Cross-Border Regulatory Spillovers: How Much? How Important?

A Project of the International Banking Research Network[1]

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Background

The international community recognizes the importance of having tools that are effective at achieving financial stability goals. The expanded emphasis on such tools has fueled extensive discussions of a range of possible instruments targeted at micro-prudential and macro-prudential objectives. The emphasis is especially acute at times when monetary policy and fiscal instruments may be constrained, either by the zero lower bound, by fiscal rules, or if these policies are directed at alternative goals. While it is well understood that multiple instruments and multiple targets might not be precisely coordinated, policymakers seek to come as close as possible to achieving different objectives subject to constraints.[2]

Instrument effectiveness at influencing desired outcomes should be preconditions for use. Both the effectiveness of domestic policy instruments such as monetary policy, and the effectiveness of financial stability instruments, whether micro or macro-prudential, may be influenced by the ability of financial institutions to engage in regulatory arbitrage and leak to non-covered entities. In the debate over how to deal with bubbles in asset prices, regulatory arbitrage is one argument provided by those that favor monetary policy over regulatory instruments that might be more prone to policy leakages (Bengui and Bianchi 2014). Leakages can be to "shadow banking", to banking institutions not directly covered by the specific policy instrument (Aiyar, Calomiris and Wieladek 2013), or to activities in other geographic regions (Houston, Lin and Ma 2012). In the case of monetary policy and prudential policies, financial openness in the international context creates added challenges for policy effectiveness (Obstfeld 2014).

Some empirical evidence already exists on regulatory spillovers in the international setting. Houston, Lin and Ma (2012) use data aggregated at the country level and survey data on global regulations to argue that banking flows move to circumvent regulations. A recent study by Bremus and Fratzscher (2014) reaches similar conclusions that inflows and outflows of

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[2] For example, see the nuanced discussions of the standard Tinberger assignment problem by Stanley Fischer (2010) and Maurice Obstfeld (2014).

capital internationally through banks respond to the stance of regulation and supervision around the time of the global financial crisis. Both studies rely on indices taken from the Barth, Caprio and Levine (2013) database of prudential policies, with the observations available at 3-year intervals. Forbes, Fratzscher, Kosta and Straub (2012) use cross-country data to argue that there is arbitrage and leakages of Brazilian capital controls to neighboring countries. Other empirical evidence on spillovers has been provided in the context of the UK experience, both within a country when a policy tool is applied to domestic banks but not foreign institutions competing in the same markets (Aiyar, Calomiris and Wieladek 2014) and through reallocation of activity between domestic and international locations (Aiyar, Calomiris, Hooley, Korniyenko, and Wieladek 2014). Beyond these few studies, broad-based empirical work on the cross-border effects of domestic regulation, combined with consideration of domestic effects, is still lacking. Most of the available analysis covers domestic consequences of prudential policies (examples include IMF 2011, Bruno and Shin 2013, Jimenez et al 2014 and Vandenbusshe, Vogel and Detragiache 2012).

Research Question and Data

This gap in evidence on policy spillovers is the subject of this multi-study initiative of the International Banking Research Network (IBRN) commenced in 2014. The IBRN is uniquely positioned to inform the issue of regulatory spillovers and arbitrage. The IBRN was founded in 2012 to analyze issues pertinent to internationally active banks, with participants in 2013 analyzing the transmission of liquidity risk domestically and internationally through the activities of global banks. Currently, the network brings together researchers from about 25 countries[3], with each team having access to bank-level data on cross-border banking activities. Essentially, the confidential micro-data underlie the international banking statistics of the Bank for International Settlements (BIS) that have been used for many previous studies in aggregated form.[4] Yet, the aggregate data do not allow studying important issues such as heterogeneity across banks in responding to regulations.

Researchers in the network use these bank-level data to provide evidence on policy transmission across countries and effects of regulatory policies on international banks. This network confronts important policy questions on international banking with frontier research

[3] The current list of participating central banks and institutions is available at http://www.newyorkfed.org/IBRN/index.html The network also has participation from the IMF, BIS, and the ESRB.
[4] This data are used in Houston, Lin and Ma (2012) and Bremus and Fratzscher (2014).

methodologies, country-specific micro-data on banks, and local knowledge about policy instruments needed for careful experiment design.

In the current IBRN initiative, the comprehensive analysis to be performed by a team in each country (mostly recruited from central banks) examines domestic effects and international spillovers using detailed micro-banking data, and relying on more precise measures of prudential regulation than were available to prior researchers studying cross-border spillovers. More specifically, research conducted in this project uses micro-banking data for the period between 2000 and 2013 to determine inward transmission of foreign prudential policy to countries through different channels, and domestic versus outward reallocation of activity within global banks. The project brings evidence from detailed examinations, using similar methodology, but conducted by distinct IBRN countries using their own country's confidential regulatory data.

An important and unique part of this effort is the IBRN collaboration with the International Monetary Fund on extending and utilizing the Global Macro Prudential Instruments (GMPI) survey, which the IMF conducted in 2013. The GMPI provides information on different types of regulations, ranging from capital and liquidity requirements to exposure limits. The IBRN is collaborating to build a relevant cross-country and quarterly time series database for prudential instruments that all participants in the initiative will use to explore the effects of home and foreign policy instruments.

Our initiative that commenced in 2014 contributes to knowledge of prudential policy effects by answering the question:

- How do lending, risk-taking, and funding of banks respond to prudential policies implemented in home and foreign markets? What is the evidence on the inward transmissions to the domestic economy and the outward transmission to foreign economies?

Within these broad questions, countries focus on generating even more specific insights as relevant to the structure of their banks and available micro-banking data. In particular, these include addressing:

- Do responses differ by types of banks (domestic or global; or domestic versus foreign bank branches versus subsidiaries) and by types of funding flows (cross-border versus through local affiliates or by counterparty types)?

- Do banks respond differently to alternative types of policy measures? Types of measures include those targeted at credit supply, at credit demand, and at specific categories of flows.

- Do responses to prudential policies vary over financial cycles or business cycles?

- Which bank-specific features shape the observed responses?

Overall, the results of these detailed analyses, which take into account specific features of banking systems and the balance sheet data of banking firms operating within countries and financial cycle conditions and *use state of the art academic research methods for working with micro data* [5] should provide valuable perspectives on the spillovers that occur from some of the effects of instruments in the toolbox already in play and lessons for the application of macro-prudential instruments. Moreover, as researchers apply a common research methodology to the experiences of each country and common prudential policy database for responses, the IBRN generates broadly relevant insights, going well beyond the interesting single country case studies in research conducted outside such a network. In addition to providing papers with country-specific results and perspectives, the project presents a careful and homegrown meta-analysis of the results, a description of the prudential database, and a cross-country analytical study.[6] Results are expected to be disseminated to the policy community in late 2015 and to the public through a symposium issue of a journal.

Bibliography

Aiyar, Shekhar, Calomiris, Charles, and Tomasz Wieladek. 2014. Does Macro-Prudential Regulation Leak? Evidence from a U.K. Policy Experiment. *Journal of Money, Credit and Banking*, 46 (1), February 2014, 181-214.

Aiyar, S, C. Calomiris, J. Hooley, Y. Korniyenko, and T. Wieladek. 2014. The International Transmission of Bank Capital Requirements: Evidence from the United Kingdom. *Journal of Financial Economics* 113(3): 325-518.

Barth, J. R., Caprio, G. and R. Levine. 2013. Bank Regulation and Supervision in 180 Countries from 1999 to 2011*, Journal of Financial Economic Policy*, Vol. 5(2), pp. 111-219, April. DOI:10.1108/17576381311329661.

[5] Examples include Cornett et al (2011), Khwaja and Mian (2008), Aiyar et al (2014), Kalemli-Ozcan et al (2013), and Cetorelli and Goldberg (2012).

[6] For example, see Buch and Goldberg (2014) for the overview of methodologies and results of the 2013 IBRN initiative on transmission of liquidity risk through global banks.

Bengui, Julien and Javier Bianchi. 2014. Capital Flow Management when Capital Controls Leak. Manuscript.

Bremus, Franziska and Marcel Fratzscher. 2014. Drivers of Structural Change in Cross-Border Banking Since the Global Financial Crisis. Deutsches Institut fur Wirtschaftsforschung discussion papers 1411. Bruno, Valentina and Hyun Song Shin. 2013. Assessing Macroprudential Policies: Case of Korea. NBER Working Paper 19084.

Bruno, Valentina and Hyun Song Shin. 2014. Cross-Border Banking and Global Liquidity. forthcoming in the *Review of Economic Studies.*

Buch, Claudia M., and Linda Goldberg. 2014. International Banking and Liquidity Risk Transmission: Lessons from Across Countries. Federal Reserve Bank of New York Staff Reports 675 (June). NBER working paper 20286.

Cetorelli, Nicola and Linda Goldberg. 2012. Banking Globalization and Monetary Transmission. *Journal of Finance*. Vol. LXZII no 5 (October) 1811-1843.

Cornett, M.M., J.J. McNutt, P. Strahan, and H. Tehranian. 2011. Liquidity Risk Management and Credit Supply in the Financial Crisis. *Journal of Financial Economics*. Fischer, Stanley. 2010. Central bank lessons from the global crisis. Lecture.

Forbes, Kristin, Marcel Fratzscher, Thomas Kostka, and Roland Straub. 2012. Bubble Thy Neighbor: Portfolio Effects and Externalities from Capital Controls. Working Paper no. 18052. Cambridge, Mass.: National Bureau of Economic Research (May).

Houston, J.F., C. Lin, and Y. Ma. 2012. Regulatory Arbitrage and International Bank Flows. *Journal of Finance* 67(5): 1845-1895.

International Monetary Fund (IMF). 2011. Macroprudential Policy: What Instruments and How to Use Them? Lessons from Country Experiences., IMF Working Paper No: WP/11/238.

Jeanne, Olivier. 2013. Macroprudential policies in a global perspective. *Proceedings*, Federal Reserve Bank of San Francisco, issue Nov, pages 1-38.

Jiménez, Gabriel, Ongena, Steven, Peydró, José-Luis and Jesús Saurina. 2014. Macroprudential policy, countercyclical bank capital buffers and credit supply: Evidence from the Spanish dynamic provisioning experiments. European Banking Center Discussion Paper 2012-011.

Kalemli-Ozcan, Sebnem, Elias Papaioannou, and Jose-Luis Peydró. 2013. Financial Regulation, Financial Globalization, and the Synchronization of Economic Activity. *Journal of Finance* 68(3): 1179-1228.

Khwaja, Asim I. and Atif Mian. 2008. Tracing the Impact of Bank Liquidity Shocks: Evidence from and Emerging Market. *American Economic Review* 98(4), 1413-1442.

Obstfeld, Maurice. 2014. Trilemmas and Tradeoffs: Living with Financial Globalization. paper for Asian Monetary Policy Forum, Singapore.

Vandenbussche, J., U. Vogel, and E. Detragiache. 2012. Macroprudential Policies and Housing Prices— A New Database and Empirical Evidence for Central, Eastern, and Southeastern Europe. International Monetary Fund. Working Paper 12/303. Washington DC.