## Discussion

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Over the past ten years, at least three financial events have triggered immediate adverse reactions in other countries: the devaluation of the Mexican peso in December 1994, the devaluation of the Thai baht in July 1997, and the default of Russian bonds in August 1998. A growing body of literature is attempting to understand why these events have such strong negative contagious effects on other countries. One factor that has been emphasized is financial linkages between the country where a crisis originated—the "crisis country"—and the countries that suffered negative spillover effects (Kaminsky, Reinhart, and Vegh 2003). It is argued that when an investor invests in a group of countries, a crisis in one country can cause the investor to reduce investments in countries that share the same macroeconomic risk factors, directly or indirectly, with the crisis country (Kodres and Pritsker 2002).

Eric Santor's paper contributes to this literature by examining the direct evidence on the responses of investors to financial crises. In this case, the investors are Canadian banks. Using detailed, quarterly balance-sheet data, Santor examines whether and how Canadian banks change their investments in countries that share macroeconomic risk factors with crisis countries. The empirical model is fairly simple: it is assumed that under normal circumstances, changes in Canadian banks' investments in a foreign country depend on the difference between the returns in the foreign country and in Canada, and on past changes in investment—justified partly by the fact that banks may not be able to adjust their investments immediately. The returns are approximated by real interest rates and GDP growth rates in the two countries. After controlling for the return differentials and the lagged investment changes, Santor investigates whether the investments of Canadian banks changed immediately after crises in countries that share common macroeconomic risk factors with a crisis country.

The results are somewhat surprising. First, foreign securities holdings by Canadian banks are not affected by financial crises. And, more importantly, Canadian banks tend to increase their loans to countries that are either part of the same region as the crisis country or share macroeconomic risk factors. This last result contradicts theories of contagion based on financial linkages.

How should one interpret these results? They may indeed represent a rejection of the contagion theories that were based on financial linkages. But I do not think that we can draw such a conclusion yet, for at least three reasons. First, while Canadian banks have increased their holdings of foreign securities significantly over the past twenty years, most of these securities are from developed countries. Their direct investments in securities from crisis regions/countries are very limited, which may explain why we do not see any significant adjustment in their holding of foreign securities immediately after financial crises.

Second, the exposure of Canadian banks to crisis regions/countries may not be appropriately measured by their foreign loans and direct holdings of foreign securities. It is well known that in the mid-1990s, many U.S. banks made loans to hedge funds, such as Long-Term Capital Management (LTCM), which increased U.S. bank exposures to countries such as Russia and Brazil. However, since LTCM is a hedge fund, these loans would be categorized as domestic and would therefore not be included in the foreignexposure measures. Canadian banks may well have invested in domestic funds that in turn invested heavily in crisis regions/countries. Without data on such indirect foreign investments, however, it is difficult to judge whether and how Canadian banks changed their foreign investment portfolios following crises.

Finally, to determine whether the loan behaviour of Canadian banks immediately after crises contradicts theories of contagion based on financial linkage, one has to distinguish loans to foreign banks from loans to foreign non-financial firms. The prediction of financial-linkage-based theories is that following a financial crisis there will be decreases in loans to foreign banks in the countries that share macroeconomic risk factors. The contagion theories do not predict how investors who have long-term relationships with foreign non-financial firms should behave after a crisis. According to Diamond and Rajan (2001), however, foreign banks with local operations in crisis regions/countries should and did increase their loans to those regions/ countries; that is, they provided liquidity to those countries when domestic banks were unable to do so because of a financial crisis. Since the loan data used in the paper do not distinguish between loans to foreign financial institutions and loans to foreign non-financial firms, we do not know whether the empirical result on loans would reject contagion theory or confirm the Diamond and Rajan theory of banking and liquidity.

This is a very interesting paper on an important topic. The author uses valuable bank-level data to investigate how Canadian banks behave immediately after financial crises. However, without more detailed information about banks' indirect holding of foreign securities and on loans to financial versus non-financial firms, it is difficult to judge whether the paper's empirical results constitute a direct test of the financial-linkagebased theory of contagion.

## References

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