The Bank of Canada's Extraordinary Liquidity Policies and Moral Hazard

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Current Framework

In the June 2008 issue of the *Financial System Review*, the Bank of Canada published a report establishing a set of principles to guide the extraordinary liquidity interventions it was making in response to the systemic shocks buffeting the Canadian financial system (Engert, Selody, and Wilkins 2008). These principles provided a framework for maintaining consistency between the Bank's actions and its responsibilities as lender of last resort to the financial system, while allowing sufficient flexibility to respond to the unique challenges of the crisis. The principles were guided by the view that "a central bank should intervene only when there is a clear market failure and when significant financial instability can be avoided or mitigated without distorting the pricing of credit risk" (Engert, Selody, and Wilkins 2008, p. 76).

The following principles were established. First, intervention should be targeted, aimed at mitigating only market failures of system-wide importance and whose macroeconomic consequences can be rectified only by an injection of liquidity. Second, intervention should be graduated, in a manner commensurate with the severity of the problem. Third, intervention should be well designed, using the right tools for the job. Fourth, intervention should be at market-determined prices to minimize distortions and under conditions aligned with those in the market to limit the possibility of crowding out the return of markets. Finally, the Bank should mitigate the moral hazard that could result from its intervention.

In the autumn of 2009, the Bank assessed the success of these principles and whether they needed to be adjusted in light of the experience provided by the crisis (Zorn, Wilkins, and Engert 2009). The review established that the principles had provided a successful basis for developing and using new tools to deal with the financial crisis, as well as for using existing tools in new ways. The purpose of the current report is to show how the principles were used to guide the extraordinary liquidity interventions by the Bank in ways that mitigated moral hazard.[1]

The Framework for Extraordinary Liquidity Provision

The Bank's goal in providing extraordinary liquidity is to maintain the appropriate amount of liquidity in the financial system without distorting the economically efficient allocation of credit.[2] This type of distortion can occur when the Bank takes on liquidity risk that would otherwise be faced by market participants. Because extraordinary liquidity cannot always be provided without assuming some credit risk, and although the premium for this credit risk can be distorted by factors beyond the shortage of liquidity, it is possible for the Bank to assume credit risk at a yield below the fundamental value (i.e., the yield that would just compensate for expected losses based on the true probability of default).

The possibility of transferring risk to the central bank—at a yield below what would otherwise prevail—generates moral hazard because it reduces the incentive for financial entities to protect themselves against risky outcomes. There are two aspects to this potential for moral hazard. First, financial institutions may not hold sufficient liquid assets to protect against idiosyncratic shocks in the expectation that the central bank will provide inexpensive liquidity on demand. Second, the ready availability of inexpensive liquidity from the central bank may encourage financial institutions to take on excess risk, including duration mismatches and credit

1 See Longworth (2010) for an earlier discussion of this issue.

2 In a crisis, a central bank is especially concerned about funding liquidity and market liquidity.

risk. It is impossible to eliminate all moral hazard, because effective extraordinary intervention means that liquidity will be provided at a yield below what would prevail without the intervention. It is also impossible to rule out extraordinary interventions, since system participants cannot protect themselves against all types of shocks—specifically, systemic shocks that affect all system participants in a similar way. The central bank can, however, act to minimize moral hazard.

The Bank of Canada normally mitigates the moral hazard associated with its extraordinary interventions by lending to regulated, solvent institutions only when they can no longer obtain liquidity from other sources.[3] This borrowing comes with a penalty, not only because the Bank Rate is set above the overnight rate, but also because it invites a stronger degree of regulatory scrutiny of the institution's liquidity and risk-management practices. In an abnormal situation, where a large systemic event creates a widespread shortage of liquidity that disrupts a wide range of institutions and markets, distorting asset prices more generally, the Bank is most effective when it provides liquidity to a variety of institutions. Moral hazard is minimized by limiting such interventions to the shortest time period possible—specifically, to periods when the liquidity premium is significantly distorted across the system, leaving market participants fully exposed to risks associated with idiosyncratic shocks and small systemic shocks.[4] A credible commitment to intervene only in response to threatened or realized large systemic events is consistent with the Bank's objective of reducing the likelihood that core financial markets will freeze, while reinforcing incentives for private agents to self-insure against idiosyncratic and smaller systemic shocks.[5] Such a policy is consistent with the Bank's lender-of-last-resort responsibilities and contributes to the robustness and efficiency of the financial system.

In addition, when dealing with major systemic events, the Bank maintains a flexible intervention strategy that acknowledges the inherent uncertainty surrounding the timing and magnitude of systemic events. As a result, individual system participants are less able to transfer risk to the Bank at artificially low prices, and their incentives for aggressive risk-taking in advance of the Bank's intervention are reduced. The Bank further reduces incentives for aggressive risk-taking in the lead up to a large systemic shock by intervening at prices or with premiums that are not predictable. This obliges individual system participants to guard against the risk that they might suffer a loss despite the Bank's intervention. The Bank does this by using auctions to price and distribute the liquidity it injects into the system.

Finally, the Bank supports the development, implementation, and ongoing functioning of the core infrastructure for generating liquidity in the Canadian financial system. This includes promoting greater use of central clearing counterparties for core funding markets, such as repos, as well as other mechanisms that help market participants to self-insure against idiosyncratic liquidity shocks.

The prudential supervisor in Canada, the Office of the Superintendent of Financial Institutions (OSFI), can also help to reduce the moral hazard associated with crisis intervention by enforcing various regulations, including: (i) liquidity regulations that require financial institutions to maintain sufficient liquidity to deal with institution-specific shocks and most adverse market shocks;[6] (ii) capital regulations to ensure that risk is appropriately mitigated without imposing a cumbersome regulatory burden on financial institutions or generating additional moral hazard from "not allowed to fail" public policies;[7] and (iii) enforcement regulations to ensure that, when mitigation strategies fail, there are meaningful consequences for stakeholders who are responsible for mitigating risk.[8] Canada has clear and transparent resolution mechanisms for federally regulated, deposit-taking financial institutions, which are periodically reviewed and enhanced as needed.[9] For example, the Canada Deposit Insurance Corporation (CDIC) has long had powers to restructure and resolve troubled deposit-taking institutions.[10] The prudential supervisor could also implement a scheme for converting subordinated debt into equity, contingent on a credit-risk event that depletes capital by an unacceptable amount.[11] In addition, the "not allowed to fail" concept, which feeds moral hazard, can be mitigated by putting in place adequate powers and

3 See "Bank of Canada Lender-of-Last Resort Policies," in the December 2004 issue of the *Financial System Review* for more details.

4 The justification for having the central bank as the lender of last resort, capable of mitigating system-wide shocks, is that it can provide liquidity at zero resource cost, with widespread benefits. The justification for not having the central bank mitigate idiosyncratic shocks is that doing so would be inefficient, since the private sector is better placed to identify and design mechanisms to deal with such shocks, and the benefits accrue to specific stakeholders.

5 Allen, Carletti, and Gale (2009) show that market freezes are possible if there is sufficient uncertainty about the demand for aggregate liquidity relative to the idiosyncratic demand for liquidity.

6 The Basel Committee on Banking Supervision's press release of 17 December 2009 (BCBS 2009a) covers the introduction of "a global minimum liquidity standard for internationally active banks." See also Northcott and Zelmer (2009) and BCBS (2009b).

7 BCBS (2009a) covers "raising the quality, consistency and transparency of the capital base" and "strengthening the risk coverage of the capital framework."

8 The Financial Stability Board (FSB 2010) is working on "a package of measures to address the 'too big to fail' problems associated with systemically important financial institutions." Among the measures proposed is a plan for "improving the capacity to undertake an orderly resolution of a failing firm," including one that operates cross-border.

9 See OSFI (2008), "Guide to Intervention for Federally Regulated Deposit-Taking Institutions." Available at <http://www.osfi-bsif.gc.ca/osfi/index_e.aspx?DetailID=522>.

10 As well, in 1996, federal legislation was amended to give the Superintendent of Financial Institutions the authority to temporarily take control of an institution and, if necessary, request a winding-up order, subject to certain prescribed conditions and the approval of the Minister of Finance. In 2009, the CDIC was granted the authority to establish bridge banks to facilitate the restructuring of federally regulated deposit-taking institutions.

11 See J. Dickson, "Protecting banks is best done by market discipline," U.K. *Financial Times,* "Comment," 8 April 2010.

mechanisms to control institutions that are failing but whose stakeholders refuse to act in a timely manner because they do not sufficiently bear the consequences of their refusal.[12]

These policies will minimize moral hazard while retaining their efficacy because they confine Bank of Canada distortion-producing actions to short-lived extraordinary events. Further, while they do not insulate individual system participants from idiosyncratic liquidity risk, they insulate the system as a whole from aggregate liquidity risk. Finally, they make it difficult for individual system participants to determine in advance how to profit from Bank of Canada extraordinary liquidity interventions. However, once a crisis begins, the Bank should minimize uncertainty about its actions because such uncertainty could result in liquidity hoarding that propagates the shock and worsens the crisis.

Extraordinary liquidity facilities in normal times

Extraordinary liquidity facilities offered by the Bank in normal times are designed to prevent idiosyncratic shocks from becoming systemic events. To mitigate the moral hazard associated with these facilities, they are available only after other sources of funding have been exhausted.

The Bank of Canada offers two liquidity facilities in normal times. The Standing Liquidity Facility (SLF) is designed to deal with frictions that occur when direct clearers in the Large Value Transfer System (LVTS) face shortfalls in their end-of-day settlement balances.[13] The SLF provides overnight, collateralized loans at a penalty rate (i.e., at the Bank Rate, set above the overnight rate, which reflects the market rate for similar market funding). Emergency Lending Assistance (ELA) is used on rare occasions to provide temporary, collateralized loans to individual institutions that are solvent, but are facing serious and persistent liquidity problems. While usually priced at the Bank Rate (and thus not at a penalty rate, since these are term loans and the term premium is usually greater than the 25 basis points by which the Bank Rate exceeds the overnight rate), interventions from the ELA invite stronger scrutiny and may result in stigma, as they confirm to market participants that the borrowing institution does not have ready access to alternative sources of funds.

Extraordinary liquidity facilities in times of crisis

A common characteristic of a financial crisis is a generalized shortage of liquidity. The Bank's extraordinary liquidity facilities are thus designed to kick-start the endogenous liquidity-generation mechanisms at the core of the financial system. During a crisis, the Bank needs a range of facilities to reflect the diversity of the liquidity-generating mechanisms in the financial system. Since liquidity premiums rise in a crisis because of the shortage of liquidity, the Bank provides liquidity at premiums below those prevailing in the market.

The primary facilities used during the recent crisis—term purchase and resale agreements (PRAs) and the Term Loan Facility (TLF)—will continue to be a part of the Bank's toolkit, to be used only as necessary in major systemic events. These tools have proven to be effective in getting liquidity to core funding markets (see Fontaine, Selody, and Wilkins 2009, for a description of core funding markets). For example, term PRA provides funding liquidity to participants in core financial markets (Zorn, Wilkins, and Engert 2009), while the TLF is a backstop source of collateralized loans for LVTS participants. Both of these facilities are designed to offer the flexibility necessary for a graduated approach to liquidity provision in a crisis. For example, it is possible to alter the number of eligible participants, the tenor of the operation, the list of eligible securities, or the pricing mechanism to respond to the unique features of a crisis and then to exit from the intervention.

The Bank of Canada has the legal authority to implement facilities other than the ones used to date; thus, the appropriate tools can be designed to meet the particular features of any future crisis events. For instance, in a crisis where there was a shortage of good-quality collateral, the Bank could also consider a securities-lending program that would exchange highly desirable collateral for less-desirable collateral, at the appropriate price and for terms longer than one day, to support the functioning of core funding markets. Because the infrastructure of core markets is evolving in the wake of the crisis (e.g., by implementing central clearing counterparties), the development of tools to address liquidity issues will be ongoing.

Conclusion

It is important that financial system participants do not believe that Bank of Canada intervention in times of crisis implies a willingness to intervene in normal times. The Bank retains considerable flexibility as to when and how it will intervene to fulfill its mandate as liquidity lender of last resort to the financial system in the event of a systemic shock. This means using its tools in a principled way, as it did in the most recent crisis.

12 Ben Bernanke (2008) has suggested that the absence of well-defined procedures and authorities to deal with the potential failure of a systemically important non-bank financial institution represented a serious weakness in U.S. financial regulation.

13 For more details, see "A Primer on Canada's Large Value Transfer System," at <http://bankofcanada.ca/en/financial/lvts_neville.pdf>.

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