

Introduction

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The Bank of Canada hosted its 12th annual economic conference in Ottawa on 4 and 5 December 2003. Representatives from various public and private organizations joined Bank of Canada staff to discuss three key issues affecting the financial system: financial contagion, implications of bank diversification, and financial sector regulation. This introduction presents highlights of the papers, as well as of the discussions around these presentations. The views of the conference panellists, who closed the conference with their perspectives on the papers and the discussions, are also summarized. We conclude with key lessons for policy and directions for future research.

Session 1: Contagion

The Bank of Canada works to promote a sound and stable financial system, one in which problems in one part do not trigger instability elsewhere. Financial markets and financial infrastructure arrangements are becoming increasingly interrelated and globalized. It is therefore important to understand the channels through which financial crises spread across institutions, sectors, and countries so that policy-makers can understand how to safeguard systems against contagion.

Three conference papers explored the nature of contagion. **Karine Gobert, Patrick González, Alexandra Lai, and Michel Poitevin** study the lending market under decentralized and centralized systems. They develop a model of a competitive interfirm lending market in which firms can borrow or lend. The authors identify a source of inefficiency in this market that may lead to financial fragility. For instance, a liquidity shock can have a persistent component and lead to firm failures that are inefficient. In this model, the

authorities can help to eliminate this inefficient equilibrium by ensuring that there is sufficient liquidity in the system.

The discussant, Douglas Gale, felt that this paper represents a good step towards building models that could be used to analyze the welfare implications of financial system policies. However, more real-world institutional features will need to be included in such models before that goal is achieved.

Reint Gropp and **Jukka Vesala** take this field of study a step further by using market-based indicators to determine the probability that a European bank faces financial difficulty, given that other European banks are also facing difficulty. They find significant evidence of contagion both domestically and across borders. This contagion appears to be typically generated by particularly concentrated interbank exposures. Their empirical model also indicates that larger banks are the main sources and the main victims of cross-border contagion. The discussant of this paper, Maral Kichian, underscored a caveat to these conclusions that the authors' approach is of the reduced-form type, which complicates the interpretation of their results. Nonetheless, their study provides a useful starting point for future research on this topic.

Eric Santor studies the extent to which Canadian banks have become globalized and how Canadian foreign-asset exposures have adjusted to crisis events. Using firm-level panel data from 1984 to 2003, the author finds that Canadian banks are very active globally, and that the composition of exposures has changed over the past two decades. In particular, Canadian banks now have lower foreign exposures in terms of deposits and loans but higher exposures in terms of foreign securities. Santor finds that banks do not adjust their portfolios of foreign securities immediately in the presence of a crisis, and that a banking crisis in one country does not appear to influence the decision of banks to continue doing business with countries that have similar characteristics to the country in crisis.

Session 2: Implications of Bank Diversification

Central banks rely on the financial system to transmit the effects of monetary policy actions to the real economy. For this reason, it is important to understand the implications of new business lines and changing strategies for pricing and diversifying risk. Two conference papers contributed to our understanding of the links between the changing behaviour of financial institutions and risk-return trade-offs. These papers suggest that diversification, encouraged to some extent by regulatory changes, has not always had beneficial implications for the risk-return trade-off.

Chris D'Souza and **Alexandra Lai** study how the efficiency of Canadian banks is affected by regional and industrial portfolio diversification, as well as by diversification in business lines and financing sources. They construct a measure of efficiency using a portfolio-allocation approach. The authors find that bank efficiency is increased by diversification of business lines and financing sources, reduced by regional diversification, and unaffected by industrial diversification. The discussant, Varouj Aivazian, found this approach to be an improvement over the existing literature, because it explicitly takes into account the risk-return trade-off facing banks and, hence, the overall welfare of banks and depositors. He also noted that, in future work, it may be useful to look at some of the model's assumptions, which appear to be overly simplistic. For example, the model does not explicitly account for informational frictions or for non-pecuniary elements in bank returns that are not captured in price and market-return data (e.g., credit rationing and the use of collateral).

In a related paper, **Kevin Stiroh** studies the implications for risk-adjusted profits of the shift in the activities of U.S. bank holding companies (BHCs) towards a wider range of financial services. This shift was encouraged by many factors, including regulatory changes, such as the Gramm-Leach-Bliley Act of 1999. The Act explicitly allowed BHCs and their subsidiaries to engage in a host of new activities, such as brokerage, portfolio advice, and underwriting. The author finds evidence of diversification benefits in terms of higher risk-adjusted profitability for BHCs that earn most of their revenue from net interest income. However, these gains are usually offset by the increased exposure to volatile non-interest activities. These results are based on a sample of over 1,800 BHCs over the 1977Q1–2002Q2 period.

These papers highlight the importance of studying diversification using measures that explicitly account for the risk-return trade-off. Christian Calmès, a conference discussant, pointed out that, if it is true that diversification does not always raise the risk-adjusted returns to banks, future work should concentrate on determining the reasons banks are not making more profitable portfolio choices. At the same time, discussion by conference participants revealed many deficiencies in the data used (e.g., short sample periods, combining book and market value data, the omission of activities such as off-balance-sheet activities), pointing to a major challenge for this type of analysis.

Session 3: Bank Capital Regulation

The Bank of Canada is very interested in how the regulatory environment, including the regulations themselves, supervision, or regulatory governance (the governance arrangements of the regulatory agencies themselves), can best promote macrofinancial stability. The regulatory environment is defined by the rules and incentives that influence the decisions of regulators, financial institutions, and non-financial actors. Getting the incentives right is important for sound economic performance, and these incentives must adapt to a changing financial landscape. Several aspects of this issue were addressed at the conference, including the relationship between governance and financial sector soundness, the theoretical basis of bank regulations for capital requirements, and the implications of bank capital requirements for the transmission of monetary policy.

Changes in capital requirements can, in principle, affect how banks price risk and change the cyclical properties of bank capital. **Skander Van den Heuvel** examines how capital-adequacy requirements alter the role of bank lending in the transmission of monetary policy. He constructs a dynamic model of bank asset and liability management that incorporates risk-based capital requirements. This model shows that monetary policy effects on bank lending depend on the capital adequacy of the banking sector and that shocks to bank profits can have a persistent effect on lending. Bank capital affects bank lending even when the regulatory constraints on bank capital are not binding. Given new capital requirements under Basel II and their potential to change the dynamics of bank capital, more research in the area of the interaction between bank capital standards and monetary policy is very important. The discussant, Césaire Meh, argued that it would be important to perform future research using general-equilibrium models.

Georges Dionne's analysis of the optimal design of regulation for the banking sector is based on an extensive review of the literature. He argues that bank regulation can be justified in principle by the possibility that bank runs could prevent banks from playing their crucial role as the main provider of liquidity to the economy. The author views deposit insurance as one type of regulation capable of mitigating that risk. That said, Dionne thinks that national authorities should continue to improve deposit insurance by better aligning its pricing with individual bank risk. Authorities should also explore the possibility of using other regulatory tools, such as subordinated debt, and should work on improving bank governance. With respect to minimum capital-adequacy requirements, Dionne argues that there is little evidence that this approach reduces bank risk and some evidence that it may be the source of costly distortions.

The discussant, Paul Beaudry, argued that Dionne's paper, and the literature in general, placed too much emphasis on bank runs as the main source of problems in the banking industry. He sees the main difficulty with the banking system as one of delegated monitoring (for instance, investors delegating the authority to banks to monitor business loans). This problem would exist even if bank runs were impossible.

John Kuszczak Memorial Lecture

Douglas Gale voices similar concerns about capital-adequacy requirements. He builds a simple model of an economy with a financial sector in which banks play a pivotal role. The main conclusion from this model is that imposing constraints on capital adequacy does not improve overall welfare. This is because market forces ensure that banks choose the right capital structure in equilibrium. Extensions of the basic model generate cases where the allocation of resources determined by the market is not necessarily optimal, but minimum capital requirements still do not seem to be welfare-improving. While this work raises important questions, the applicability of its findings for policy may be limited by the simplicity of the model. In particular, as discussant Vincenzo Quadrini noted, this model may not capture all of the relevant externalities associated with the functioning of financial markets.

Session 4: Financial Regulation

John Chant focuses on the governance of Canadian banks, investigating whether linkages between bank boards and the boards of non-financial corporations influence the pattern and performance of bank lending. Based on a preliminary exploration of Canadian data on bank loans, board linkages, and credit ratings over the 1996 to 1998 period, he reaches four main conclusions: (i) Canadian banks are more likely to lend to corporations with which they share board linkages than to corporations linked with other banks; (ii) the tendency to lend to linked corporations is stronger where the link involves a corporate officer than where it consists of shared directors; (iii) there is weak evidence that corporations that receive loans from banks linked by officers have a higher probability of experiencing a downgraded credit rating than corporate borrowers in general; and (iv) there is no evidence that the credit-rating experience of borrowers linked to the lending bank through directors differs from that of other borrowers. The author points out that more work is needed to test the robustness of these results, particularly given the short sample period used in the analysis. Future research could also focus on the factors that may be driving these results,

including the possibility that there may be informational advantages to banks from corporate links.

Udaibir Das, Marc Quintyn, and Kina Chenard study the relationship between regulatory governance and the soundness of the banking sector. They construct indexes of banking sector soundness, regulatory governance, and public sector governance for approximately 50 countries. They then test whether these indexes are related to the capacity of the banking sector to withstand shocks. Their regression results indicate that good regulatory governance has a statistically significant, positive influence on banking sector soundness. The results also indicate that macroeconomic conditions, as well as the quality of political institutions and public sector governance, also contribute to banking system soundness. The main lesson from this paper for policy-makers is that good regulatory governance will pay off in terms of soundness in the domestic financial system. The authors suggest that future work could extend these tests beyond the banking sector to the entire financial system.

Although he agreed with the main conclusions of the paper, the discussant, Claudio Borio, mentioned various limitations of the authors' empirical work. Most of these limitations were related to a lack of adequate data. Borio felt that developing better multi-country data will be critical for making further progress with this type of analysis.

Panel Discussion

The panel discussion, featuring Charles Freedman, Angela Redish, and Claudio Borio, provided an excellent forum for a discussion of the conference papers. Aside from the specific comments on the papers noted above, the issues discussed revolved around the notion of systemic risk implicit in the conference papers, the state of the models used to address this notion, and the role of the central bank in pursuing this line of research.

Charles Freedman linked the conference papers to the two main reasons that the Bank of Canada has been interested in research on financial system issues, even though it does not have regulatory or supervisory responsibilities for individual financial institutions. First, the Bank gains a better understanding of the transmission of monetary policy through the financial system to the real economy; and, second, it fulfills its role as an adviser to the government on the periodic revisions of financial institution legislation. Freedman and Borio agreed that central banks have tended to emphasize the asset side of balance sheets in their recent research of the transmission mechanism, as in the Van den Heuvel paper, but that they should also remain concerned with the liability side in work on financial stability issues.

Angela Redish noted that the answers to the questions addressed in some of the conference papers were rather inconclusive, perhaps a reflection of the fact that the theoretical and empirical models are in early stages of development. She pointed to the lack of support in theoretical models for key financial sector features, such as bank capital requirements and deposit insurance. She urged the development of a framework to organize future research in this area, starting with perhaps an understanding of why the financial system differs from other sectors in the economy.

The panellists underscored the importance of pursuing, both in central bank and academic circles, research on financial system issues. For instance, the topic on bank diversification and consolidation was viewed as raising important issues for the financial system that were worth pursuing. Borio drew from the work on diversification that the benefits may exist, but are not as great as business people would have us believe. This conclusion is the same as that drawn by Freedman, who thought that the banking sector might just be going through the same sort of “pendulum swings” between consolidation and divestiture that are seen in the non-financial corporate sector. But why have the recent trends towards conglomeration continued in recent years if there are no benefits to such a strategy?

More generally, the panellists saw a role for central banks in assessing and commenting on financial system developments, even though the issues are not the direct responsibility of the central bank. Borio and Freedman advocated a role for central banks in commenting on financial system developments because of their ability to take the long-run view. That said, Freedman added that such comments are often misinterpreted or ignored by the markets.

Claudio Borio commented on the idea of systemic risk implicit in the papers. Its origin lies in the failure of an individual institution resulting from some kind of exogenous shock to liquidity or asset values, which in turn leads to broader financial instability. Borio points out that this interpretation of risk is problematic, in part because it is static in nature and treats risk as exogenous. In his view, this does not correspond well with reality, where financial instability tends to build up over time and is endogenous to the state of the economy, with its origin not so much in contagion but rather in the shared exposures of financial firms to common risk factors. These risk factors are closely linked to the business cycle, leading to excessive procyclicality of the financial system. The implication of this alternative view of risk is that policy-makers should promote the macroprudential orientation of the regulatory and supervisory framework, rather than focusing on the risk profiles of individual institutions.

Conclusions

The conference papers highlight the important interaction between financial governance and financial and economic activity. For example, there is compelling evidence that good regulatory governance is key to the sound functioning of the financial system. There is also evidence that the regulation of bank capital can have important implications for the portfolio choices of banks and for the monetary policy transmission mechanism.

As the panellists noted, however, the conference yielded more questions for future research than clear policy recommendations. For instance, the papers presented by Dionne and Gale underscore the need for further research on the appropriate design and effects of bank capital requirements. More work in the area of contagion is also needed to understand how shocks are propagated through the financial system.

In pursuing this work, it will be important to emphasize the development of theoretical and empirical models that include key real-world characteristics and that could be used to guide policy-makers.