New Rules for Foreign Banks: What's at Stake?

BY MITCHELL BERLIN

The financial crisis has led economists and policymakers to think more carefully about how global banks are regulated. Before the crisis, foreign banks had operated their U.S. branches and subsidiaries mainly under rules set by the countries where they were based.[1] But as the crisis made clear, financial shocks are transmitted internationally. And efforts to resolve them can be hampered when there are multiple regulators with opposing interests and different resolution mechanisms. In response to these concerns, the Federal Reserve Board, in accordance with the Dodd-Frank Act, has approved rules to strengthen the regulation of foreign banks operating on U.S. soil in coming years.

The new framework's organizational restrictions and higher regulatory costs may reduce the efficient flow of funds within global banks. These costs and restrictions may also induce global banks to shift activities to other countries, switch from subsidiaries to branches, or take other steps to avoid the full impact of the regulations. However, the new rules reflect heightened concerns about financial stability that came into sharp relief during the crisis. To understand the tradeoffs, this article will examine: How did banking become globally interconnected in the years leading up to the financial crisis? How does the presence of foreign banks benefit a country, and what are the costs? Why had foreign banks been lightly regulated before the crisis? And postcrisis, what are the new regulations' likely costs and benefits?

THE RISE OF GLOBAL BANKING

Global banking expanded dramatically before the crisis. The two decades preceding the financial crisis of 2008-09 have been termed the second age of globalization, a period of rapid economic integration that included a dramatic expansion of international banking.[2] International banks have become truly global, in the sense that they increasingly have branches and subsidiaries physically located in many countries performing a wide range of funding, lending, and capital market activities.

Figure 1 provides a glimpse of this trend. The share of foreign banks operating subsidiaries in a sample of 137 countries increased by 14 percentage points from 1995 to 2008. The rising share was most dramatic in developing countries. However, the trend may be understated for developed countries, because banks often enter foreign markets through branches rather than subsidiaries — more on this distinction later.

For just the U.S., we have data extending further into the past and that include both subsidiaries and branches of foreign banks operating in the U.S.[3] These data reveal a rough doubling of the share of all U.S. assets of foreign banks among all banks doing business in the U.S. between 1980 and 1992 (Figure 2). After a modest decline from 1992 to 2004, foreign banks' share of U.S. assets increased again during the period of explosive growth of U.S. banking assets through 2008. So the dollar amount of foreign banking assets in the U.S. was increasing significantly even as the share increased modestly (Figure 3). Although we observe a slowing and then a quickening of foreign banks' asset growth in the subsequent years, it is too soon to predict future trends.

The modestly increasing share of foreign banks in the U.S. and other developed countries since the 1990s,

[1] I use the terms *foreign* and *global* bank more or less interchangeably. See William Goulding and Daniel Nolle for precise definitions of terms used to describe foreign banks and foreign units of global banks. Their article also contains a description of U.S. foreign banking statistics.

[2] Linda Goldberg uses the phrase "second age of globalization" in her excellent account of the growth of global banking in the period preceding the financial crisis. Maurice Obstfeld and Alan Taylor, among others, date the first age of globalization from 1870 to 1914.

[3] Comparable data for other nations are largely confidential. The Fed, in conjunction with a number of other central banks, the International Monetary Fund, and the Bank for International Settlements, has organized the International Banking Research Network, which seeks to expand researchers' access to international banking data.

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evident in Figures 1 and 2, masks some other important changes, notably in the U.S. In the 15 years preceding the crisis, the share of broker-dealer assets of the 10 largest foreign banks operating in the U.S. increased from 15 percent to 50 percent, and 12 of the top 20 broker-dealers in the U.S. are now owned by foreign banks.[4] During this period, global banks in both the U.S. and the European Union relied increasingly on short-term funds to finance capital market activities with funds flowing freely across national borders.[5]

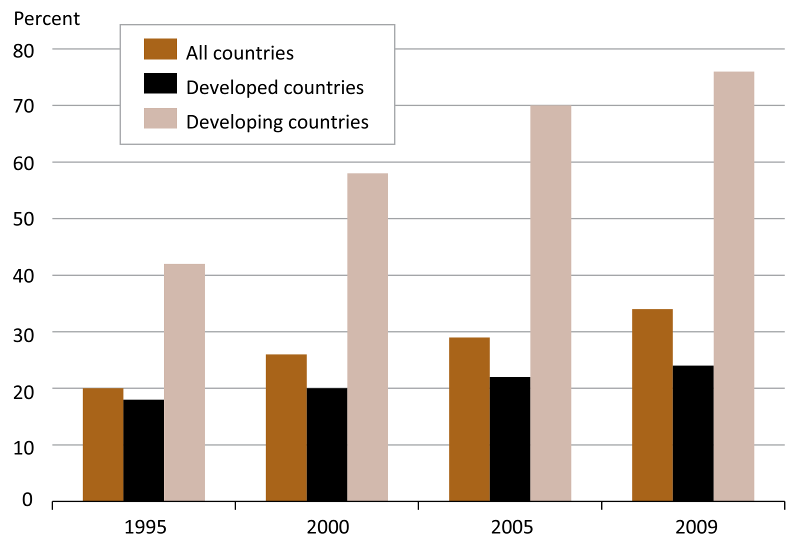
Why did banks become more globalized? In a nutshell, the world economy was becoming more integrated, and global banks promoted both economic integration and a more efficient financial system. How do banks increase efficiency when they locate abroad? For example, why would a depositor in the U.S. place his funds in, say, Santander Bank, a U.S. subsidiary of Santander Group of Spain? And what can Deutsche Bank's branch office in the U.S. do that JP Morgan can't? More broadly, does an advanced country like the U.S. or a less-developed country like Pakistan benefit when global banks like Santander and Deutsche Bank set up operations there?

Banks follow their customers abroad and then compete for customers there. G Corporation, a (fictional) German automaker, has just opened a number

FIGURE 1

Globalization Most Evident in Developing World

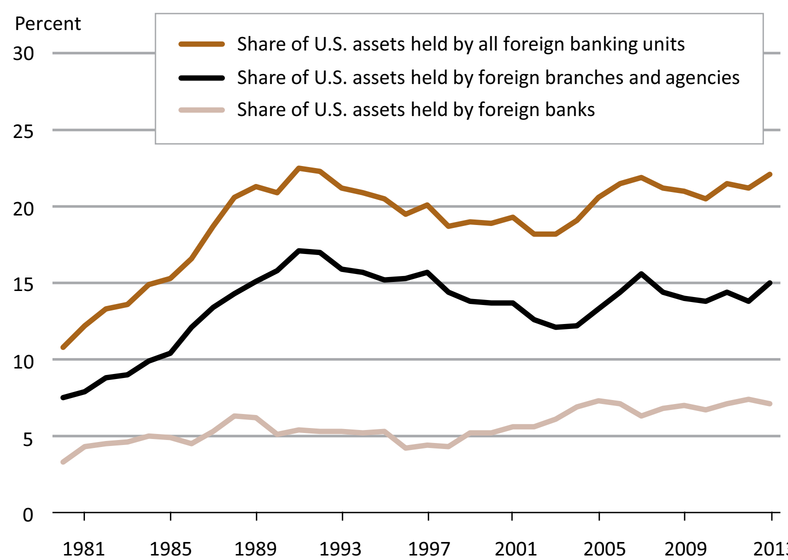
Percent of foreign banks in different types of countries, 1995-2009.



Source: Claessens and Van Horen (2014).
Note: The data include foreign subsidiaries but not branches of foreign banks. The developed countries are proxied by the 34 member nations of the Organization for Economic Cooperation and Development.

FIGURE 2

Share of Foreign-Held Assets Resumed Rising Before Crisis



Source: Federal Reserve Board, Share Data for U.S. Banking Offices of Foreign Entities, www.federalreserve.gov/releases/iba/default.htm.
Note: Agencies include organizational forms grandfathered in under previous legislation to ensure that foreign banks could compete on equal terms with U.S. banks.

[4] See Fed Governor Daniel Tarullo's 2014 speech. Broker-dealers buy, sell, and trade a wide range of capital market instruments such as bonds, swaps, and futures contracts. As brokers they seek to match buyers and sellers; as dealers they take positions in — that is, have their own stake in — the instruments they buy and sell.

[5] See Tarullo's 2014 speech and Franklin Allen and his coauthors' article for accounts of these trends. Former Fed Chairman Ben Bernanke and his coauthors document the flow of short-term funds from U.S. branches of European banks, which were then used to purchase mortgage-backed securities and other "safe" securities from U.S. banks in the years preceding the financial crisis.

of car dealerships in the U.S. The company has a close relationship with Götze Bank (also fictional), which provides G Corporation with a range of capital market services such as financing dealers' floor inventory and customer purchases as well as packaging auto loans into asset-backed securities. Because Götze Bank has built up an intimate knowledge of G Corporation's business over time, it can provide banking services to G Corporation efficiently and therefore at a lower cost than competing banks could. And, of course, Götze Bank would prefer not to lose G Corporation's U.S. business to a U.S. bank. So Götze Bank opens a branch in the U.S. And since it has world-class capital market expertise, Götze Bank USA will also compete for the banking business of other large corporations operating in the U.S.[6]

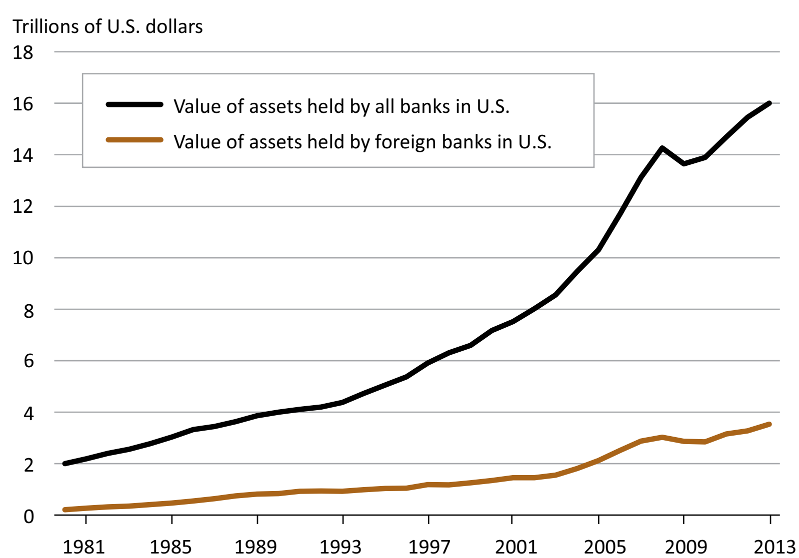
Global banks can more readily tap global capital. Once a bank has set up shop in foreign markets, new opportunities open up for moving resources across national borders to seize profitable opportunities. Following Russia's (nonfictional) default on its bonds in 1998, financial markets around the world seized up, and firms far from Russia had difficulty securing finance. You might think that this would mean global banks would make fewer loans than would domestic lenders. But when Philipp Schnabl compared the lending behavior of Peruvian banks owned by foreign parents with that of domestically owned Peruvian banks during this episode, he found that foreign-owned banks reduced their lending less than did Peruvian-owned banks. Moreover, Peruvian-owned banks that relied solely on domestic funds reduced their lending less than did Peruvian-owned banks that had depended on international funds before the Russian default. So the decline in lending was most extreme for Peruvian-owned banks that relied on funds from outside Peru.

What accounts for these different lending patterns? As outside creditors pulled back from taking risks in a stressed financial environment, domestically owned Peruvian banks dependent on foreign funds could not secure funds.[7] By contrast, foreign-owned Peruvian banks had access to funds from around the world, routed through their parent companies. Economists call this an *internal capital market*: A global bank collects funds where they can be secured relatively cheaply and shifts them to regions where lending is most profitable. A bank may be able to shift money from one region and put it to work in another region more efficiently through its own internal capital market than financial markets can because information about profitable opportunities flows more easily within organizations and because decisions about allocating capital can be coordinated through the bank's headquarters.[8]

Meanwhile, the Peruvian economy benefited because global banks insulated domestic borrowers from a

FIGURE 3

Growth of Foreign Assets Accelerated Before Crisis



Source: Federal Reserve Board, Share Data for U.S. Banking Offices of Foreign Entities, www.federalreserve.gov/releases/iba/default.htm.

[6] Claudia Buch summarizes the abundant evidence for banks following their customers abroad. The desire to operate in a global banking center such as New York or London is also a major reason why banks locate abroad. Also, international integration has spurred the growth of foreign trade and, in turn, the demand for trade finance from banks with a global reach.

[7] For a larger sample of countries over a longer period, 1991 to 2004, Ralph de Haas and Iman van Lelyveld similarly find that banks' foreign subsidiaries curtailed their lending less than domestic banks did when the host country suffered a negative economic shock. They also find that foreign banks were less likely than domestic banks to keep lending when their own financial health weakened.

[8] There is a large, contentious body of economic literature on the efficiency of internal capital markets. Economists examining banking firms have typically found evidence that they promote efficiency at the firm level. See my *Business Review* article for the pros and cons of internal capital markets.

foreign economic shock that would have otherwise reduced bank lending more sharply. One reason foreign banks can cushion an economy from an outside shock is that they can diversify geographically.

Geographic diversification of banks can promote economic stability. In an ingenious study, Donald Morgan, Bertram Rime, and Philip Strahan provide evidence of the benefits of geographic diversification during a period in which one could view the United States as a mini-global economy. From 1977 to 1994, many states relaxed restrictions on banks from other states operating within their borders, while others continued to prohibit banking across state lines. We can think of each state that opened its borders as if it were a nation welcoming foreign banks to enter. Morgan and his coauthors find that the interstate banking states suffered milder economic fluctuations than states that barred interstate banks. Their findings suggest that bank customers — and residents within states that permit interstate banking — benefit from geographically diversified banks, which can provide more stable funding in a state that would otherwise be hit much harder by a macroeconomic shock.[9] Although Morgan and his coauthors argue that geographically diversified banks promoted stability in the U.S., they also provide evidence that a bank operating in many states can transmit economic shocks across state lines, an issue that I discuss later.

Global banks compete in underserved markets. Economists have found that when global banks enter less developed nations, they typically increase competition without necessarily driving out domestic lenders. For example, Atif Mian shows that foreign banks entering Pakistan primarily serve large corporations, while Pakistani banks retain their local business customers.[10] In their review of the economic literature on foreign banking, Stijn Claessens and Neeltje Van Horen conclude that the entry of a foreign bank into a country is associated with greater efficiency in the provision of banking services, especially in developing markets.[11] Researchers have cited economies of scale for the large global banks, access to diversified sources of funds, diversified lending opportunities, and the ability to apply best practices to multiple markets as sources of these efficiencies.

Despite a broad consensus among economists that global banks enhance economic efficiency, the basic question, "How should global banks be regulated?" has always been controversial. Even as international integration proceeded and banking became more globalized, periodic crises provoked concerns that unfettered capital flows come at a cost. Indeed, in 2004, as the pace of global banking quickened by all measures, Maurice Obstfeld and Alan Taylor wrote, "At the turn of the twenty-first century, the merits of international financial integration are under more forceful attack than at any time since the 1940s." And as we will see in the next section, some national regulators permitted foreign banks to enter freely but placed relatively stringent controls over foreign banks operating in their national borders, even before the crisis.[12] But the financial crisis highlighted the economic costs of global banking for regulators in the U.S. and Europe, and many economists and policymakers have reevaluated how global banks should be regulated. Before we can see how policymakers' answers to this basic question have changed, we need to briefly explain how banks organize their foreign units.

HOW ARE FOREIGN UNITS ORGANIZED?

As noted earlier, banks structure their foreign units as either subsidiaries or branches.[13] Subsidiaries are owned by the parent organization but are separate legal entities that are capitalized separately from the parent company. For example, Santander Group's U.S. subsidiary, Santander Bank (formerly Sovereign Bank), is legally incorporated in the U.S. and reports an income stream identifiably separate from that of its parent company. Should the U.S. subsidiary fail, the parent company's losses are limited to its equity investment in the subsidiary; that is, the parent can "walk away" from its subsidiary. Santander Bank's U.S. bondholders and depositors have no claim on the assets of the parent company. However, they do have priority over any equity

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[9] In a related finding, in their article on monetary transmission, Nicola Cetorelli and Linda Goldberg show that U.S. banks with global operations are less sensitive to U.S. monetary policy shocks than are U.S. banks without global operations.

[10] Mian argues that small local businesses are more "opaque" — for example, they use less formal bookkeeping practices — and require the specialized knowledge of a local banker.

[11] Bang Nam Jeon and his coauthors found that, in a sample of developing nations, the effects of foreign bank competition are stronger when the bank enters *de novo* — that is, under a new charter — than when it enters by purchasing an existing bank. Note that lowering entry costs should increase competition regardless of the home countries of the new entrants. It is a challenge to disentangle empirically the effect of competition from foreign banks from the effect of more competition per se.

[12] For example, prior to the crisis, New Zealand and Mexico required foreign banks to establish local subsidiaries. In both countries, foreign banks dominated their national banking systems. In such situations, host country bank regulators have viewed more intrusive regulation as a lever to ensure that their national interests were adequately protected. See, for example, the entertaining speech by the former governor of the Reserve Bank of New Zealand, Alan Bollard.

[13] I'm simplifying things here. For example, the U.S. permits foreign units to adopt a number of organizational forms, mainly because of regulatory differences between the U.S. and the home countries.

holders (including the parent company) if the U.S. subsidiary fails.[14]

Unlike subsidiaries, branches are not legally separate from their parent companies.[15] Take Deutsche Bank AG New York, a branch of Germany-based Deutsche Bank that engages in wholesale lending and currency and derivatives trading.[16] Deutsche Bank is fully liable for the branch's debts if the branch can't pay its creditors.

How does a bank decide between a branch and a subsidiary? Regulation and taxes appear to be the most important factors in whether a foreign unit is set up as a branch or a subsidiary.[17] Countries differ significantly in restricting foreign banks' organizational choices. At one end of the spectrum, under the European Union's single passport, a member nation's banks are free to open either branches or subsidiaries in any EU country. At the other end of the spectrum, New Zealand, Mexico, and Brazil permit only foreign subsidiaries. Typically, subsidiaries are regulated by the host country, while branches are regulated by the home country.[18] As a result, many countries restrict the activities of foreign branches operating on their soil, which tends to promote foreign entry via subsidiaries. For example, the U.S. does not permit foreign branches to take retail deposits — that is, deposits smaller than $250,000, the limit per customer for FDIC insurance. So a branch such as Deutsche Bank AG New York relies on wholesale deposits, among many other funding sources.

Eugenio Cerutti and his coauthors find that banks are more likely to set up subsidiaries than branches in countries where macroeconomic risk is high. They argue that a parent bank can walk away if a serious economic downturn in the host country causes financial problems at its subsidiary.

Regulation and taxes appear to be the most important factors in whether a foreign unit is set up as a branch or a subsidiary.

On the other hand, using various measures of the risk of intervention by the host country's political authorities, Cerutti and his coauthors find that in countries where political risk is high, banks are more likely to choose the branch form. Since branches are legal extensions of the parent, they are better insulated against interventions and expropriations, which could range from taxes to nationalization, by the host country.[19] A bank is also more likely to use a branch structure in a country where corporate taxes are higher than at home because it is easier to transfer profits from a branch — which, unlike a subsidiary, doesn't produce a legally separate income stream — back home for tax purposes.

Broad organizational strategies and the history of a bank's global expansion also appear to be important. Some banks have a strict preference for the subsidiary form; for example, Santander Group purchases mainly retail-oriented foreign banks, which it retains as subsidiaries. Other global banks such as Citigroup have amassed a crazy quilt of subsidiaries and branches around the world, which appears to reflect a mix of history and regulatory and tax incentives over decades of headlong growth.

FROM A LIGHT TOUCH TO TIGHTER RULES

Before the financial crisis, the U.S. had a rather hands-off approach to the regulation of foreign banks. See the accompanying comparison, *Before and After: Regulation of Foreign Banks in the U.S.,* for details. Most notably, banks could choose their preferred organizational form for their U.S. operations, and in 1991, foreign banks were no longer subject to U.S. capital regulations, subject to some qualifications.[20] This approach reflected the trends of the second age of globalization — expanding international trade, financial liberalization in developing markets, the opening of markets in Eastern Europe, and broad deregula-

[14] Priority means that in the event of failure, depositors and bondholders must be fully paid off before Santander's stockholders — mainly Santander Group itself — receive a cent.

[15] In this article, *branch* refers to a particular legal structure rather than to the local office of a bank in your neighborhood or a suburban mall.

[16] Retail banking serves small depositors and small businesses. Wholesale banking involves seeking funds in money markets while making large loans and providing other services to large firms.

[17] The empirical literature on the choice of organizational form by global banks is sparse. Here, I summarize the main empirical results of Eugenio Cerutti and his coauthors and Jonathon Fiechter and his coauthors. The latter provide an excellent summary of the factors behind the choice of organizational form.

[18] As a formal matter, this description is too simple, since host country regulators are always given some regulatory oversight role. As a practical matter, the simple description is accurate.

[19] Giovanni Dell'Ariccia and Robert Marquez present a theoretical model of these tradeoffs.

[20] As stated in the Fed Board of Governors' 2001 supervision and regulation letter: "In cases in which the Board has determined that a foreign bank operating a U.S. branch, agency, or commercial lending company is well-capitalized and well-managed under standards that are comparable to those of U.S. banks controlled by [financial holding companies], the presumption will be that the foreign bank has sufficient financial strength and resources to support its banking activities in the United States." Financial holding companies include commercial bank holding companies as well as regulated holding companies in which the parent company is an insurance company or investment bank.

Before and After: Regulation of Foreign Banks in the U.S.

<table>
<tr><th>Before 2014</th><th>To be phased in</th></tr>
<tr><td>

- The Federal Reserve oversaw U.S. operations of foreign banks. Their home regulators had primary oversight of their global operations.
- Foreign banks were not required to meet Fed capital requirements as long as they were deemed well managed and well capitalized and their home regulations were comparable to U.S. regulations.
- Foreign banks were free to choose their organizational structure, subject to approval by the Fed.
- Foreign banks faced restrictions on their asset and liability mix:
    - Branches could not take retail deposits.
    - Branches were required to consistently hold certain amounts of high-quality assets in the U.S.

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- Foreign banks with total combined assets between $10 billion and $50 billion must:
    - Meet home country capital stress test requirement or perform company-run stress tests.
    - Have a risk committee for U.S. operations if publicly traded.
- Foreign banks with total combined assets exceeding $50 billion and combined U.S. assets of less than $50 billion must:
    - Meet home country capital stress test requirement or perform company-run stress tests.
    - Have a risk committee for U.S. operations.
    - Certify to the Fed that they meet home country capital standards consistent with the Basel Accords.
    - Perform company-run liquidity stress tests for either combined operations or U.S. operations.
- Foreign banks with total combined assets exceeding $50 billion and combined U.S. assets exceeding $50 billion must:
    - Meet home country capital stress test requirement or perform company-run stress tests.
    - Have a risk committee and risk officer for U.S. operations.
    - Certify that they meet home country capital standards consistent with the Basel Accords.
    - Perform company-run liquidity stress tests for their U.S. operations.
- Foreign banks with total combined assets exceeding $50 billion and combined U.S. assets (excluding assets held by branches or agencies) exceeding $50 billion must form an intermediate holding company that:
    - Satisfies capital and liquidity requirements comparable to requirements for U.S. bank holding companies.
    - Satisfies capital stress tests run by the Fed.

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Source: For the full regulatory rule, including an extended discussion of the rationale, see the Federal Reserve Board, "Enhanced Prudential Standards for Bank Holding Companies and Foreign Banking Organizations."
Notes: The compliance date for U.S. bank holding companies subject to the rule is January 1, 2015. The compliance date for foreign banking organizations is July 1, 2016. Leverage ratios for foreign-owned U.S. intermediate holding companies are generally deferred until 2018. See www.federalreserve.gov/newsevents/press/bcreg/20140218a.htm. Total combined assets include all of the bank's assets worldwide. Combined U.S. assets include those held by U.S. subsidiaries, branches, and other agencies.

tion of domestic and international banking markets. Financial crises in developing countries in the 1990s notwithstanding, most regulators, policymakers, and economists were focused on the efficiency benefits of global banking rather than on the potential costs under crisis conditions. They agreed that a light regulatory touch permitted global banks to operate efficiently at modest risk.[21] Broadly, regulators believed that the international Basel capital standards that were being phased in at the time were sufficiently uniform and that regulators were sufficiently vigilant that the safety and soundness of the global financial system could be assured.[22]

The financial crisis was a shock in a lot of ways, but for regulators the main lessons were that global banks could fail (in droves) and that the international banking system had

[21] Since the crisis, some economists have argued that the widespread support for unfettered capital flows and deregulation had been the result not of a true accounting of the costs and benefits but rather of the vested interests of big banks (Simon Johnson and James Kwak) or of economists' idealized models (Paul Krugman).

evolved beyond the capacities of national regulators. Of course, financial economists and regulators were already aware that global banks could become a source of financial instability, although the developed nations were largely insulated from the worst effects of the international crises of the 1980s and 1990s. But the capital flows from host countries to home countries through banks' internal capital markets, the messy failures of large global banks operating across multiple jurisdictions, and the fact that taxpayer money was used to bail out global banks focused regulators on a more intrusive approach.

For example, Britain has adopted stringent capital and liquidity requirements for foreign banks, including liquidity requirements for foreign branches. These requirements are particularly noteworthy because London is a global banking center, so they affect most global banks. (Indeed, some analysts believe that Britain's regulations will ultimately diminish its role as a global financial hub.) Furthermore, in light of the many EU bank failures during the financial crisis and the poor coordination among national regulators in handling these failures, the EU has given the European Central Bank primary responsibility for supervising large EU banks, including deciding whether a large bank should be placed in resolution.

In the U.S., new regulations the Fed adopted in February 2014 continue to obey the principle of *national treatment and equality of competitive opportunity*, which means that foreign banks have the right to compete on a level playing field with U.S. banks. Of course, moving from principle to practice is not so simple, most notably because parent banks are also regulated by their home countries. So while the principles stay constant, their implementation will change dramatically as the new regulations are phased in.

The most notable change is that a foreign bank with a U.S. presence exceeding $50 billion will be required to group its U.S. subsidiaries under an intermediate holding company subject to precisely the same capital and liquidity regulations as for large U.S. banks.[23] Furthermore, just like large U.S. banks, the holding companies will be required to perform company-run stress tests and be subject to stress tests carried out by the Fed. Although smaller foreign banks will be subject to fewer restrictions, they will be required to set up risk committees to evaluate and manage the risk of their U.S. operations.

While the new regulatory framework is a significant change, foreign banks are still free to decide whether to organize a U.S. unit as a branch or a subsidiary. They need not house U.S. branches in an intermediate holding company, and the $50 billion cutoff excludes branch assets. So, foreign banks retain considerable organizational discretion, although some commentators suggest that U.S. regulators retain an implicit threat to impose further restrictions on branches should foreign banks shift activities from subsidiaries to branches to skirt the new regulations.[24]

The financial crisis was a shock in a lot of ways, but for regulators the main lessons were that global banks could fail (in droves) and that the international banking system had evolved beyond the capacities of national regulators.

WHAT RISKS DO THE NEW RULES TARGET?

Financial shocks are transmitted internationally through global banks. While I emphasized the stabilizing effect of geographically diversified banks earlier, numerous studies have also found that economic shocks from the home country can be transmitted to the host country through global banks' internal capital markets. This occurs when parent banks suffer financial problems; for example, a banking crisis in the home country leads to declines in the foreign units' capital levels. In the financial crisis, global banks suffered such losses on a grand scale, triggering dramatic capital flows across national lines, in particular from host countries to home countries.

Funds head home in a crisis. Many studies document a "flight home" effect in which global banks withdraw funding from host markets and transfer funds to the home market. This effect is best documented in loan markets. Mariassunta Giannetti and Luc Laeven study syndicated lending

[22] Capital requirements limit the amount of debt (including deposits) that banks can use to fund their loans and other investments. See Ronel Elul's *Business Review* article on capital regulation for more detail about the various iterations of the Basel capital accords.

[23] The Fed's regulations implemented the Collins amendment of the Dodd-Frank Act, which required foreign banks that had been subject to SR 01-01 to be made subject to U.S. capital regulations. At its discretion, the Fed may permit a foreign bank to operate more than one intermediate holding company.

[24] In his 2014 speech, Governor Tarullo argues that there is a credible case for imposing capital and liquidity requirements on foreign branch operations, although the new regulations do not do so.

by global banks during banking crises between 1997 and 2008.[25] They find that a banking crisis in the home market led banks to cut syndicated lending to borrowers in host countries much more than to borrowers at home. Victoria Ivashina, David Scharfstein, and Jeremy Stein compare the lending behavior of U.S. and European banks during the European sovereign debt crisis in 2011. They find that compared with U.S. banks, European banks dramatically cut back dollar lending in global syndicated loan markets and shifted their attention to home lending.[26]

Foreign units can become undercapitalized. While the flight home can have particularly harsh contractionary effects in emerging markets, the flow of funds within global banking organizations may also pose problems for developed countries. There the concern is not so much a collapse of lending to domestic firms dependent on foreign banks, but rather that the foreign units might become undercapitalized. In his 2014 speech, Governor Tarullo argues that U.S. regulators can't be confident that parent banks will act as a *source of strength* for their foreign banking units, leaving U.S. regulators to deal with the resulting financial problems.[27] In the extreme case, parent banks can take funds from their foreign units and then walk away. (That said, we did not witness global banks leaving their U.S. subsidiaries to fail during the financial crisis.)

Regulatory intervention and resolution are complicated for foreign banks. By virtue of its size alone, the failure of a large bank is a messy and complicated affair, completely apart from the international scope of its operations. But global banks pose additional problems that make their failures even messier and more complicated.

The primary dilemma facing regulators is that banks are global in life but national in death.[28] The unifying view behind the Fed's new regulations is that regulators must have more robust techniques for both preventing and resolving failures of foreign units and that this task will fall to U.S. regulators for the foreseeable future.[29] A fundamental reason for this view is that national regulators often have conflicting interests. As Franklin Allen and his coauthors note, "[N]ational regulators care first and foremost about domestic depositors, domestic borrowers, domestic owners, and ultimately, domestic taxpayers." For example, large Icelandic banks had opened branches throughout the EU to collect deposits to fund loans that now seem spectacularly risky, especially given the relative size of the Icelandic banks and the Icelandic economy. When the Icelandic banking system collapsed in 2008, Icelandic bank regulators compensated only Icelandic depositors, leaving other European depositors out in the cold.

The Icelandic case highlights another barrier to the effective resolution of global banking organizations: information flows. Icelandic regulators were slow to recognize the evolving problems in their banking system — in this, they were not alone — but they were even slower in communicating their information to other national banking regulators. Years before the crisis, Robert Eisenbeis and George Kaufman had emphasized how hard it is for regulators to collect timely information about foreign banks operating in their countries — especially branches without separate income flows that could be observed by outside regulators.[30]

With or without information about the financial health of the parent bank, host regulators often have limited power to intervene. U.S. regulators were able to intervene successfully to strengthen large U.S. banks, but they had to depend on European regulators to handle their own banks. In the fall of 2008, U.S. regulators required the largest U.S. banks to accept capital injections through the Troubled Asset Relief Program, and in the spring of 2009, U.S. regulators performed stress tests on 19 large U.S. banks to ascertain whether they would have adequate capital in the event of seriously adverse economic conditions. The capital infusion and stress-testing exercise are widely viewed as successful regulatory interventions that

[25] A syndicated loan is one in which a number of banks lend pro rata shares of a large loan.

[26] There are many unresolved questions about the flight home effect. Among the reasons cited for this effect are stronger relationships between home banks and home borrowers, political pressures to support home borrowers (Giannetti and Laeven; De Haas and Van Horen), and capital market frictions that affect cross-border lending (Ivashina and coauthors). When foreign banks have a large presence in a country, as Swedish banks did in the Baltics, or when foreign banks have subsidiaries, rather than branches, in the host country, the flight home effect is weaker (Claessens and Van Horen and the Committee on the Global Financial System). In their study of internal funding flows at U.S. global banks during the financial crisis, Cetorelli and Goldberg argue that the flight home story must be qualified. They find that these banks tended to shift funds from "core funding markets" to "core lending markets," rather than from foreign to home markets per se. See Claessens and Van Horen's survey for an account of a large body of literature on foreign banks and financial stability.

[27] The source of strength doctrine says that parent companies should respond to financial difficulties at subsidiaries or branches by providing financial support.

[28] Former Bank of England Governor Mervyn King made this observation in a speech in New York in 2010 and, by some accounts, beforehand as well. It also appeared in *The Economist* in 2009, www.economist.com/displaystory.cfm?story_id=13057265.

[29] See Governor Tarullo's 2014 speech for an articulation of the U.S. approach.

[30] Allen and his coauthors suggest that lack of information may have been a larger problem because Icelandic banks operated through branches.

enhanced confidence and mitigated the crisis. In contrast, many European banks — including banks with substantial operations in the U.S. — remained undercapitalized, and a series of stress tests carried out by European banking regulators were viewed as seriously flawed by most economists and market participants.

Meanwhile, the sheer complexity of many foreign banks creates huge coordination problems in the event of failure. Apart from the problems that would arise in any large, complex organizations, foreign banks fall under multiple regulatory frameworks and multiple resolution regimes.[31] For example, when Lehman Brothers filed for Chapter 11 bankruptcy in September 2008, the firm comprised over 700 separate legal entities in over 40 countries.[32] In response to these concerns, the new U.S. regulations place intermediate holding companies under the supervision of the Fed and require them to maintain capital levels identical to those required of large U.S. banks and to carry out stress tests. With all of a foreign bank's U.S. subsidiaries in a single holding company, the Federal Deposit Insurance Corporation would gain a key element of its proposed resolution mechanism, a *single point of entry* through which it can take over the holding company and keep the healthy subsidiaries operating in the event of failure.[33]

CONCLUSION

Although capital flight and the costly failures of global banks convinced policymakers that more intrusive controls were needed, foreign banks will not be passive in the face of the new regulations. Some foreign banks have announced that they will shift some operations outside their U.S. subsidiaries to avoid hitting asset thresholds that would trigger the most restrictive new regulations. And public announcements are only the tip of the iceberg, as other banks can be expected to make similar moves to minimize the impact of the regulations on their bottom line. Indeed, global banks and other global financial firms have the capacity to shift activities toward lightly regulated sectors or nations — the problem of the so-called *shadow banking* sector.[34] Whether more stringent regulations will actually lead to a loss of operational efficiency and whether the regulations will actually enhance financial stability remain open questions.

[31] See Allen and his coauthors for an account of the resolution of Fortis bank that was finally carried out independently by three national regulators.

[32] PricewaterhouseCoopers presentation, (2009).

[33] See David Skeel's working paper for a description and critical discussion of the FDIC's proposed single point of entry approach to the resolution of failing banks.

[34] See Daniel Sanches's *Business Review* article for an introduction to shadow banking.

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