BANK OF CANADA
BANQUE DU CANADA

Remarks by Mark Carney
Governor of the Bank of Canada
to the Toronto Board of Trade
Toronto, Ontario
13 March 2008

CHECK AGAINST DELIVERY

Addressing Financial Market Turbulence

Since last summer, many of us here today have been preoccupied with the ongoing dislocations in financial markets. What began in securities linked to U.S. subprime mortgages has spread to a broad range of structured assets, conventional credit markets, and, to a lesser extent, equities. As a consequence, some of the world's largest financial institutions have recorded substantial losses, the cost of borrowing has increased, and the availability of credit has decreased. More than seven months on, the end is not yet in sight, although it is safe to say that we have reached the end of the beginning of this turmoil. This is not because the dislocations in markets have eased; in fact, strains in financial markets have intensified recently, but rather because we are entering a new phase where policy-makers and market participants have a better understanding of both the shortcomings in the current financial system and what needs to be done – by both groups – to address them.

This response is important for all economies. Even though most of the practices that contributed to the crisis took place beyond our borders, and our financial institutions are in comparatively robust health, Canada is not isolated from global events. Some of our institutions have suffered losses, and our economy is beginning to feel the effects of the deterioration in global financial conditions. Moreover, going forward, national markets will be judged by new standards of liquidity, transparency, and the greater integrity that comes from properly aligned incentives. Our institutions will have to compete in that environment.

In my remarks today, I would like to discuss briefly three of the factors behind the market turbulence and then outline corresponding priorities for the official sector and market participants. This list is far from exhaustive, but I chose these three because they are among the most important, and because efforts are now under way – in both the public and private sectors – to address them.

Causes of the Turbulence

Recent events represent an overdue repricing of risk; the direction of which was predicted by many and desired by some.[1] However, the speed and virulence of the repricing has illustrated the adage "Be careful what you wish for." While the repricing was triggered by significantly higher-than-expected defaults in U.S. subprime mortgages, we should all recognize that the trigger could have come from a wide range of sources. The social and

[1] Indeed, central banks had been discussing the possibility of a repricing of risk for some time. See "Developments and Trends," *Financial System Review* (Ottawa: Bank of Canada, June 2004): 4–5.

Not for publication before 13 March 2008
12:55 Eastern Time

economic costs of the events in the subprime market are concentrated in the United States, while the financial costs are both widely dispersed and – relative to the scale of the system – readily absorbable. In short, as painful as they are to those affected, subprime losses have been important primarily because they have revealed deeper flaws in the financial system. While a number of underlying causes can be identified, I will concentrate on three in particular.

The first relates to liquidity. In recent years, market participants were overly confident that liquid markets would continually provide an outlet for new products and represent an ongoing source of funding liquidity for financial institutions. Ample market liquidity had its origins in benign macroeconomic conditions, low and relatively stable long-term interest rates, financial innovation, and the broadening list of financial market participants. Ultimately sowing the seeds of its own demise, market liquidity fed a supreme confidence in the ability to sell holdings at prices that matched mark-to-model valuations.

This overconfidence encouraged the rapid growth of the "originate-to-distribute" credit model. In this model, the borrower often became separated from the end investor by several transactions, as credit risk was repackaged, tiered, securitized, and distributed. Many originators and distributors felt confident that long-term credit risk had been transformed into short-term "warehouse" risk prior to distribution and that distribution itself was irrevocable. Others knew that they had not fully eliminated these risks, but felt they could get out in time. Such confidence was misplaced. Risk had not disappeared, it had merely been redistributed, and that distribution was often not final. The current market disruptions represent, in part, the painful process of finding out where that risk ultimately lies.

Liquidity was also the Achilles heel of many asset-backed commercial paper (ABCP) programs and structured investment vehicles. In many such vehicles, medium-term, illiquid, hard-to-value assets were funded by short-term money market securities at yields only marginally higher than those offered by the most liquid, transparent, risk-free securities. As confidence that this paper could be rolled over faltered, there was indiscriminate selling of structured assets. In markets where backstop liquidity was judged not to be automatic, such as the ABCP currently involved in the Montreal Accord, noteholders could no longer redeem their paper.[2] In markets where backstop liquidity was robust, investors could exit and, as a result, ABCP came back on the balance sheets of financial institutions, which in turn raised concerns about the scale of their exposure. From a medium-term perspective, the disappearance of segments of ABCP markets around the world will have important implications for the viability of many securitized products, since ABCP represented an important funding source for the most senior tranches of securitized credit structures.

[2] The Bank of Canada raised this concern in P. Toovey and J. Kiff, "Developments and Issues in the Canadian Market for Asset-Backed Commercial Paper," *Financial System Review* (Ottawa: Bank of Canada, June 2003): 43–49.

The second cause of current market disruptions has been the lack of transparency and inadequate disclosure that characterizes many highly structured financial products. These shortcomings were ignored when times were good to the extent that many investors did not actually understand the characteristics of the securities that they owned. Market participants were often less surprised by the deterioration in subprime market fundamentals than by the marked-to-market losses of subprime collateralized debt obligation (CDO) securities, given the defaults in the underlying mortgages. This surprise, in turn, has prompted a broad re-evaluation of structured products and, in some cases, indiscriminate selling. Even months later, the opacity of these structured products has made them harder to value, thus dramatically reducing secondary market liquidity. Poor disclosure of many securitized products continues to make it difficult for new investors to enter the market confidently and purchase securities despite distressed prices and the presence of still-substantial global liquidity. Indeed, as I will discuss in a moment, the high cost of default protection in many markets – such as that for corporate bonds – implies a pessimism about actual default probabilities that appears excessive.[3]

At the same time, widespread uncertainty about the distribution of losses has fed concerns over counterparty risk. With the assumption that risk had been irrevocably transferred found wanting, market participants became uncertain about the true financial situations of their counterparties, and have sometimes been reluctant to lend, even at very short horizons. The resulting "reckless prudence" has, on occasion, created very unusual conditions in interbank markets and intensified the already sharp reduction in market liquidity.

Inadequate transparency was also a factor behind the breakdown of trust in credit-rating agencies, which has amplified the stresses in financial markets. This breakdown occurred for several reasons. First, the default and ratings transition probabilities of structured products have not always been consistent with those of corporate and sovereign ratings. Moreover, recent events have brought into focus some potential conflicts of interest in the ratings business.[4] The fall from grace of the rating agencies has had a significant impact because rating agencies had grown more powerful than anyone intended. Indeed, many investors seem to have performed little or no in-house credit analysis of their investments; in other words, they substituted a subscription to a ratings publication for analysis and due diligence.

The third and final cause that I will mention was a series of misaligned incentives. It has been belatedly recognized that the severing of the long-term relationship between the originator and the borrower has contributed to the decline in credit quality. Historically, the original lenders (or originators of a credit) would be meticulous with their documentation and careful with their due diligence, because they knew that they would likely retain the exposure to risk of default until the loan matured. However, as originators became increasingly confident that they could sell off the loan, documentation

---

[3] For example, in recent weeks, the default rates implied by the levels of the ITRAXX crossover index have reached almost twice the cumulative default rate experienced by comparably rated companies during the last two recessions.

[4] For a full discussion, see M. Zelmer, "Reforming the Credit-Rating Process," *Financial System Review* (Ottawa: Bank of Canada, December 2007): 51–57.

and credit standards declined to the now-infamous extreme of "Low doc/NINJA" (no income, job or assets) loans to U.S. subprime borrowers. Performance has deteriorated accordingly: for example, default rates for U.S. subprime mortgage loans made in 2006 have already reached almost 8 per cent less than two years after origination, a rate 2.5 times the comparable figure for similar loans made in 2004.[5]

There also appear to have been a number of problems with incentive alignment in several global financial institutions. These include mismatches between the timing of trader compensation and the realization of profits from their trades, an insufficient recognition and compensation of risk-management professionals, and provision of funding at risk-free rates to trading desks that placed risky bets. All of these factors encouraged excessive risk taking.

Finally, it appears possible that the incentives provided by a series of regulations may have encouraged crowded trades. The so-called "cliff risk" created by the mandated use of ratings is one example. A paradox of the current turbulence is that a desire to shelter in the perceived safety of AAA-rated assets led to a dangerous explosion in the supply of synthetically created AAA-rated assets. Since many of these assets were financed by excessive leverage and many participants were constrained by mandates to sell on downgrades, the rush to the exits has proven extremely destabilizing.

Next Steps for Policy-Makers

Before addressing specific responses in detail, I would like to make a couple of general points. The first is that, while the need to restore well-functioning markets is of paramount importance, the official sector can afford to take <u>some</u> time to ensure that the actions they take are appropriate. This is because many of the market practices that contributed to the dislocations have stopped. At present, many financial institutions are, at best, assuming limited access to market-based liquidity and, in the extreme, hoarding liquidity. It is an understatement to say that credit exposure is once again receiving active scrutiny. The demand for complex, opaque securities has dried up. With institutional memory longer than a few months, even in the financial sector, there is no need to rush to judgment or to impose hastily conceived measures.

The other point is that market participants have every reason to learn the lessons of these events and to change their behaviour as required. As I will discuss in a moment, there are some encouraging signs in this regard. That said, recent events have revealed serious and widespread shortcomings that, if not addressed promptly, completely, and credibly, will demand a more activist response on the part of regulators. The ultimate response will likely be a combination of improved private sector standards and more effective regulation.

With those general points in mind, I would like to describe the current responses to the three factors I just mentioned.

---

[5] Data supplied by Merrill Lynch U.S. See also J. Kiff and P. Mills, "Money for Nothing and Checks for Free: Recent Developments in U.S. Subprime Mortgage Markets" (Working Paper WP/07/188, International Monetary Fund, 2007).

First, in terms of liquidity, in many countries the official sector has been working to strengthen and modernize their liquidity arrangements where necessary. Since August, many central banks have provided liquidity to keep the financial system functioning, while not favouring any one market. In the case of the Bank of Canada, our provision of liquidity through standard operations has been effective in keeping the overnight interest rate close to our target. However, as in other countries, liquidity further out the maturity spectrum has been more problematic. While liquidity in term money markets in Canada is currently better than it was in December and better than that now experienced in other jurisdictions, it has not yet returned to historical norms.

There are a number of ways in which the Bank of Canada is seeking to improve its ability to provide liquidity to the system. First, the Bank has indicated that we plan to expand the list of collateral that we will accept in our Standing Liquidity Facility. Last week, we issued a consultation paper on our plans to take some types of ABCP as collateral by 31 March. We also plan to accept U.S. Treasuries as collateral by the middle of the year. Second, we are examining the types of term purchase and resale facilities that we should make available in times of financial instability or market failure. These facilities could be similar to the term purchase and resale agreements (or PRAs) that the Bank conducted in December and will be conducting again over the next few weeks. In both of these cases, announcements of these term PRAs were made as part of coordinated actions taken by major central banks to address liquidity pressures in funding markets. The G-10 central banks will continue to work together and will take appropriate steps to address these liquidity pressures. Finally, in its recent budget, the Federal government announced proposals to amend the Bank of Canada Act in order to modernize our authorities to support the stability of the financial system.

In parallel with these initiatives, liquidity management at financial institutions must also be improved. Reinvigorated institutional memory has reminded a broad range of institutions of the importance of liquidity management and credit discipline. It is worth noting that, a year ago, the Institute of International Finance published a thoughtful document that outlined potential vulnerabilities in the management of liquidity risk at financial institutions and suggested best practices in the private and official sectors.[6] However, as with so much in life, implementation is everything. Regulators are now developing new guidelines and increasing their focus on liquidity management to redress these shortcomings.

The second priority area for action is the need for improvements in both transparency and disclosure practices. Such improvements would help to reduce the information asymmetries that impede the smooth functioning of markets.

Globally, there is an urgent need for credible, timely disclosure. Recent reports from Canadian financial institutions have met this requirement. However, information alone is insufficient; investors also need to know how to interpret it. The combination of the relative novelty of fair value accounting and extremely volatile markets has made this

[6] Institute of International Finance, *Principles of Liquidity Risk Management* (Washington: Institute of International Finance, 2007).

interpretation more difficult. Some have questioned the utility of requiring mark-to-market valuations of all assets and liabilities on a corporate balance sheet.[7] The point can be made that, in the current circumstances, existing accounting rules provide a degree of precision that is not warranted.

By reflecting market moves, fair value accounting certainly increases the volatility of reported earnings. Whether it contributes pro-cyclically to market volatility depends on the behaviour of management. Management's incentive to realize mark-to-market losses depends not only on their expectations of future market moves but also, importantly, on the extent to which investors reward them for capping downside risk or penalize them for higher book leverage caused by unrealized losses. This depends, in part, on investors' interpretation of existing rules.

Investors should keep several factors in mind. First, in volatile markets, reported earnings will be volatile. Second, investors should distinguish between realized and unrealized losses. Third, securities may be marked-to-market using imperfect proxies, such as thinly traded derivative indices. As a consequence, investors should be wary of assigning unwarranted precision to such valuations. Fourth, for many complex securities, valuation might be better expressed as a range of outcomes. Since current accounting rules do not permit this, investors must use their judgment to construct valuation distributions. Institutions should provide the information necessary to facilitate such judgments.

From a medium-term perspective, the Financial Stability Forum is looking at accounting and valuation procedures for financial derivative instruments, particularly those for complex, narrowly traded products that become difficult to price in times of stress. More generally, authorities around the world are promoting prompt and full disclosure by financial institutions of losses and valuations of structured products, and are seeking to improve the understanding and disclosure of institutions' exposure to off-balance-sheet vehicles. Loss recognition by major financial institutions is proceeding much more rapidly than during previous periods of financial turmoil. This will ultimately speed the recovery process, provided that investors realize that the rules of the game <u>have</u> changed. Losses that would have been hidden in reserves in the past are now quickly, and sometimes imprecisely, in the open. Some of these losses will be revised later; thus, reported earnings may be more volatile than realized final results.

What can authorities do themselves to encourage greater transparency in structured products? First, as announced last week, the Bank's high disclosure standards for the ABCP that it will accept as collateral in its Standing Liquidity Facility may encourage market participants to raise their own standards. In the end, it will be their decision.

While issuers and arrangers have every incentive to improve the transparency of structured products, ultimately, disclosure guidelines are set – or not – by regulators. One lesson from the ABCP situation may be that blanket disclosure exemptions were too broad. At the same time, however, authorities should resist the temptation to bring forward overly prescriptive regulations. Rather, they should consider greater application

[7] For example, see B. Connolly, "Accounting for Depression." Banque AIG Research, 4 March 2008.

of principles-based regulation. There is no point in regulators trying to anticipate every new product or to restrain their development. There is a point in encouraging issuers to ensure the adequacy of their disclosure within a principles-based framework and to bear the consequences if it is subsequently found wanting.

As I commented earlier, the evolving role of rating agencies relates closely to issues of disclosure and transparency. Authorities are examining the role of credit-rating agencies in evaluating structured products and the impact of the mandated use of ratings due to investment guidelines or regulation. Going forward, securities regulators will want to see agency incentives aligned more closely with those of investors, and will ensure that agencies are quicker and more thorough in reviewing past ratings. Other regulators must also take responsibility for looking at the extent to which the mandated use of ratings has encouraged credit outsourcing, led to pro-cyclical price movements, and encouraged discontinuous crowded trades.

Since rating agencies rely on their reputations, they have powerful incentives to sharpen their practices, improve the information content of their ratings for complex financial instruments, ensure that all material facts are disclosed in a concise and timely manner, and address inherent conflicts of interest in the ratings process. Recent announcements by rating agencies in this regard are encouraging.

I should again stress that investors must not rely exclusively on changes in the rating methodologies of the agencies to repair deficiencies in their own risk-management practices. In a mark-to-market world, with leveraged, collateralized positions, investors need to make their own judgments about the creditworthiness, liquidity, and price volatility of the securities they own.

The third priority area for action concerns the proper alignment of incentives. The market dislocations have revealed some examples of serious principal-agent problems, most notably, within the originate-to-distribute model. For securitization markets to function well, the incentives of originators should be aligned with those of end investors. Indeed, originators and distributors are finding it difficult to sell products where they do not face first loss or otherwise retain exposure through reputational risk. I have little doubt that, over time, originators and distributors will adjust. Incentive alignment is a necessary but not sufficient condition to revive many structured-product markets. It will need to be accompanied by greater standardization, improved transparency, and the development of an appropriate investor base.

Another example of misaligned incentives can be seen in the risk-management practices and remuneration structures of financial institutions globally.[8] Many financial institutions have pay structures that reward short-term results and encourage potentially excessive risk taking. Investors should take the lead in demanding compensation structures that are more aligned with their interests. Others have suggested that the regulators themselves should make these determinations. While I think regulation of compensation within private institutions is entirely inappropriate, I do think that regulators need to consider

---

[8] M. Wolf, "Why regulators should intervene in bankers' pay," *Financial Times*, 16 January 2008, 11.

carefully the incentive impact of compensation arrangements as they assess the robustness of risk-management and internal control systems.

Regulation also creates incentives. The Financial Stability Forum is reviewing the basic supervisory principles of prudential oversight and the possibility that the incentives created by accounting standards and bank capital regulation are contributing to pro-cyclicality in the financial system.[9]

Conclusion

Let me conclude with some comments on the role of monetary policy. At a time of great uncertainty, it is more important than ever that monetary policy act as a stabilizing force. This underscores the importance of keeping inflation low, stable, and predictable. This means that the Bank will continue to watch developments in the real economy for their impact on inflation. Developments in the financial sector will be important from a monetary policy perspective only to the extent that they are expected to influence developments in the real economy and, therefore, inflation. I do not mean to downplay the current financial turbulence – it has clearly begun to affect the U.S. economy and, to a lesser extent, ours as well. At the Bank of Canada, we will continue to monitor these effects, while aiming neither to favour particular market segments nor to insulate market participants from the consequences of their decisions.

Those consequences will continue to reveal themselves in the weeks and months ahead. This will remain a difficult process. However, the responses that I have just outlined will help the market translate uncertainty into risk, and encourage the appropriate repricing of risk so that markets can ultimately return to more normal functioning. However, this will not mean a full return to the status quo ante. While risk will still be distributed, securitization will be increasingly transparent and standardized, and perhaps eventually exchange traded. First loss will likely remain, to some degree, with the originator. Liquidity and balance sheet strength will be more highly valued. Volatility will be less restrained by overconfidence. In short, we will see a world in which financial institutions with sound credit judgment, effective risk management, and patient capital can prosper; a world in which capital is allocated more efficiently; a world that rewards the traditional attributes of Canadian financial institutions.

I feel very positive about Canada's medium-term prospects in such a world.

---

[9] Both the Basel Committee on Banking Supervision and the International Organization of Securities Commissions are working in this area.