

THE PRICE OF. Uncertainty

Monetary policy meets turbulent times.

BY DAVID LONGWORTH

A NUMBER OF causes lie at the root of the current market turbulence. For a few years, desired world savings exceeded desired world investment and, as a result, long-term real interest rates decreased around the world. This prompted investors to search for yield, and they became willing to take on risk at lower premiums than they had demanded in the past. Part of this search for yield led to rapid growth in the demand for, and development of, more complex structured financial products, such as collateralized debt obligations (CDOs) backed by asset-backed securities or by other CDOs, and asset-backed commercial paper (ABCP) backed by CDOs, some of which (after 2000) were based on U.S. subprime mortgages.¹

These complex instruments were rated by credit-rating agencies using the same scale that they had used in the past for plain-vanilla corporate debt. Some sellers of these complex financial instruments emphasized that these products were highly rated—many were AAA—but placed little emphasis on their other features. A number of investors failed to perform their own research or due diligence and instead relied too much on credit ratings as a measure of the ultimate risk in holding these complex debt instruments. In doing so, they failed to take into account other risks such as liquidity risk. The complexity of these instruments frequently made them opaque, and too often investors put their money and confidence into investments that they did not fully understand.

At the same time, U.S. policy interest rates rose, and the basic loan quality of U.S. subprime mortgages

worsened through 2005 and 2006, although this worsening did not become broadly apparent until the first half of 2007. The belated realization by the rating agencies of the poor quality of these loans resulted in downgrades of structured products with exposure to subprime mortgages, often by multiple notches. These instruments were held by a variety of investment funds, including many sponsored by banks. Indeed, some products were directly held by banks themselves. Investors in Canada, as well as those in the U.S., soon came to realize that highly rated structured debt instruments could fall substantially in value and were subject to severe downgrades. As a result, they began to shun almost any type of structured product, partly because the complexity of such products made it difficult for many market participants to understand these instruments and, therefore, to accurately price the risk that these products posed to financial institutions. In Canada, this included instruments such as ABCP. Almost immediately, non-bank-sponsored ABCP stopped rolling over in Canada, which led to the standstill under the Montreal Accord.

As market players observed the downgrades of structured products based on U.S. subprime mortgages and the drying up of ABCP markets, two additional concerns emerged. First, there was a concern about the financial health of counterparties, particularly banks. Second, there was a concern that securitization would proceed at a much slower pace than in the past, thus requiring re-intermediation that would result in a more rapid expansion of bank balance sheets and an associated need for capital. These two concerns led to a significant increase in the interest rate spreads of bank debt over government benchmarks.

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WIDENING CREDIT SPREADS

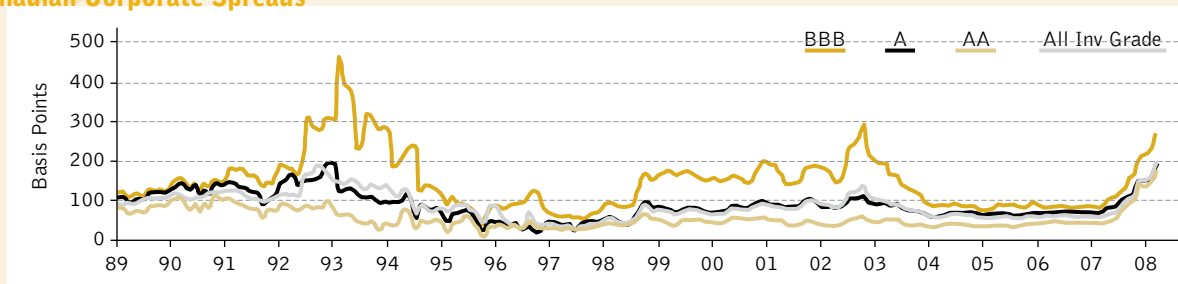
As time has passed, it has not been only bank credit spreads that have widened. We know from past experience that variations in credit spreads can be driven by several different factors. One basic component of credit spreads is expected loss from default, while a second relates to risk premiums, of which there are two main types: a credit-risk premium and an illiquidity premium.² The credit-risk premium is related to the variability of underlying expected loss, and both this premium and the expected loss from default itself are affected by changes in macroeconomic activity. The illiquidity premium relates to a lack of general market liquidity. The credit and illiquidity premiums, like other risk premiums, can vary with any change in the risk appetite of investors.

Now, let me look specifically at the Canadian situation. From early 2004 to mid-2007, spreads on Canadian corporate investment-grade and high-yield bonds were fairly stable and narrow relative to historical norms, as

were those in most other industrialized countries (Figure 1. But these spreads began to widen last summer as the crisis in the subprime-mortgage market started to take hold. Some of this widening can be explained by rising concerns about Canada's economic outlook due to the impact here of a possible recession in the United States. However, credit spreads—while not all at historic peaks—are now far wider than one would have predicted, based on past experience with economic downturns, and given the fact that Canada's economy is in a healthier position than the U.S. economy. (Figure 2 shows spreads on investment-grade bonds in both Canada and the United States.)

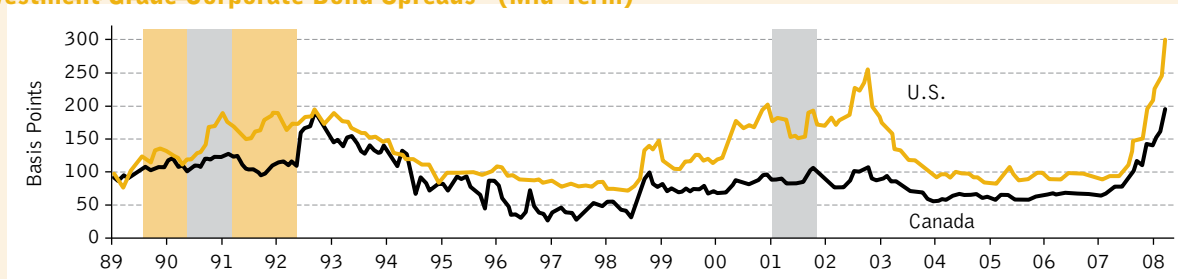
One partial explanation for the current wide credit spreads—globally, not just in Canada—relates to an unusual rise in factors not related to credit risk, such as the systemic drying up of market liquidity for debt issued by corporations, particularly for debt issued by investment-grade companies like financial institutions. Another partial explanation is that the current wide credit spreads are being driven by what appears to be excessive pessimism

FIGURE 1
Canadian Corporate Spreads*



*1989-1996: Scotia Capital corporate bonds yields minus mid-term GoC yields.
1997-2008: Merrill Lynch option-adjusted spread.

FIGURE 2
Investment Grade Corporate Bond Spreads* (Mid-Term)



*1989-1996: Canada-Scotia Capital investment-grade index minus mid-term government yield, U.S.-Merrill Lynch investment-grade index minus Merrill Lynch government bond index.
1997-2008: Merrill Lynch investment-grade option-adjusted spreads. Grey shading: Canadian recessions; green shading: U.S. recessions.

about expected default rates. We can see evidence of this in the very high cost of default protection in many markets, despite some improvement recently.³ (Figure 3 shows the evolution of credit default spreads in North America and Europe, for both investment-grade and “crossover” companies, that is, those with lower-quality but still investment-grade ratings or slightly below.)

PRICING UNCERTAINTY

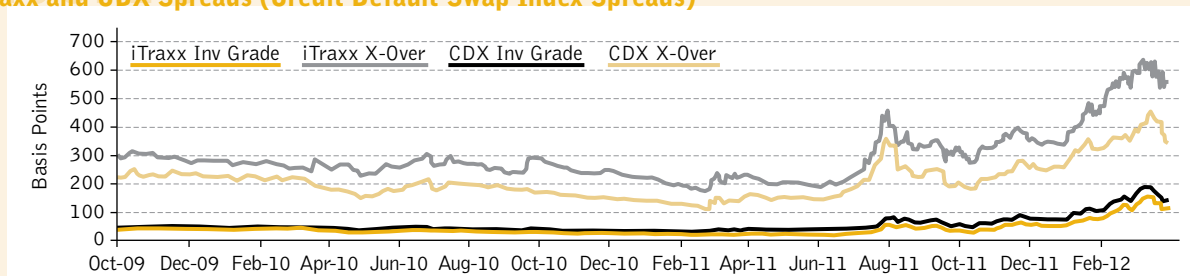
As we work to better understand the forces behind these particularly wide credit spreads, we do realize that as difficult as it can be to price risk, the current situation demonstrates how much more difficult it is to price uncertainty.⁴ Market participants are facing issues and questions that are unfamiliar and that cannot be easily answered, which is creating this uncertainty. The first source of this uncertainty is the unique nature of the U.S. experience with the kind of housing crisis that the U.S. economy is facing. This is the first time in more than a half-century that we have seen such a fall in nominal U.S. house prices.

A second source of uncertainty in markets relates to questions about the solvency of financial institutions. When market participants lose confidence in their ability to assess the solvency of their counterparties, which are often other financial institutions, they become reluctant to lend to one another. In the current example, when firms did agree to

loan to each other, they often demanded unusually high short-term interest rates, which contributed to the wide credit spreads that we have been witnessing. We saw a powerful example of this uncertainty play out in the situation involving Bear Stearns. The positive news is that financial institutions have revealed more of their losses and exposures, and have taken steps to rebuild capital. These actions have tended to settle markets. As I alluded to earlier, market uncertainty has been global in nature. Most industrialized countries have seen sharp and often unprecedented widening in the spreads between rates in short-term credit markets, such as the 3-month London Interbank Offered Rate (LIBOR) or Canadian Dollar Offered Rate (CDOR), and expected overnight interest rates. (Figure 4 shows how short-term spreads have widened significantly since last August. Canadian spreads are now significantly below their peaks, but remain elevated relative to historical norms.)

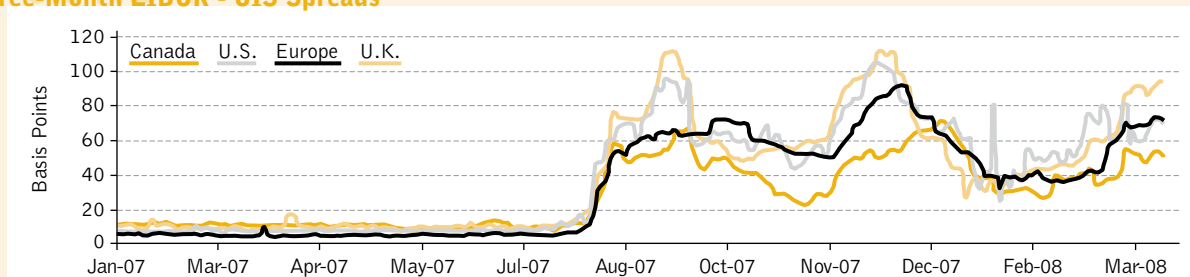
A third source of market uncertainty relates to the degree of de-leveraging of hedge funds, proprietary desks, and other highly leveraged institutions. With some prime brokers facing capital constraints and with the volatility of asset prices having risen, certain institutions—including hedge funds—are seeing their lines of credit cut and their margin requirements raised. This typically forces them to sell assets, which has exacerbated the illiquidity in markets, making it extremely difficult for market participants to

FIGURE 3
iTraxx and CDX Spreads (Credit Default Swap Index Spreads)



Traxx indices composed of entities domiciled in Europe, CDX indices composed of entities domiciled in North America. Crossover indices composed of entities with a BB/Ba rating from S&P, Moody's, and Fitch, or a combination of BB/Ba ratings and BBB/Baa ratings from the three agencies.

FIGURE 4
Three-Month LIBOR - OIS Spreads



U.S. & U.K. LIBOR, Canadian CDOR, and EURIBOR spreads over respective OIS rates.
LIBOR: London Interbank Offered Rate. EURIBOR: Euro Interbank Offered Rate. CDOR: Canadian Dollar Offered Rate. OIS: Overnight Index Swap Rate.

price these assets or, at times, to find a market for them. One might assume that this situation could create an excellent buying opportunity for sizable, unleveraged institutional investors, the so-called “real money funds.” Yet most have remained largely on the sidelines. They may be held back by the continued uncertainty, perhaps waiting to see if the market has further to fall, thus creating even better buying opportunities. Again, the increased provision of information by financial institutions on their losses and exposures should be very helpful in easing uncertainties.

rested with the so-called “originate and distribute” model in which mortgage originators, many of whom did not face the same regulations as banks, entered into mortgage contracts with homeowners, and then laid off these assets as they were securitized. In principle, there is nothing wrong with having a model based on “originate and distribute,” but in practice, a number of major things went wrong, as we saw in the recent U.S. example. For example, some originators did not have sufficient incentives to conduct appropriate credit checks on clients. Regulators in the U.S. and around

IN THE END, INVESTORS MUST ACCEPT RESPONSIBILITY FOR UNDERSTANDING AND MANAGING THE CREDIT RISK IN THEIR PORTFOLIOS.

FINANCIAL STABILITY POLICIES

We know that markets work best when relevant information is available to all. One result of the recent turmoil is that concerns have been raised regarding the transparency of complex financial instruments and the role of the information supplied by credit-rating agencies. In Canada, issues regarding the transparency of instruments have been most pronounced with respect to ABCP—particularly the non-bank-sponsored ABCP covered by the Montreal Accord. There has already been some movement towards greater transparency in the bank-sponsored segments of this market.⁵ But greater transparency of financial instruments isn't enough—investors also need to know how to interpret the information. Although credit-rating agencies have helped with interpretation in the past, they have recently come under scrutiny for their role in the financial market turbulence. However, because rating agencies rely on their reputations, they have strong incentives to improve the information content of their ratings for complex financial instruments, to ensure that all material facts are disclosed in a concise and timely manner, and to address inherent conflicts of interest in the ratings process. They have shown an ability and willingness to learn from their mistakes, and they are regularly refining their rating processes.⁶ This does not mean, though, that investors can rely exclusively on the judgment of others. In the end, investors must accept responsibility for understanding and managing the credit risk in their portfolios.

I'll turn now to some issues regarding financial institutions and their regulation. We can now see that one of the key problems with securitized U.S. subprime mortgages

the world are now closely examining this model in order to ensure that the right incentives for originators and distributors are in place and are appropriately aligned.

Risk management within banks themselves is also facing scrutiny. In many cases, their risk-management practices did not prepare banks for the recent market turbulence, and so these market practices need to be addressed. While the Basel Committee on Banking Supervision has devoted most of its time over the past several years to completing its work on capital adequacy, it is now devoting more time and resources to the analysis of risk-management processes in banks and to the principles of liquidity management for banks.⁷

CENTRAL BANKS REACT

Let me turn now to the financial stability policies of central banks. When there is a clear market failure and a major disruption to financial stability, a central bank—depending on circumstances—may wish to relieve liquidity pressures on the financial system by doing one or more of the following. It may choose to extend the maturity of its market operations; it may coordinate closely with other central banks when there is an international dimension to the problem; it may choose to widen the range of securities in its market operations or loan facilities; or, it may choose to increase the frequency of its market operations.⁸

We opted for the first three of these with the term purchase and resale operations announced on December 12 and March 11. Although we typically carry out purchase and resale operations with an overnight maturity, the two operations announced in March were for a much longer maturity (the two March operations

RISK MANAGEMENT WITHIN BANKS THEMSELVES IS ALSO FACING SCRUTINY.

were both for 28 days).⁹ Both of these announcements were coordinated with the actions of four other central banks and were supported by two other central banks. In all of these operations, the range of eligible securities was essentially the widest allowed under the Bank of Canada Act. Recently announced amendments, which will modernize the Act, would allow for a further widening in eligible instruments for such operations. As required by these proposed amendments, the Bank will publish its policy governing the use of these powers.¹⁰ The Bank will carefully consider the circumstances under which these powers would be used.

In terms of its lending operations, the Bank of Canada is not legally constrained by its Act in the type of financial instruments that it can accept as collateral under its Standing Liquidity Facility (SLF), a facility that can be used in both normal and in turbulent times. On March 31, we announced that, in the future, we will take ABCP securities that meet certain criteria—including transparency criteria—as collateral under our SLF. We had two broad policy objectives in making this announcement: first, that the eligibility criteria should mitigate any risks to the Bank

that might be associated with accepting ABCP securities as collateral for the SLF. And second, we stated that the eligibility criteria should facilitate the development of a well-functioning market for ABCP by promoting more transparency for investors and by encouraging an active secondary market for these securities. The Bank has also announced that it will take U.S. Treasuries as collateral under the SLF by mid-year.

In addition to the above, the Bank continues to work on examining policies related to the use of term operations and term lending facilities at times of major disruption to financial stability. This work is benefiting from the experiences and analysis of other central banks.

POLICY FOR TURBULENT TIMES

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 and requires us at the Bank to continue to watch developments in the real economy for their impact on inflation. We are certainly aware of the continuing developments in the financial sector.

FIGURE 5
Money Market Yields

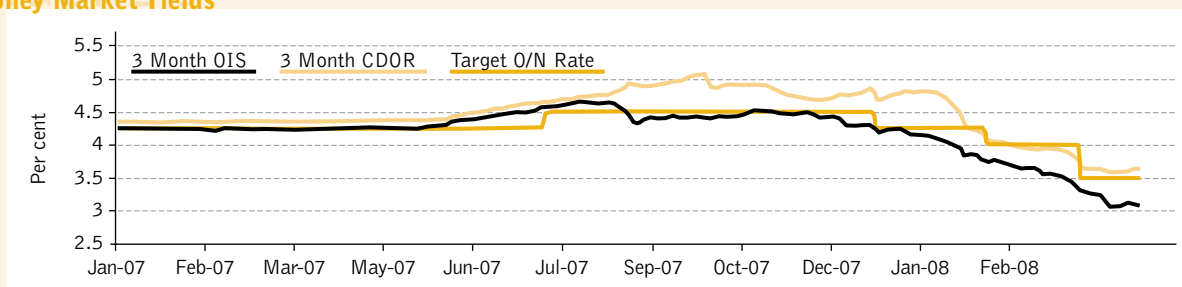
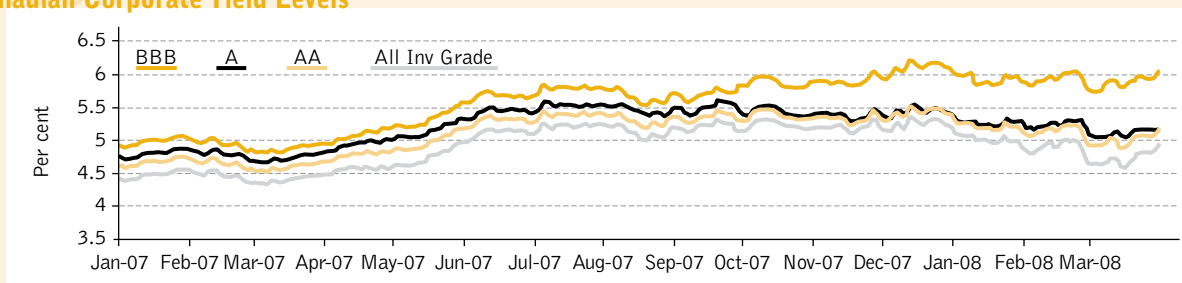


FIGURE 6
Canadian Corporate Yield Levels*



*Merrill Lynch corporate bond indices.

But from a monetary policy perspective, these are important 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 been a factor affecting the real economy in the United States and, to a lesser extent, in Canada 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.

AT A TIME OF GREAT UNCERTAINTY, IT IS MORE IMPORTANT THAN EVER THAT MONETARY POLICY ACT AS A STABILIZING FORCE.

In terms of the financial turbulence, credit spreads in particular—and the credit conditions faced by businesses and households more generally—have an influence on aggregate demand and thus, potentially, on inflation. This needs to be taken into account in setting policy interest rates. (Figures 5 and 6 give an indication of the cost, in level terms, of short- and long-term borrowing, respectively.) In our October *Monetary Policy Report*, we estimated that the tightening of credit conditions was worth about 25 basis points relative to our overnight interest rate target. Then, in the January *Update to the Report*, we noted that the tightening in credit conditions could be greater and more protracted than previously assumed. As well, we stated that there could be a more prolonged slowdown in the U.S. economy. Given the situation, we lowered our policy rate by 25 basis points. In our March 4 policy rate announcement, we indicated that deterioration in economic and financial conditions in the U.S. could be expected to have significant spillover effects on the global economy. We also said that those developments suggested that important downside risks to Canada's economic outlook, which were identified in the January *Update*, were materializing and, in some respects, intensifying. In response, we lowered our policy rate by 50 basis points to 3.50%, and said that further monetary stimulus is likely to be required in the near term to keep aggregate supply and demand in balance and to achieve the 2% inflation target over the medium term.¹¹

I've talked about some of the causes of, and the lessons learned from, the recent financial market turbulence. In particular, as I mentioned at the outset of

my remarks, we at the Bank of Canada are continuing our analysis of the unusually wide credit spreads that we've been seeing and what these mean for the stability of the financial system and, potentially, for the economy, inflation, and monetary policy. It's very clear that these unusual spreads, and the financial market upheaval that exacerbated these spreads, will continue to have an impact for some time to come. We do not know just when or how this turmoil will ultimately be resolved. You can be confident, however, that our focus at the Bank of Canada will remain on our core functions

of supporting financial stability, and maintaining consumer price inflation at our 2% target. In this way, we will continue to maintain an anchor for the economy through what will continue to be very interesting times. ■

ENDNOTES

1. For a further discussion of these financial market events, please see the most recent issue of the *Financial System Review* (Ottawa: Bank of Canada, December 2007).
2. T. Gravelle and A. Garcia, "Decomposing Canadian Corporate Spreads: What Are the Drivers of the Current Widening?" *Financial System Review* (Ottawa: Bank of Canada, forthcoming, June 2008).
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. The uncertainty we speak of is the so-called Knightian uncertainty, in which probabilities cannot be attached to individual events and, as such, risk (or the variance) cannot be measured.
5. For example, we have seen the adoption of global-style liquidity facilities; institutions seeking more than one credit rating; and the Bank of Canada announcing it will accept ABCP securities that meet certain criteria, including transparency criteria. The latter point is discussed later in this speech.
6. For a full discussion, see M. Zelmer, "Reforming the Credit-Rating Process," *Financial System Review* (Ottawa: Bank of Canada, December 2007): 51–57.
7. For a full discussion, see *Liquidity Risk: Management and Supervisory Challenges*, (Basel: Basel Committee on Banking Supervision, February 2008).
8. A central bank may also choose to increase the range of participants in its operations and facilities.
9. The Bank of Canada has offered term purchase and resale agreements for 28 days every two weeks since that time.
10. This policy would allow the Bank to widen the range of eligible instruments for its market operations. Furthermore, this widening could occur without necessarily invoking the pre-existing power to do so in circumstances where the Governor declares a situation of severe and unusual stress on a financial market or financial system.
11. Subsequent to the date of this address, the Bank of Canada lowered interest rates by 50 basis points on 22 April and issued its *Monetary Policy Report* (www.bank-banque-canada.ca) on 24 April.