio (CAR) of 8 percent is breached, with some banks more seriously affected than others. Even so, all banks continue to have adequate capital.[5] The CT closely confirms the BU results. The single factor shocks for credit risk have a less pronounced effect on CAR, but in combination are quite substantial.

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[2] Given that Canadian banks have pursued international expansion mainly in the United States, Latin America, and the Caribbean, their sensitivity to the common shocks affecting the broader region is accentuated.

[3] OSFI is approaching the implementation of Basel II cautiously to forestall any undue decline in banks' risk buffer.

[4] The five largest Canadian banks have on average, exposures above 53 percent to the mortgage sector.

[5] EL are defined as EL= PoD x Exposure x LGD, where PoD is the probability of default and LGD is the loss-given default of each loan in a bank's portfolio. While it is important to estimate EL, estimating UL is fundamental to the effective management of credit risk. Economic capital should be available to cover UL.

Box 1. Stress Tests

Macroeconomic stress scenario

Labor productivity growth sharply decreases in the United States, remaining weak for a long period of time. Consequently, consumers and firms in the United States increase their saving rates. Foreigners' concern about the sustainability of large United States current account imbalances results in a significant depreciation in the U.S. dollar. Moreover, the weakness in the United States and the resulting increase in PoD leads to a rise in financial risk premia, further exacerbating the economic slowdown. As in the United States, Canadian consumers and firms lose confidence and increase their savings rates. The appreciation of the Canada-United States exchange rate contributes further to the contraction of the Canadian economy. In turn, there is a rise in commercial interest rate premia, further exacerbating the weakness in Canadian GDP growth.

Capital Adequacy Ratio Under Macro Stress Scenario
(In percent)

Bottom Up Stress Test				Consistency Test			
Period	**Expected Loss**	**Unexpected Loss**	**CAR** 1/	**Period**	**Expected Loss**	**Unexpected Loss**	**CAR** 1/
2006Q4	0.87	2.83	8.88	**2006Q4**	0.31	4.16	8.11
2007Q1	0.88	2.90	8.80	**2007Q1**	0.26	3.80	8.52
2007Q2	0.77	2.77	9.04	**2007Q2**	0.24	3.84	8.50
2007Q3	0.92	3.55	8.11	**2007Q3**	0.32	4.12	8.14
2007Q4	1.03	3.95	7.60	**2007Q4**	0.41	4.25	7.92
2008Q1	1.15	4.30	7.13	**2008Q1**	0.55	4.42	7.61
2008Q2	1.43	4.88	6.27	**2008Q2**	0.93	4.99	6.66
2008Q3	1.60	5.23	5.75	**2008Q3**	1.24	5.22	6.12
2008Q4	1.73	5.45	5.40	**2008Q4**	1.48	5.38	5.72
2009Q1	1.85	5.63	5.10	**2009Q1**	1.68	5.67	5.23

Source: Based on banks' estimates.

Sources: Fund staff estimates; Bank of Canada; and Office of the Superintendent of Financial Institutions data.

1/ Calculated as CAR plus additional loss buffer for the big five banks in 2006Q4 (12.59 percent), less EL and UL in each period.

Single factor shocks

Single factor 1—Credit risk: real estate prices. Residential and commercial real estate prices decrease by 30 percent in Western Canada and by 15 percent in Central Canada.

Single factor 2—Credit risk: recession in the United States and political risk in Latin America. GDP in the United States falls 1 percent for 1 year. At the same time, Canadian bank holdings in Latin America are adversely affected by political risk.

Single factor 3—Liquidity risk. The bank is shut out of the wholesale funding market due to a significant credit downgrade, resulting in an immediate 50 percent run-off in wholesale deposits and a 25 percent decline in consumer deposits over three months. (This shock is not included in the table below because its principal effect is not on capital.)

Single factor 4—Market risk: inversion of the yield curve. The front moves up by 300 basis points (bps) and the back moves down by 25 bps.

Single factors 5a, 5b—Market risk: parallel shifts of the yield curve. Instantaneous parallel shift. Up by 350 bps, down by 350 bps.

Capital Adequacy Ratio Under Single Factor Shocks

(Impact effect, relative to baseline CAR, in percentage points)

Bottom Up Stress Test

	SF1	**SF2**	**SF4**	**SF5a**	**SF5b**
CAR	-4.02	-3.55	-0.77	-0.84	0.13

Source: Banks' estimates.

and leases, sourced from a number of different lenders. These "multi-seller" conduits also enjoy liquidity protection from the sponsoring banks.

27. **Even so, most of the ABCP market growth since 2003 has come from arbitrage-oriented programs backed by collateralized debt obligations (CDOs) and sponsored by "third party" asset managers.** These third-party conduits, which generally purchase their liquidity protection from foreign banks, accounted for about C$ 35 billion of the market's C$ 116 billion outstanding just prior to the August shutdown. At that time, investors began to shun the third-party paper on fears that the underlying collateral was substantially exposed to CDOs backed by U.S. subprime mortgages. This took place against the background of a more general term-liquidity crunch, although the bank-sponsored programs were still rolling over their paper, albeit at substantially wider-than-normal credit spreads and into shorter terms to maturity. However, this became a problem for the third-party conduits because some of their liquidity support providers refused to provide liquidity, because in their estimation a "general market disruption" (GMD) had not occurred.

28. **Until recently, most Canadian liquidity protection could only be drawn in the event of a GMD, whereas conduits in Europe and the United States enjoy virtually unconditional "global-style" liquidity protection.**[12] This may have been, in part, an unintended consequence of OSFI's Regulation B-5, which exempted only GMD-conditional liquidity support from bank regulatory capital requirements. For unconditional facilities up to one year, OSFI and the United States used national discretion (consistent with Basel rules) to apply a 10 percent credit conversion factor (CCF), whereas most European countries applied a zero CCF.[13] Basel II will apply a zero CCF to GMD-conditional support, and 20 percent to unconditional facilities with maturities up to one year.[14]

29. **Because of the less than comprehensive liquidity protection, Moody's and Standard and Poor's (S&P) effectively refused to give high ratings to Canadian ABCP.** However, the local rating agency Dominion Bond Rating Service (DBRS) gave most programs their highest short-term rating (R-1 high), arguing that their credit enhancements already provided Canadian ABCP with adequate liquidity shortfall protection. However, the events of August 2007 have shown that S&P's and Moody's concerns were well founded.

30. **Efforts are nearing completion to restructure third-party ABCP that were subject to a rollover (or "standstill") agreement until end-January.** The "Montréal

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[12] Only the multi-seller conduits sponsored by the Royal Bank of Canada and Bank of Nova Scotia (with $11 billion and $7 billion outstanding) offered global-style protection prior to August 21.

[13] For unconditional facilities with maturities over one year, North American and European regulators uniformly imposed a 50 percent CCF, as does Basel II.

[14] The required regulatory capital on a liquidity facility is calculated on the product of the CCF and the highest risk weight assigned to any of the underlying individual exposures covered by the facility.

Proposal," tabled in mid-August by a consortium of banks and investors representing some 80 percent of third-party ABCP outstanding, proposed to convert the short-term securities into floating-rate notes with maturities linked to those of the conduits' underlying assets (up to 10 years), with other details remaining to be clarified. The BoC and the Government of Canada have played a supporting role, exercising moral suasion in an effort to secure an early and orderly outcome. By mid-December only one conduit had been converted, with its ABCP holders receiving par plus a portion of the accrued interest, and on December 23, an agreement in principle was reached to effect the conversion of all but one of the conduits by March. The resolution was facilitated by the easing of margin triggers on about $26 billion of synthetic and leveraged underlying assets, and $14 billion of contingent liquidity to cover margin calls.[15]

31. **Separately, on August 21 and 22, banks that sponsor some C$ 86 billion of ABCP outstanding announced that they would offer unconditional "global style" liquidity protection,** eliminating one key Canadian ABCP market weakness. In addition, on September 13, DBRS changed its ABCP rating criteria to require global-style liquidity support.[16] Market participant reliance on a single rating agency is being addressed by the entry of additional credit rating agencies into the Canadian ABCP market. Nevertheless, transparency will have to improve, and supervisors will have to more closely monitor conduits sponsored by regulated financial institutions, since, even when support is not legally binding, reputational concerns may force banks to support their distressed conduits.

32. **The situation in the ABCP market is still evolving and continues to pose a risk to investor confidence.** Stress tests performed by OSFI indicate that if banks were to put the assets in their sponsored conduits on their balance sheets, this would leave them with capital above the regulatory targets.[17] While the problems in the third-party conduits may result in losses to some of the parties involved, it is not clear that the stability of the broader financial system will be materially affected. There is, however, the risk that continuing problems in the ABCP and money markets could lead to a wider loss of confidence.[18] The precise form such an event would take is of course difficult to predict, as are its possible consequences.

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[15] Certain dealer bank asset providers and other investors have agreed in principle to participate, and several of the large Canadian banks have indicated an interest in participating.

[16] They had already made such a change to their criteria for structured credit product-backed programs in January 2007, although this change grandfathered existing programs.

[17] However, these stress tests do not seem to consider an interruption of financing, a decline in asset prices, or the cost of holding "bridge loans" that would have otherwise been financed in the money markets.

[18] ABCP represented about half of the outstandings in the corporate short-term paper market. Of the C$ 223 billion short-term corporate paper outstanding on August 31, 2007, C$ 115 billion was ABCP, C$ 58 billion was bankers' acceptances, and C$ 50 billion was direct corporate issuance. However, of the C$ 115 billion ABCP, C$ 32 billion was issued by the "Montreal Proposal" conduits.

Box 2. The Bank of Canada's Response to the Recent Market Turmoil

In the BoC's view, the market instability that began in August 2007 reflected a spike in credit-quality concerns triggered by events abroad. In responding to the market stress, the BoC focused on ensuring that overnight liquidity remained sufficient. In addition to increasing the supply of settlement balances provided through the SLF, the BoC broadened the range of securities eligible for SPRAs. As a precautionary measure, the BoC also clarified procedures for any potential activation of the ELA and "severe and unusual stress" facilities.

In confining its liquidity support to pre-existing overnight instruments, the BoC had chosen not to depart from its established framework. Officials emphasized that the target interest rate for monetary policy was the overnight rate, and that there was an expectation that monetary policy actions in the overnight market would transmit along the yield curve.

Officials noted that while overnight markets settled close to target, there were pressures in the term money market. Although overnight rates had declined and sporadic private bond issuance was continuing at the long end, tensions in the money market persisted at the one-week to six-month maturities, where transactions were taking place, but at abnormally high rates. On the issue of term liquidity support, officials were skeptical about setting prices along a yield curve that is meant to be anchored by the overnight rate. Nonetheless, they recognized that injections of term liquidity could be considered under certain conditions, and in fact announced two such operations in December 2007 to address year-end funding pressures, in coordination with other central banks.

Officials recognized that there was significant debate as to the role of the central bank as a "market-maker of last resort" as well as lender of last resort. They noted moral hazard concerns and the potential for central bank actions to interfere with an appropriate repricing of credit risk by the market.

The evolving situation, in Canada and abroad, will require careful monitoring and adroit management. Officials were cognizant of the risk that, globally, the process of ascertaining losses and repricing credit risk could well prove protracted. Neither they nor market participants nor the rating agencies precluded the emergence of a global transparency premium in structured finance which, in the Canadian context, could act to limit the future inclusion of CDOs in ABCP asset structures.

C. Failure Resolution and Crisis Management

42. **Interagency information-sharing and coordination is achieved inter alia through the FISC,** a body that brings together the Governor of the BoC, the Deputy Minister of Finance, and the heads of OSFI, CDIC, and the Financial Consumer Agency of Canada. The FISC usually meets quarterly, but can be convened more frequently if needed.

43. **The agencies represented in the FISC have adequate powers to manage systemic problems, and contingency planning is well-developed.** OSFI enjoys considerable enforcement powers, including the authority to intervene progressively in problem institutions under "structured early intervention" provisions that clearly articulate a four-stage process culminating in closure, even while an institution's capital may remain positive. Bank resolution is the responsibility of the CDIC, which is subject to least-cost resolution requirements that may be, but have thus far never been, waived by the Minister of Finance. CDIC is authorized to make independent determinations on the viability of its members' institutions, terminate and cancel insurance coverage, or assume receivership. The CDIC may make temporary loans to, or purchase assets from, its members, for which it maintains a

C$1.6 billion contingency fund, has standing authority to borrow up to C$6 billion, and may apply for special appropriations from the government under an expedited process.

44. **Transparency would be buttressed by reducing the room for discretion in bank intervention and resolution.** The "structured early intervention" regime provides for, but does not mandate, specific supervisory actions as certain capital thresholds are breached. Similarly, the Minister may waive certain CDIC interventions for public interest reasons. In these and other provisions, the Canadian crisis management framework provides considerable scope for supervisory discretion and regulatory forbearance.

D. Payment and Settlement Systems

45. **The Canadian Payments Association owns and operates two national payment systems: the large value transfer system (LVTS) and the Automated Clearing Settlement System (ACSS).** LVTS is the principal system for clearing large-value and time-critical payments. It is one of the three designated clearing and settlement systems subject to the Bank of Canada's oversight for the purpose of controlling systemic risk. One tranche of the system is based on netting, with deferred settlement of the multilateral net account balance of the system participants, in contrast with the nondeferred gross payment feature in real time gross settlement, while the netting balances are electronically tracked throughout the day on a real time basis. At the same time, a rigorous risk management framework backed by collateralization of the system exposures and the BoC intraday liquidity provision ensure intraday finality of the payment. LVTS provides the cash settlement leg of the securities clearing system. The ACSS is a primarily retail payment oriented system with standard netting and deferred settlement features. The Minister of Finance has statutory oversight responsibilities over the Canadian Payments Association and its systems.

46. **The CDS is the national securities clearing and settlement organization.** It is owned by The Canadian Depository for Securities Limited, which in turn, is owned by the major banks, the Investment Dealers Association of Canada, and the TSX. It operates the settlement system developed by the CDS (CDSX), which provides clearing and settlement functions for equities and debt securities.

47. **CDSX has been designated by the Bank of Canada as a systemically important clearing and settlement system owing to the size and the type of securities transactions it processes.** It settles high value debt securities transactions; and if the system were not adequately protected against risks (notably settlement and operational risk), it could trigger or transmit serious shocks across the domestic financial market. Furthermore, debt securities are the primary instrument used as collateral in many financial arrangements, including the central bank's intraday liquidity provision arrangement for LVTS. The system also settles the securities leg of monetary policy operations.

48. **The assessment of CDSX against the Committee on Payment and Settlement Systems (CPSS)/IOSCO RSSS found that the system is sound, efficient, and reliable, and it complies with almost all RSSS.** The legal basis for the system's operation is solid, its functionality is well developed, its risk management procedures to mitigate credit, liquidity, and operational risks are appropriate, and its governance structure is effective and transparent. The following recommendations are provided to further enhance the operations of CDSX and its regulatory environment:

- CDS should assess the benefits and costs of acting as a CCP for TFT transactions.
- CDS could consider introducing a securities lending facility in order to reduce settlement failure.
- In order to further protect CDSX from the credit and liquidity risks inherited in the CCP services and, as is best practice, the authorities should strongly consider separating the CCP functions from the CDS functions, with the CCP being provided by a distinct legal entity.
- While cross-border settlement risk is not significant, CDS should take steps to further reduce the current concentration of settlement cash for U.S. dollar-denominated securities in a single settlement bank. In that regard, CDS might explore becoming a direct member of Fedwire or obtaining access to U.S. dollar central bank money through the BoC.
- While cooperation between the Bank of Canada and securities regulators—notably Ontario Securities Commission (OSC) and the Autorité des Marchés Financiers—is ongoing, these cooperative arrangements could be formalized, as well as those between the Canadian authorities and the relevant United States authorities for cross-border activities.
- CDS should not allow the transfer of securities delivered through the depository trust company (DTC) link to its participants until these securities reach settlement finality in the DTC system.

IV. Financial Regulation and Supervision

A. Overview of the Regulatory Framework

49. **Canada has established a highly effective and nearly unified regulatory and supervisory framework.** In this framework, OSFI plays the primary role in regulating and supervising federal financial institutions—150 deposit taking institutions, 308 insurance companies, and 34 foreign bank representative offices as of September 15, 2007—and those pension plans that are under federal jurisdiction. With a mandate to protect financial consumers (such as insurance policy holders, depositors, and pension plan members) from undue loss, OSFI bases its operations on principles including (i) supervision on a

consolidated basis; (ii) a risk-based approach; and (iii) a policy of early intervention. Canada regularly reviews its financial regulatory structure, most recently in 2006 (Box 3).

Box 3. The 2006 Financial Institutions Legislation Review

The Canadian government has put in place a unique five year review process for financial sector legislation.

Past reviews often culminated in a significant reduction of regulatory impediments to competition and efficiency. Entry by foreign bank branching was introduced in 1999, based on a review conducted in 1997. A consultation paper in 1999 ultimately lead to legislative changes in 2001, including allowing widely held financial institutions to organize under a regulated holding company structure and relaxing the widely held rule. Important elements of the 2006 review included:

- ***Improving disclosure to consumers.*** The disclosure regime for terms and conditions for deposit-type investment products and any associated fees are being strengthened, among other measures.
- ***Modernizing check payments.*** An enabling framework for electronic check imaging will be introduced. In parallel, measures were taken to shorten the check holding period.
- ***Foreign banks.*** Lighter entry regulation will be applied to so-called foreign near banks, that is, foreign entities providing bank-type services such as consumer loans, but which are not regulated as banks in their home jurisdictions.
- ***Mortgage insurance.*** The threshold loan-to-value ratio at which mortgage insurance becomes mandatory was raised from 75 percent to 80 percent.
- ***Credit Unions and Caisses Populaires.*** Credit unions or caisses populaires are able to incorporate cooperative credit associations, which may operate across provinces. The associations are allowed to opt out of deposit insurance if they do not accept retail deposits.
- ***Ownership regime thresholds.*** The equity threshold for large banks, which must be widely held, and medium sized banks, which are subject to a 35 percent public float requirement, was raised to C$ 8 billion and C$ 2 billion from the current level of C$ 5 and C$ 1 billion.

50. **Changes to the regulatory framework in Canada since the bank and trust and loan company failure episodes in the 1980s and early 1990s have focused on reducing supervisory forbearance.** In particular, progress was made in aligning supervisory incentives with the interest of the deposit insurers who directly bear the cost of a bank failure. The CDIC has been equipped with extensive failure resolution powers to deal with troubled member institutions.

regulations for issuers, collective investment schemes, and intermediaries will come into effect along with the passport system.

66. **However, the passport system has not been designed to address some of the inefficiencies of the provincial system of regulation listed above, including costs, delayed policy development, and fragmented enforcement.** Participants will continue to be required to pay fees to the regulatory authorities of all the provinces where they raise capital or provide services, which has a clear impact on the cost of and access to funding. Nevertheless, it should be mentioned that the Council of Ministers has instructed the CSA to review the fee system. In addition, policy development will continue to require approval by 13 jurisdictions. This protracted process can affect Canada's ability to react in a timely manner to local and global developments. Moreover the time spent in building consensus at a local level might detract from Canada having a leading role at an international level. The passport system has not been designed to address either the problem of the limited "jurisdiction" that regulatory agencies have and that poses challenges to effective enforcement. However, it needs to be recognized that effective enforcement will always require concerted efforts with other enforcement agencies—an area in which additional efforts are also required. Finally, the delegation of powers in the passport system will face challenges regarding the consistent application of the regulatory framework by the different provinces, and will require the creation of an oversight system.

67. **In the staff's view, a single regulator appears to be better positioned to address these shortcomings.** There are different alternatives for a single regulator, including the "common regulator" proposed by the Crawford Panel.[23] A single regulator would probably reduce compliance costs for market participants, since there would be only a single system of fees. It would streamline policy development, since decisions would be taken by a single body, and therefore would allow Canada to react more quickly to local and global developments. A single regulator would have enforcement authority in the whole country, and therefore would be in a better position to eliminate the inefficiencies created by the limited enforcement authority of individual provincial regulators. In addition, the existence of a single regulatory authority responsible for administrative enforcement would help to simplify coordination with other enforcement agencies. Appendix II provides background.

E. Retirement Savings

68. **Pension funds are increasingly diversifying away from traditional and domestic asset classes.** As the size of the government (and provincial) bond markets declines, and buyout transactions and M&A activity increase, domestic markets for public securities may prove increasingly unable to accommodate the investment needs of pension funds. In this context, the rapid growth of the Maple bond market and of the Canadian Mortgage Bond program are noteworthy, and the further development of mortgage securitization would also

[23] See Crawford Panel, *Blueprint for A Canadian Securities Regulator*, June 7, 2006.

be helpful. The larger pension funds are already moving toward global and sometimes more complex investment policies in a broader set of asset classes, including hedge funds, private equity, and infrastructure investment.

69. **These developments require continued reinforcement of risk management skills in pension funds and their supervisors.** Poor risk management and large losses by pension funds could lead to political pressure for bailouts. Substantial risk management challenges exist in investments in foreign markets or in complex, hard to value, and often illiquid financial instruments.[24] The large number of medium and small defined benefit pension funds may find it costly to operate in this environment, and innovative solutions could be considered.[25] The regulatory framework for pension funds will need to focus increasingly on the adequacy of risk management practices and resources, in addition to the traditional solvency approach. Echoing the "prudent man" rule prevalent on the asset side, the risk-based prudential approach implemented in the supervisory framework is welcome, and needs to be developed further, with reflections already ongoing in a number of provinces.

[24] For example, the Caisse des Dépots, a crown corporation that manages Quebec public pension and insurance funds, acquired large exposures to third-party ABCP conduits.

[25] Encouraging the establishment of larger, multi-employer pension plans, and facilitating the access of pension plans to the (re)insurance market where instruments are been developed to manage extreme risks, are possible ways to address this risk management challenge. In the same vein, forms of a possible affiliation with, or outsourcing to, sophisticated money managers or large pension plans may be possible. However, implementing some of these steps is likely to be difficult as there are many aspects that would require negotiation, such as contribution rates, benefit accruals, and so forth.

regulators have also worked on the development of a coordinated approach for exchanges and SRO oversight, with more progress being achieved at the level of the exchanges.

89. **Provincial regulators rely largely on self-regulatory organizations (SROs) for the regulation and supervision of the market and its participants.** The main SROs are the Investment Dealers Association of Canada (IDA), which has self regulatory powers over investment dealers; the Mutual Fund Dealers Association of Canada (MFDA), which has powers over mutual fund dealers; the Chambre de la sécurité financière (CSF), which regulates mainly mutual fund representatives in Quebec; Market Regulation Services Inc. (RS), which has self regulatory powers over the trading on equity marketplaces.[38] The Montréal Exchange is recognized as a SRO. The equity exchanges (TSX and TSXV) should be considered SROs, although they have outsourced market regulation functions to RS. IDA and RS have already submitted to the regulators a proposal for their merger.

Market structure

90. **Canada has a system of specialized securities intermediaries, although the categories and requirements vary across provinces.** In general there are three main categories: investment dealers, mutual fund dealers, and advisors. Investment dealers and mutual fund dealers are required to be members of an SRO (either the IDA or the MFDA; except in Quebec where mutual fund representatives are required to be members of the CSF while mutual fund firms are not). Membership in these SROs has de facto harmonized requirements for these two categories of participants (except for mutual fund dealers in Quebec).

91. **The main exchanges work under a model of specialization.** Under a noncompetition agreement, the TSX and TSXV have specialized in equity (senior and junior, respectively) while the MX is a derivatives market. In December 2007, the TSX and MX announced that they agreed to combine their organizations to create TMX Group Inc. The new organization will be managed from Toronto, but the trading of financial derivatives products will stay in Montreal. The merger deal, which is subject to approvals from regulators and MX shareholders, is expected to close in the first quarter of 2008.

92. **The TSX is the 7th largest equity market by market capitalization.** As of December 2006, market capitalization of the TSX Group amounted to US$1,701 billion. It ranks 12th by value of equity trading, with a traded valued of US$1,282 billion for 2006. There is an important link with the market in the United States: in 2006 there were 195 interlisted issuers out of 1,598 TSX-listed issuers, for a combined market value of US$1.2 trillion or 61 percent of total domestic market. Moreover the regulatory authorities have developed a Multijurisdictional Disclosure System, under which issuers from the United States and Canada largely rely on the filings that they produce in their home countries for purposes of the cross listing.

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[38] The equity marketplaces are the Toronto Stock Exchange (TSX), TSX Venture Exchange (TSXV), Canadian Trading and Quotation System—the new Canadian stock exchange, and the several alternative trading systems (ATS).

93. **Ontario has a significant share of the market and its participants.** Approximately 31 percent of listed issuers, amounting to 46 percent of Canada's equity markets, are based in Ontario; 60 percent of IDA members firms have their Canadian head office in Ontario; 76 percent of CIS assets are held by firms based in Ontario; and 49 percent of the assets of the top 100 employer funds are also held by Ontario based pension funds.

General preconditions for effective securities regulation

94. **The general preconditions necessary for the effective regulation of securities markets appear to be in place in Canada.** Those preconditions relate to sound macroeconomic policies, appropriate legal, tax and accounting frameworks, and the absence of entry barriers to the market.

Main findings

95. **Principles related to the regulator—**The largest regulatory agencies work independently of the government under a vigorous system of accountability. They are funded by levies imposed on market participants. Self funding has allowed them to retain sufficient qualified personnel to carry out their functions. They are subject to a high degree of transparency, including public consultation on regulations and published policy statements. At the same time, they abide by high standards of ethics that have been codified into an ethics code, with certain reporting obligations. They are active on investor education. Under the umbrella of the CSA, provincial regulators are coordinating their actions, albeit with uneven progress: issuers, CIS, and registrants are the areas where more progress has been achieved.

96. **Principles for SROs—**SROs are subject to authorization based on eligibility criteria that among others address issues of financial viability, capacity to carry out their functions, governance, and fair access. Supervision is based on a set of mechanisms that include off-site reporting, on-site inspections, as well as regular meetings and close contact with SRO staff to discuss on going issues.

97. **Principles for enforcement—**Canada has established a credible system for the supervision of the market and its participants in which SROs play a significant role. Enforcement has experienced positive change during recent years; however, it is still in need of considerable improvement. Matters of a criminal nature and securities law matters are enforced by different authorities, although these authorities can and do cooperate with each other in certain circumstances. However, the development of a coordinated approach to enforcement between criminal and securities law enforcement, with clear lines of accountability and benchmarks, seems to be missing. Both the federal authorities and the provincial regulators have taken important steps in that direction.

98. **Principles for cooperation—**The largest regulatory agencies have explicit and comprehensive powers to share information with both local and domestic authorities and can do so without the need of any external approval. The four largest jurisdictions are signatories