Central Bank Collateral Policy: Insights from Recent Experience

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- *The collateral policy of central banks reflects two key objectives: to protect the central bank's balance sheet from financial losses arising from counterparty default, and to support the central bank's objectives for monetary policy and the financial system.*
- *Financial conditions may necessitate changes to central bank collateral policy. During the recent financial crisis, the temporary expansion of the range of acceptable collateral by central banks helped to support market and funding liquidity.*
- *The unique position of central banks in the financial system provides them with an opportunity to use their collateral policy to encourage better risk-management practices, including those related to the transparency of securitized products and the management of credit risk and market risk.*

One of the salient features of the recent financial crisis was the drastic reduction in market and funding liquidity in core markets.[1] The ability to trade financial asset positions of reasonable size with little price impact (market liquidity) and the ability of solvent institutions to readily obtain immediate means of payment to meet liabilities coming due (funding liquidity) are essential for a safe and efficient financial system. The reduction in liquidity therefore threatened the stability of the financial system and reduced the effectiveness of the instruments that central banks traditionally use to conduct monetary policy (Cecchetti 2008). Major central banks acted to bolster liquidity and alleviate funding pressures, and their collateral policy played a critical role.[2] Central banks not only increased the amount of liquidity offered to the financial system,[3] but also expanded the list of collateral that would be accepted in exchange for central bank liquidity. This helped to counter the effects of the aggregate liquidity shock and eventually helped money and credit markets to function more normally.

This article examines central bank collateral policy and draws insights from the experience gained during the recent crisis. In formulating its collateral policy, a central bank is motivated not only by the traditional objective of protecting its balance sheet from financial losses, but also by its goals for monetary policy and the financial system. Balancing these objectives depends on the external environment; i.e., collateral

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1 A core funding market is one that (i) is an important source of funding for the institutions, market-makers, and governments at the centre of the financial system; (ii) constitutes a funding source for which there is no immediate substitute; and (iii) could channel significant contagion should it cease to function properly. See Fontaine, Selody and Wilkins (2009) and Carney (2008).

2 See Zorn, Wilkins and Engert (2009) for a full description of the extraordinary measures taken by the Bank of Canada over 2007–09 in response to the financial crisis.

3 See the article by Lavoie, Sebastian and Traclet on page 27.

policy may need to differ in ordinary versus extraordinary times. Central banks can also use their collateral policy to positively influence financial market practices, thereby contributing to monetary stability and the efficiency and stability of the financial system. We discuss three important areas in which central banks can contribute to global initiatives aimed at improving the risk-management practices of financial system participants: promoting greater transparency for securitized products; improving the practices related to managing credit risk; and reducing procyclicality in the management of market risk.

What Is Collateral Policy?

Collateral generally refers to assets pledged as security against loans. For the Bank of Canada this includes liquidity loans provided under the Standing Liquidity Facility (SLF) to support intra-day payments in and settlement of the Large Value Transfer System (LVTS),[4] as well as extraordinary lending that might be conducted during crisis periods.[5]

A central bank designs its collateral policy not only to manage its own risks, but also in consideration of the broader impacts on the financial system

Collateral policy is the set of principles and rules governing the valuation, risk assessment, and acceptance of assets as security for lending transactions. It includes eligibility criteria for the types of assets that can be pledged, measures to control risk, and how the rules themselves may be changed in certain circumstances. Collateral policy affects individual transactions among financial institutions and, thus, can have an impact on the entire financial system: collateral helps to limit a lender's losses in the event of a counterparty default; at a macro level, the collective results of individual collateral arrangements can affect the degree of overall market and funding liquidity. Understanding this, a central bank designs its collateral policy not only to manage its own risks, but also in consideration of the broader impacts on the financial system.

4 The LVTS is Canada's large-value payments system.

5 This definition of collateral excludes securities that are eligible for repo operations, although the term is often used in this context.

Designing Collateral Policy

Central bank collateral policy can have more than one objective. First, as a public institution its collateral policy should preserve the value of the central bank's financial assets. Second, it should support the central bank's monetary policy and financial system responsibilities. Central bank collateral policy directly affects liquidity in core funding markets and can indirectly influence the relative pricing of credit risk and the level of credit intermediation in the economy. It can also affect money market dynamics and, therefore, the monetary policy transmission mechanism. Consequently, in setting its collateral policy, the central bank considers the requirements for well-functioning markets, which in turn, support financial system stability and efficiency and the implementation of monetary policy.

The first objective is supported by reducing the probability of losses on the central bank's collateral—minimizing the risk of counterparty default, as well as minimizing losses arising from the market risk associated with the collateral pledged. The central bank deals only with selected, creditworthy counterparties and accepts only high-quality collateral in which it obtains a valid first-priority security interest. To control the risks inherent in the collateral itself, terms and conditions for accepting collateral are established, including applicable limits and haircuts.[6]

In jurisdictions with well-developed financial markets, the central bank supports the second objective in accordance with the state of the financial system. In normal times, the central bank can promote financial system stability and efficiency in a market-neutral manner; i.e., there is no need or desire on the part of the central bank to interfere with market forces. But recent experience has demonstrated that the central bank may need to intervene during crisis periods, particularly those characterized by sharp, system-wide reductions in market and funding liquidity.[7] In such exceptional times, the central bank may use elements of its collateral policy to counteract the negative effects that arise when market participants act to protect their own financial interests without considering or realizing the impact of their actions on

6 Margins are the amount of collateral that must be deposited to cover the credit risk borne by the lender. The haircut determines the valuation of any asset pledged as collateral and is the discount applied to the current market value of the asset to reflect the uncertainty in its future value should the collateral need to be liquidated.

7 Central bank engagement may also be desirable when markets are developing and have not reached a level of maturity sufficient to allocate resources efficiently.

risk to the system as a whole.[8] This effect may be small and is especially difficult to identify in normal times, because there are many participants, each acting differently and each action having only a small impact on aggregate risk. Under extraordinary circumstances, such as systemic shocks, however, market participants act in a more homogeneous manner, and the combined negative impact of their individual actions may be significant.

A central bank's collateral policy and related practices should be set out in a clear, principles-based framework that allows some flexibility to address extraordinary circumstances

To facilitate the central bank's ability to intervene when needed, its collateral policy and related practices should be set out in a clear, principles-based framework that allows some flexibility to address extraordinary circumstances.[9] In particular, the operational framework supporting the collateral policy should include risk-management and valuation methods that can accommodate new and/or complex assets. By temporarily accepting riskier collateral under an appropriate risk-mitigation strategy, the central bank can address any shortage of highest-quality collateral and liquidity, thus helping to offset distortions in financial markets and re-establish market functioning.

Changes to Central Bank Collateral Policy during the Crisis

During the recent financial crisis, market participants tightened the terms and conditions attached to secured lending transactions by restricting eligible collateral and increasing haircuts. In aggregate, these actions reduced funding and market liquidity and intensified market volatility. One way in which central banks responded was by expanding the list of assets acceptable as collateral so that counterparties had greater flexibility in accessing central bank funds. In order to address heightened pressures in short-term funding markets, the Bank of Canada accelerated its decision-making process in the early stages of the crisis, so that U.S. Treasury securities and certain asset-backed commercial paper (ABCP) were added more quickly to the list of assets permanently eligible as collateral under the SLF.[10] As the risk aversion of investors towards securitized products increased during the crisis, sponsoring banks were forced to take these securities back onto their balance sheets.[11] To provide greater flexibility in managing collateral and to support efforts to generate liquidity, the Bank of Canada temporarily allowed sponsoring banks to pledge their own ABCP and applied a higher haircut.

During the crisis, the Bank of Canada also began to accept assignment of the non-mortgage loan portfolio (NMLP) of banks as collateral.[12] Direct participants in the LVTS were able to substitute their NMLP in place of securities to cover their collateral requirements for the LVTS, the SLF, and the Term Loan Facility.[13] The Bank was willing to accept a pool of non-marketable, illiquid assets as collateral on a temporary basis, so that LVTS participants could use their conventional, liquid collateral elsewhere.[14] As funding conditions normalized, the eligible amount of the NMLP was gradually reduced. To support efficiency, the Bank maintained limited, permanent use of the NMLP as collateral and allows temporary lifting of the limit in extraordinary circumstances in order to accommodate extremely large payment flows (Bank of Canada 2009).[15]

Although a flexible collateral policy can help the central bank to achieve its policy goals, this flexibility is accompanied by the risk of moral hazard; i.e., the expectation that the central bank will act in a similar fashion in the future may encourage more risk taking. More generally, the perception could prevail that

8 It is perfectly rational for a market participant to act in its own best interest, rather than contribute to the broader good at its own expense.

9 Engert, Selody and Wilkins (2008) outline principles for central bank intervention in response to financial market turmoil.

10 ABCP had previously been eligible as collateral under a temporary liquidity facility established to support potential challenges arising from the year-2000 rollover (Bank of Canada 1999). The Bank was aware that acceptance of these securities would send an important signal to the market and, in turn, help to support the longer-term viability of the Canadian ABCP market.

11 The sponsoring bank, while not the legal issuer, typically supports the promotion, marketing and distribution of the securities, in addition to providing administrative services, liquidity support and/or credit support.

12 The NMLP had also been eligible as collateral under the temporary year-2000 liquidity facility.

13 Details on the Term Loan Facility can be found on the Bank of Canada website at <http://www.bankofcanada.ca>.

14 Risk was mitigated by limiting the collateral value of the NMLP to 60 per cent of the loan portfolio's value, although, in practice, collateral needs were only a fraction of this amount. There was also a reasonable assurance of quality, given that pledging institutions were regulated by the Office of the Superintendent of Financial Institutions, with which the Bank of Canada has a close, formal relationship for the purposes of exchanging information relevant to the financial system.

15 As of 1 April 2010, LVTS participants may use their NMLP for up to 20 per cent of their total collateral value.

central bank liquidity is a readily available substitute for market funding. Central banks need to emphasize that extraordinary actions are temporary and situation specific. They must underscore the uncertainty surrounding such events and that the central bank's response to them is not guaranteed. Consequently, individual system participants should guard against the risk that they may suffer a loss if they inappropriately incorporate an implicit guarantee of central bank intervention (Selody and Wilkins 2010). Clear communication of the principles for intervention can help in this regard.

Central banks can also reduce the need to intervene in financial markets by encouraging individual actors in the financial system to be sufficiently resilient to shocks.[16] Encouraging the adoption of appropriate financial market practices is one way of achieving this.

Promoting Appropriate Market Practices

The Bank of Canada has always had an interest in the development of well-functioning financial markets that support the stability and efficiency of the financial system and, at various times, the Bank has taken an active role in improving market dynamics and practices.[17] Since the financial crisis, efforts have focused on behaviour that strengthens the financial system and prevents future crises. At the same time, the Bank of Canada and its peers have recognized that their unique role in the financial system provides them with the opportunity of using collateral policy to promote positive change.

Central bank liquidity is an important facet of the day-to-day functioning of the financial system, and private sector practices can be influenced by dealings with a central bank. Given the increasing importance of collateral-based financing, the central bank can shape its collateral policy so that its counterparties, and by extension the broader marketplace, are encouraged to adopt appropriate practices in investment and collateral management, thereby contributing to well-functioning financial markets and a more stable and efficient financial system. Although central banks generally rely on market forces to set market standards, the incentives of the private sector are not always geared to developing or adopting best practices in a timely manner for the benefit of all. At such times, it may be beneficial for central banks to model appropriate practices. This has become evident in three areas: transparency for securitized products, the management of credit risk, and the management of market risk.

The central bank can shape its collateral policy to encourage appropriate practices in investment and collateral management, thereby contributing to a more stable and efficient financial system

Transparency for securitized products

The availability of relevant and timely investment information should benefit the quality of investor decision making and make it easier for investors to enforce market discipline, thereby improving overall market stability and efficiency. One of the many factors contributing to the recent crisis was an inadequate understanding of risks, combined with too little due diligence by investors. This was particularly evident with respect to securitized products, for which sufficient information was not readily available (Hendry, Lavoie and Wilkins 2010). Recognizing this shortcoming, the G-20 committed to improving the transparency of these products, and regulators, as well as industry groups, have advanced a number of supporting initiatives.

In December 2007, the Bank of Canada announced that it would develop eligibility requirements for accepting ABCP as collateral for the SLF that would include higher standards for disclosure (Bank of Canada 2008). This announcement indicated the Bank's intention to contribute to a broader objective of greater transparency for securitized products. The announcement not only signalled the Bank of Canada's view that securitization is important because it supports the allocation of credit, but also that flaws in the structure of securitized products and deficiencies in the disclosure of information were of concern. The Canadian ABCP market was hit during

16 Many reforms currently under way are aimed at reducing the likelihood that central bank intervention will be required in the future. These include reforms aimed at increasing the amount and quality of capital and liquid assets held by financial institutions, as well as greater use of central counterparties in repo markets.

17 For example, during the 1950s and 1960s, the Bank of Canada's market operations were designed to encourage the development of a Canadian money market; in the 1990s, the Bank worked with the financial industry to develop a code of conduct for the Government of Canada securities market; the Bank continues to be an active member of the Canadian Foreign Exchange Committee (CFEC), which aims to establish practices and procedures for the foreign exchange market.

the first wave of the crisis, and a poor understanding of the risks associated with ABCP investments contributed to the situation. When the terms and conditions for acceptance of ABCP as collateral were finally announced in March 2008, a large component was related to information disclosure.[18] Other stakeholders in the Canadian ABCP market have endeavoured to improve the availability of relevant investment information.[19]

On an international basis, other central banks have contributed to enhanced transparency for securitized products through adjustments to their collateral policies. For example, in September 2008, the European Central Bank (ECB) refined its eligibility requirements for asset-backed securities (ABS) accepted as collateral in Eurosystem credit operations, specifying important investment details to be included in a publicly available credit-rating report.[20] More recently, in December 2010, the ECB announced its intention to introduce loan-by-loan information requirements and to actively encourage a data-handling infrastructure to ensure that data are made available to market participants (ECB 2010). In November 2010, the Bank of England also set out details and implementation timelines for new transparency criteria for ABS and covered bonds accepted as collateral for the central bank's liquidity facilities.[21]

Transparency initiatives for securitized products involve co-operation among market participants, industry groups, regulators and central banks and are ongoing as part of a broader set of initiatives geared towards strengthening this market.[22] Nevertheless, there is still a question as to how the transparency requirements of central banks should complement those of regulators. At the request of the Financial Stability Board (FSB) and the G-20, regulators are reviewing the need for rule changes related to disclosure for securitized products, but to date, there does not appear to be a common approach between central banks and regulators.[23]

Managing credit risk

Understanding and evaluating the credit (or default)-risk characteristics of assets accepted as collateral is an important component of risk management, and various tools are available. Credit-rating agencies (CRAs) provide an accessible, alternative source of opinion on credit risk, particularly if a market participant is unable to perform a complete, independent assessment. But lax credit-risk management and mechanistic reliance on CRA ratings can be problematic for individual market participants and for the financial system. The recent crisis demonstrated how unforeseen and abrupt credit-rating downgrades can inadvertently increase financial system instability by triggering large-scale sell-offs and knock-on effects that exaggerate negative market impacts.[24]

This experience confirmed the need for credit-risk-management practices to evolve so that the limitations of CRA ratings are understood and other information is used to form a full, independent assessment of credit risk. Action is required from both the public and private sector to reduce incentives for the mechanistic use of CRA ratings.

In October 2010, the FSB published a number of high-level principles to guide the public and private sectors in reducing their reliance on CRA ratings when making investment decisions and when developing standards, laws and regulations (FSB 2010). The principles make specific reference to central bank collateral requirements. Central banks are encouraged to make their own judgments related to the credit risk of the financial instruments that they accept and to avoid mechanistic use of CRA ratings in their collateral policies.[25] The principles do recognize that central banks can use CRA ratings as one of a set of tools used to make such judgments, however. Indeed, if the central bank relied solely on its own judgment of credit risk, private sector behaviour could be influenced by its decisions. By using a broad array

18 The Bank's transparency requirements for ABCP specify: a single, concise document provided by and validated by the sponsor, containing all relevant investment information; that is accessible to all investors; and timely notice of changes to the information contained in this document. Although the Bank provides guidelines on the information that it considers relevant, the onus is placed on the sponsor to determine what information is important for investors.

19 For example, Dominion Bond Rating Service (DBRS) now publishes enhanced "Structured Finance Surveillance Reports" that allow for more thorough analyses of certain asset classes.

20 The initial report must include a comprehensive analysis of structural and legal aspects, a detailed analysis of the collateral pool, analysis of transaction participants, and any other particulars relevant to the transaction. Key transaction data and performance data are to be included in quarterly publications of ratings reviews.

21 Although primarily aimed at improving the efficiency of its risk management of ABS, the Bank of England has indicated that increased disclosure requirements will advance progress in market-wide transparency (Bank of England 2010a and 2010b).

22 See Allan and Bergevin (2010), IMF (2009), Paligorova (2009), Selody and Woodman (2009) for more on the reform of securitization markets.

23 On 25 March 2011, the Canadian Securities Administrators (CSA) published for comment proposed enhancements to transparency and disclosure requirements for securitized products. The CSA indicated that the proposed requirements were designed to be consistent with international developments.

24 The IMF has discussed the inadvertent contribution of rating agencies to financial instability, both before and after the crisis; e.g., IMF (2008, 2009) and Kiff (2010).

25 As stated in its collateral policy, the Bank of Canada retains the right of refusal for any asset presented as collateral, allowing for other relevant factors, in addition to CRA ratings, to be included in its judgment of acceptability.

of information to establish creditworthiness, the central bank could prompt its counterparties to also look beyond CRA ratings in making investment and collateral decisions.

The Bank of Canada has made several adjustments to its collateral policy in order to better manage credit risk and to promote more prudent practices. When it first accepted ABCP as collateral in 2008, the Bank applied "stand-alone," versus official, credit ratings as part of its credit-risk assessment of the bank sponsors of ABCP.[26] The Bank also instituted the requirement of at least two credit ratings to establish creditworthiness. In September 2010, this requirement was extended to all non-sovereign securities. Having more than one CRA rating provides the Bank and its counterparties with greater assurance that all the factors contributing to credit risk have been identified and evaluated. In addition, the second-highest credit rating is now used to establish eligibility, as well as to determine applicable haircuts. This approach limits incentives for issuers to shop around for the best rating, and the Bank avoids being seen as overly conservative or overly lenient when interpreting conflicting ratings.

Other information may be employed when assessing credit risk, including market-based measures.[27] Research at the Bank of Canada is examining the value of indexes for credit default swaps and data on expected default frequency as supplementary information on credit risk.[28] Many central banks supplement the requirement of a minimum CRA rating with market information and/or engage in full internal assessments of credit risk. Practices have evolved since the crisis and will likely continue to evolve in the coming years.

Managing market risk

Fluctuations in asset prices present the risk that an asset held as collateral will decline in value and that losses will be incurred in the event that a counterparty default forces the sale of that collateral. The application of haircuts is an important element in managing this market risk.

The financial crisis exposed practices for managing market risk that negatively affected market dynamics and magnified the fluctuations in business cycles; i.e., procyclical practices. At the heart of these problems was the inherently procyclical nature of margining and haircut conventions.[29] In recognition of this phenomenon, policy-makers are considering measures to reduce the procyclicality caused by margining practices. These measures aim to dampen the buildup of leverage in good times and soften the systemic impact of subsequent deleveraging during downturns.[30]

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Against this backdrop, the Bank of Canada continuously reviews its own approach to setting haircuts to ensure that its practices do not contribute to excessive procyclicality and to better identify the central bank's role in preventing and resolving liquidity-induced crises. As a starting point, during periods of extraordinary financial system stress the central bank should place greater emphasis on its financial stability objective, avoiding any actions that could negatively reinforce funding-liquidity dynamics. This implies maintaining haircuts such that they are constant "through-the-cycle" (TTC), rather than varying them in response to short-term changes in risk measures.

A TTC haircut would be based on a large sample of data that accounts for the risk-return characteristics of assets through a full price cycle that includes at least one crisis episode. Only periodic re-evaluation would be necessary to ensure that haircuts remain adequate in relation to the risk-tolerance level of the central bank. In a TTC approach, haircuts would not react to temporary spikes in liquidity premiums, but would reflect only fundamental credit and liquidity risks. However, decomposing a haircut into compensation for credit risk, liquidity risk and a liquidity premium is not an easy undertaking, and further study is

26 Stand-alone credit ratings are those that do not incorporate implicit third-party financial support from a government. See Harvey and Merkowsky (2008) for a discussion of stand-alone ratings.

27 For example, Moody's publishes Market-Implied Ratings that incorporate the market price of default risk over time.

28 See García and Prokopiw (2009) for discussion of credit-risk measures that may be useful for a central bank's assessment of aggregate credit conditions.

29 See Gorton and Metrick (2009), Kamhi (2009) and Krishnamurthy (2010) for a discussion of procyclical margining practices during the crisis.

30 See (CGFS 2010) for analysis of the linkages between margining and haircut practices and financial system procyclicality.

required.[31] The Bank of Canada has committed to a research agenda aimed at better understanding these issues.

As post-crisis analyses and reforms continue, central banks may be in a position to consider how they can contribute to better margining practices. As the ultimate providers of liquidity, there may be a need for central banks to adjust their own haircut frameworks in order to limit procyclical dynamics and to ensure that core funding markets remain continuously open during crisis periods.[32]

Lessons Learned

The financial system policy objectives of central banks gain attention during crisis periods, and central bank collateral policy can be used as part of the set of extraordinary measures taken by the public sector to stabilize the financial system. The central bank may need to accept riskier assets as collateral in the short term (applying appropriate risk controls), but the potential cost to the central bank is outweighed by the benefits to the financial system.

The preservation, on a limited scale, of certain collateral-specific measures introduced to address liquidity pressures during a crisis may also be justified. For example, the continued acceptance of a limited amount of non-conventional collateral during normal times can support the ability of market participants to manage their collateral, particularly in an environment where collateral-based financing is growing, and thus can promote well-functioning markets. It also supports the operational readiness of the central bank to address extraordinary events by increasing the eligible amount of non-conventional collateral.

This potential benefit must be balanced with consideration for limiting moral hazard, however. By clearly communicating the uncertainty surrounding any changes to its collateral policy as they are introduced during a crisis, and by reinforcing that extreme adjustments to that policy are specific to rare and temporary conditions, there is less likelihood that the central bank's counterparties will adversely change their behaviour.

At the same time, central bank collateral policy can help motivate positive changes to market behaviour, thus reducing the likelihood and intensity of a financial system shock in the future. Imposing transparency requirements for securitized products accepted as central bank collateral can encourage issuers to increase the quantity and quality of the information available to investors. Central banks can also help reduce mechanistic reliance on CRA ratings by ensuring that these are only part of a set of tools used to establish the creditworthiness of collateral for central bank facilities. To the extent that practices for managing market risk take their cue from central bank collateral policy, central banks may be able to reduce the extent of procyclical margining practices by adopting through-the-cycle haircuts.

Conclusions

The recent financial crisis was widespread and demanded a coordinated global response. As policies and practices evolve in the aftermath of the crisis, coordination on a global basis will also be important. The sharing of analysis and experience will be helpful as central banks consider how best to shape their collateral policies, and many issues could be explored. For example:

- The benefits of a flexible collateral policy were demonstrated during the crisis, but how flexible should collateral policies be? How much risk can or should a central bank take on? How can operational readiness to accommodate this flexibility be balanced with the costs, particularly when extraordinary events are, by definition, infrequent?
- To what extent should central bank collateral policy be used to motivate positive changes to market behaviour, and when should this be left to markets? Should central bank collateral policies be coordinated in order to limit the potential for arbitrage?

The Bank of Canada is open to engaging other central banks in examining these and other issues and will continue to review its collateral policy as one means of achieving its goals for monetary policy and the financial system.

31 Given these challenges, the approach to date has been to calculate haircuts using a long historical sample and to hold them constant over an extended period.

32 This idea was put forward by Governor Carney as one of many considerations for adjusting monetary policy implementation as a means of promoting financial stability (Carney 2009).

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