Global Banking: Recent Developments and Insights from Research

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Abstract

Global banking is going through some profound changes following the recent crisis. Capital flows are down considerably and many advanced countries’ banks are retrenching. At the same time, banks from emerging and developing countries continue to expand abroad. And banking has become more regional. The literature, notably on the role of heterogeneity, including in home and host characteristics, suggest these changes can influence the benefits and risks of global banking. Changes also have implications for regulation and supervision, the more so as the crisis revealed how important an internationally consistent framework for resolving globally active banks is.

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1. Introduction

Global banking is going through some profound changes following the global financial crisis (GFC). The crisis has led to large balance sheets impairments, notably for many banks in advanced countries. It has also led to a barrage of new regulations, tighter supervision and oversight, and some banks having to pay large penalties for past wrong-doings. And, to a significant degree, the crisis has sharpened market discipline, making investors and lenders more wary of banks’ activities, including their international operations. Together, this has forced banks to adjust their balance sheets by deleveraging and raising new capital, and pare back cost structures by shedding activities and personnel, and adjusting compensation. Other developments, including from new entrants in the industry spurred in part by advances in delivering financial services using digital means, are putting additional pressures on existing institutions. In addition, there has been a trend increase in the importance of emerging markets and developing countries in the world economy in general and in finance specifically, including through greater cross-border banking flows and direct foreign bank presence.

As these changes continue to unfold and banks regroup, they are affecting the structure and industrial organization of global banking. In turn, they have consequences for the benefits and risks that global banking brings to financial systems and economies. As such, it is a useful moment in time to take stock of what has changed in the global banking system since the GFC, what the (recent) literature has found regarding the benefits and risks of global banking, and to reflect on what developments underway may mean for (possible changes in) regulations, supervision and other policies, so to assure that the best balance is struck between benefits and risks, considering also countries’ characteristics and circumstances. This is what this paper sets out to do.

The paper first reviews the changes in global banking since the GFC. The clearest impact of the GFC has been the sharp drop in capital flows, especially cross-border bank flows, with a reduction in the stock of claims of advanced countries’ banks of some 20 percent. This reduction has been widespread, but greatest in the euro zone and for more “distant” countries. As such, global banking has arguably become less integrated and more fragmented. But this largely applies to cross-border bank lending and the trend in foreign bank presence (“brick and mortars”) differs. While some banks from advanced countries have closed or sold off their (far-flung) foreign subsidiaries, banks from emerging markets and developing countries continued to invest abroad, often within their own region. Overall, foreign bank presence is not much less than before the GFC and, although accelerated, shifts reflect mostly underlying trends, also resulting in a more regionalized, but not more fragmented global banking system. Post-GFC, the trend also remains for formally opening up trade in financial services, although some countries have put in place greater regulatory limits on the movement of capital and liquidity among banks.

The paper then considers the literature on the benefits and risks of global banking. Research has found that the benefits of capital flows and foreign bank presence can vary by both flow, and home and host characteristics. The type, origin and destination of the capital flow can all matter, with foreign direct investment most likely beneficial in term of economic growth. And if countries meet certain macroeconomic, economic and financial thresholds, all capital flows are
likely to be greater and also more beneficial. In terms of presence, foreign banks more likely have positive impacts on financial systems and in economies more developed and with lower barriers to capital flows and entry. There can again be threshold effects, where greater presence and foreign banks with larger market share have greater beneficial effects, including on SMEs’ access to finance. Also healthier parent banks mean more likely more and better local credit. And even though foreign banks can “cherry pick” borrowers, particularly in low-income countries, this is less so when banks are from home countries close by and large locally.

In terms of risks, notably possible adverse effects on overall financial and economic stability, the literature has highlighted that in general risk-sharing through global banking has two sides. On one hand, local risks are diversified internationally through cross-border claims and global banks can support their foreign affiliates during periods of stress in the host market. But the flip side of being financially integrated is that international volatility and (funding) shocks to parent banks and home countries can be transmitted across borders, including to foreign affiliates, and negatively impact local lending and economic activity. The two effects, and the balance between them, importantly differ again by host and home country circumstances. Capital flows are more likely stable when the country has met certain thresholds. Yet, the types of flows, their destinations, and the compositions of the final investors’ base also matter: notably (short-term) flows to the banking system, and from mutual funds and some other investors can be more volatile. Heterogeneity also matters for shock transmission and financial stability: for example, while foreign banks tend to reduce local lending more than domestic banks do during periods of global stress, they do not so compared to internationally-funded domestic banks. Also, lending is more stable when foreign banks rely more on local deposit-taking and are large.

The paper lastly reviews some regulatory challenges highlighted by the GFC, and the implications of both the increased roles of emerging markets and developing countries and the greater regionalization in foreign banking. A principal lesson of the GFC is that banks are “global in life, but national in death” (as per then Bank of England Governor Mervyn King), as many governments had to support their banks (and banking systems more generally), even when losses were largely due to their international operations. Moreover, some national actions (or a lack thereof) negatively affected other countries. Therefore, enhancing international coordination in supervising global systemically important banks (G-SIBs) and dealing with their failures is now recognized as crucial. With global banking becoming more regional, coordination could be easier, with the euro zone Banking Union the prime example of how to improve in all dimensions – entry, regulation, supervision, deposit insurance, and resolution. Important progress is also that many countries are adopting the FSB "Key Attributes of Effective Resolution Regimes for Financial Institutions” and some (bilateral) agreements on mechanisms for dealing with failing G-SIBs are being put in place between major jurisdictions. But it is also clear that much remains to be done on international resolution, including on modalities for liquidity support and burden sharing.

The outline of the paper is as follows. Section 2 describes the developments in global banking, covering both cross-border capital flows and foreign bank presence, before and after the GFC. It also reviews what the literature has found in terms what drives the changes since the GFC,
distinguishing supply, demand, and regulatory factors. Section 3 reviews the literature on the benefits and risks of global banking, analyzing among others, impacts on domestic financial development, access to financial services, and the relationships between local lending and cross-border banking flows. In terms of financial stability, it reviews evidence on risk-sharing involving both exporting and importing financial shocks. Section 4 reviews the policy agenda, first on why global banks can give rise to systemic risks, both national and cross-border, and then what those risks imply for the reform agenda. It emphasizes the choices that need to be made regarding the so-called “financial trilemma”, that is, the incompatibility between unrestricted cross-border banking, national financial and regulatory independence, and overall financial stability. The last section, 5, concludes and provides outstanding research questions.

2. Developments in global banking pre- and post-global financial crisis.

This section reviews first the state of global banking before the GFC, focusing on the two most important forms of trade in financial services, cross-border bank flows and foreign bank presence around the world. It then describes how global banking has changed since the GFC, highlighting the large impact of balance sheet impairments and regulatory changes for banks from advanced countries and the more secular increase in the role of emerging markets and developing countries.

Developments pre GFC

When discussing financial globalization, it is useful to start with reviewing the forms in which trade in financial services can occur. As commonly used by the World Trade Organization, trade in (financial) services can encompass one of four forms: 1. cross-border claims/flows, e.g., lending and deposit taking, but also (re-)insurance; 2. the consumption abroad, including through the movement of consumers to the territory of suppliers, e.g., the purchase of financial services by consumers while travelling abroad. 3. financial FDI, in the form of foreign bank, insurance, etc. presence, where presence can be in the form of a subsidiary or a branch, and which can materialize through mergers and acquisitions (M&As) of existing banks or new investments (greenfield); and 4. the supply of services through the presence of natural persons, such as independent financial consultants or bank managers, of one country in another. Of these four modes, the second, consumption abroad, and the fourth, trade in person, are quantitatively of little importance and raise also little policy issues. As such, the research has focused on cross-border bank flows (mode 1) and foreign bank presence (mode 3).

Cross-border banking flows. The pre-crisis period was of course characterized by a large increase in financial globalization, both through cross-border banking and foreign bank presence. This pre-crisis rise in cross-border bank flows has been well documented in many papers, notably by Lane and Milesi-Ferriti (2001, 2007), and subsequent updates to their database. Figure 1 depicts the sharply increasing stock of claims as a percent of the recipient countries’ GDP before the GFC. This increases was triggered by the general globalization over this period, including in trade and expansion abroad through FDI in goods and services. The fact that banks started to lend to all corners of the world reflected not only market forces, but also deregulation
as countries, both emerging and developing, (further) opened their capital account (see further Fernandez, Klein, Rebucci, Schindler and Uribe, 2015, for data on the evolution of countries’ de-jure capital account openness). Indeed, while countries that liberalized saw greater increases in cross-border assets and liabilities, those others that did not liberalize saw large increases as well (Figure 2). All in all, the stock of cross-border bank claims (in real 2007 dollars) increased two-fold over the period 1995-2007.

The trend of increased financial globalization was not uniform, however, and there were distinct patterns in terms of lending and borrowing countries, and bilateral directions and regional allocations. Clearly, banks in advanced countries were at the forefront of lending cross-borders, often among each other. Among these, US banks were less aggressive over this period than they had business environment in earlier periods, while many (smaller) European countries became quite large lenders. In term of recipients, advanced countries were also the most important, in large part as asset and liabilities among advanced countries often offset each other, i.e., while gross flows among advanced countries tended to be large, net flows can be small. For emerging markets, this was less so the case and many were on net recipients of large inflows, at least until the GFC.

In terms of bilateral patterns, distance – geographical, institutional and cultural – has, similar to a bank’s operations generally,¹ been found to be an important variable in explaining the pattern of bilateral banks flows (Portes, Rey and Oh, 2001) and other capital flows, including equity portfolio flows (Portes and Rey, 2005). This importance of distance explains in part the patterns in bilateral bank capital flows, and its heavy regional concentration. Physical distance, however, can be a poor proxy for informational and other (financial) frictions, as the presence of large flows among some advanced countries that are institutionally close shows. And regardless, it is clearly not the only factor driving capital flows. The very large intra-euro flows for example reflect not just closer distances but also greater economic and financial integration.

Foreign bank presence. Over this period, financial globalization also increasingly happened through foreign bank presence (Figure 3) with growth especially high in emerging markets and developing countries (Figure 4). Similar to the developments in cross-border banking, this growth was triggered by multiple factors related to globalization (Claessens and Van Horen, 2014b). One factor very specific to foreign bank entry was the banking privatization in many regions and related sale of banks to foreigners. In East Asia and Latin America, this opening up and related foreign bank entry happened following their crises in the late 1990s, whereas in Central and Eastern Europe it followed from their transition to more market-based economies, as well as some crises, in the early 1990s.

As a consequence of this entry, foreign bank presence became very large in the late 1990s and 2000s in some emerging markets, with market shares (in terms of number of banks) in 2007 exceeding 80% in 14 countries and more than 50% in 63 out of 118 countries (see further

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¹ A bank collects and processes various types of information to screen and monitor borrowers and projects for creditworthiness and riskiness, and more generally to reduce agency issues. To allow a bank to offer customers this way financial services at better terms than other banks or providers may, it needs to be close to them (Rajan, 1992; Petersen and Rajan, 2002).
Claessens and Van Horen, 2014b). There was a large variation though, as some emerging markets had less than 10% foreign market share (besides Cuba and Ethiopia, for example Saudi Arabia and Haiti). Also in many advanced countries foreign bank presence was low, e.g., in half of advanced countries less than 25 percent. In the fact, host country’s GDP/capita and foreign bank presence are negatively correlated (-0.45). Also in general, when small in terms of number shares, foreign banks are more likely niche players, capturing an even smaller share of the market in terms of assets. Whereas if their number shares are large, then they are likely even more important in terms of financial intermediation, capturing a larger share of assets. This pattern reinforces the greater foreign bank role in emerging compared to advanced countries.

In terms of home countries, there has been a very high concentration, at least as until the mid-2000s, as a few countries have large foreign bank “exports”. Notably, the majority (66%) of foreign banks as of 2007 were owned by banks from North America, mostly US, and Western Europe, mostly the UK. Nevertheless, already in 2007, parent banks from emerging markets and developing countries started to invest abroad and their shares in numbers were non-negligible (19% and 7% respectively).

Research has identified several factors, besides differences in the removal of entry restrictions and privatizations, which explain the degree of foreign bank penetration (Claessens and Van Horen, 2014a, review). Earlier studies found that investment tends to correlate with trade and general FDI flows, which can be multinational companies or other forms of FDI, indicating that foreign banks tend to follow as well as lead their customers. Host country expected economic growth and local bank inefficiencies, as well as low costs and efficient regulations are also important drivers. Besides having access to clients with sufficient growth potential and an institutional environment where claims can be legally enforced, being able to acquire and use information efficiently was also found to be important explanatory factors for the entry of foreign banks. And number of empirical studies have shown that foreign investment is greater when countries are “closer,” either geographical, cultural or institutional, likely as it helps the ability to manage from afar and transfer soft information within the banking group.2

Given this importance of “distance,” it is not surprising to see some strong bilateral patterns in foreign investments. Table 1 shows that as of 2009, banks from OECD countries (the biggest investors) tend to invest mostly in other OECD countries or emerging markets. And banks from emerging markets tend to invest in other emerging markets or developing countries, while banks from developing countries tend to invest in other developing countries or emerging markets. So banks seem to seek out host countries that are relatively similar to or lower than their home market in terms of income levels and institutional development.

2 However, in a multi-country world with many banks seeking opportunities, entry decisions are not made in isolation and all competitors needs to be considered. Consistent with this notion, Claessens and Van Horen (2014a) show that, besides distance, competitor remoteness – the weighted average distance of all competing banks to a host country – also importantly drives location decisions, similar to how remoteness is useful in explaining the direction of trade flows.
Related are the strong regional patterns in foreign bank presence. Splitting countries in four broad geographical regions that cut across income groups (America, Asia, Europe, and Middle East and Africa) shows that the majority of foreign banks always come from within the region (Figure 5), with the highest intraregional share for Middle East and Africa, more than 70%. This regional pattern is in part as again foreign banks tend to follow as well as lead their customers, presumably taking into account the degree of competition and growth opportunities in the host market, and invest institutionally as well geographically close, as within Europe. Importantly, comparing 1995 to 2009, this pattern has become stronger for all regions.

**Developments post GFC**

Post GFC, the general view is that global banking has become more fragmented. This is captured in headlines such as those of the *Economist*: “Since 2008 global financial integration has gone into reverse” (October 2013), as well as more in-depth analysis, such as that of the ECB: “Some banks have resumed their cross-border activities, but the level of integration in the banking markets remains lower than before the financial crisis” (April 2014). Analyses, however, show that while this notion of increased fragmentation somewhat applies to cross-border claims, it is less relevant to foreign bank presence, where the crisis has rather accelerated a more secular trend. And fragmentation also does not apply to the de-jure as countries are still opening up their markets.

**Changes in cross-border banking flows.** The crisis came with an unprecedented collapse and shifts in the structure of capital flows in general and cross-border bank lending in particular (Figure 6). Contrary to past episodes, all types of countries were affected in the aftermath of the Lehman collapse, although emerging economies experienced a shorter-lived retrenchment in the capital inflows than advanced economies did, as shown by Lane and Milesi-Ferretti (2012). And the subsequent euro crisis puts further strain on that region’s banks, and its intra-region capital flows dropped sharply (see Bologna and Caccavaio, 2014, Laeven and Tressel, 2013, and IMF, 2013b).

The focus post global and euro zone crises has largely been on the collapse in cross-border bank flows among advanced countries and the fragmentation of financial markets within the euro zone. Indeed, European and, to lesser extent, American banks sharply reduced their cross-border operations. They did so for three set of reasons; foremost, they were forced to do so as markets and regulators wanted them to restore their balance sheets and profitability; second, they cut back as demand for external financing abroad was less, and sovereign and other forms of country risks increased; and lastly, over time, they had to meet tougher regulations, including stiffer capital and liquidity requirements and other new rules, and some faced restrictions on moving capital and funds across borders.  

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3 Forbes (2014) distinguishes six factors affecting changes in capital flows, which can grouped in similar ways under the three headings of supply, demand, and regulatory changes: 1. a. higher cost for banks to go abroad; b. reduced access to wholesale funding; c. weakness in individual bank balance sheets; 2. weakness in the demand for loans. 3. a. repercussion of crisis-resolution packages; b. regulatory changes.
Evidence, although some suggestive, that the post crisis decline in cross-border banking is driven by all three set of these “drivers” – supply, demand, and regulatory – comes from multiple indicators. In terms of supply, i.e., lender banks’ balance sheet deterioration (e.g., capital shortfalls, liquidity strains) and a reshaping of global banking system, evidence comes from the fact that the cutbacks in cross-border banking claims varied greatly across lenders (Figure 7). In terms of demand, i.e., a weakening of demand among borrowers and increased default and country risks, supportive evidence is that the cutbacks greatly varied across borrowers (Figure 8). In terms of regulatory changes, i.e., the many new rules, including Basel III, new liquidity requirements (LCR and NSFR), other regulatory changes, the more common stress tests, overall increased uncertainty and various forms of home bias, although formal evidence here is scarcer, likely all played a role.

Identifying the relative importance of each of these drivers, i.e., to separate supply from demand factors, and regulatory pressures from underlying trends reshaping the global banking system, is obviously. Even though attribution to specific drivers thus has to be tentative, some analysis can be used. Observing bilateral changes allows for a more formal exercise separating demand (borrower country) from supply (banking system) factors. Specifically, since at a given point in time (say the period right after Lehman) banking systems from various lender countries all face the same demand conditions for a given borrower country, relative differences in changes in bilateral lending must reflect either differences arising from the supply side or specific lender-borrower relationships. This identification strategy has been used first by Khwaja and Mian (2008) and subsequently by other papers on capital flows and finance more generally.

Cerutti and Claessens (2014) use this method to tease out supply versus “frictions” as drivers of flows during the period following the Lehman bankruptcy (see also Van Rijckegehm and Weder-di-Mauro, 2014). The cutbacks in cross-border claims varied indeed greatly by lending-borrowing country pairs over the period 08Q2-09Q2 (Figure 9). Bilateral cutback also varied for affiliates’ claims, but less so (Figure 10). This clear pattern of heterogeneity in changes, also seen in subsequent periods, such as the intense European sovereign debt worries during 2012, suggests that both borrower and lender characteristics played a role in the decline and shifts in capital flows (it does not negate though the roles of financial and regulatory frictions inhibiting the free flow of capital). Testing this formally, Cerutti and Claessens (2014) use a number of variables to capture banking system fundamentals on the supply side. Specifically, they use SRISK, of Acharya et al (2010), to capture the perceived solvency risk of banks. While developed after the GFC, SRISK is a forward looking measure of the vulnerability of banks calculated at historic points in time. It is based on individual bank data, including its stock price and key balance sheet variables, and proxies, in dollars, for the amount of potential capital losses

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4 Using some econometrics, the fact that all lenders face the same demand means that just using borrower country (if using an event) and country*time (if using a panel with multiple periods) fixed effects is sufficient to capture the borrower-specific demand, i.e., control for changes in economic activity and prospects in the borrower country.

5 See also Cetorelli and Goldberg, 2011; Popov and Udell, 2012; Kalemli-Ozcan, Papaioannou and Peydro, 2013; Minoiu and Reyes, 2013; Cerutti, 2014; and Cerutti, Hale, and Minoiu, 2015, for analysis of the drivers of changes in (various forms of) capital flows post GFC.
under an adverse scenario. It can be scaled by banks’ total balance sheets, (Tier I) capital or the country’s GDP, to provide a relative measure of the lending banking system’s and country’s overall vulnerabilities as perceived by markets. Importantly, SRISK, as measured just before the GFC, is exogenous to the deleveraging episode itself.

Accounting and other more backward-looking variables can also give indications of vulnerabilities and subsequent supply drivers of (international) deleveraging. Here variables traditionally used are Tier I capital, relative to (risk-weighted or unweighted) assets, the degree of non-performing loans (NPL), as well as the return on assets (ROA) of the bank. Also the degree to which banks rely on non-core liabilities has been found to be an important indicator of vulnerabilities (e.g., Huang and Ratnovski, 2011. One can also include here regulatory actions and the provision of government support once a systemic banking crisis has occurred. Ring-fencing and other such measures can clearly limit the flow of resources within banking groups. And the support provided during a systemic crisis, an ex-post measure, provides for an indicator whether a government may lean afterwards on banks to lend more at home and less abroad (i.e., moral suasion). It is also a measure of the degree to which there may have been ex-ante moral hazard related to too-big-to-fail and other forms of excessive safety net.

Banking system conditions and other factors varied greatly across lending countries before the crisis. SRISK, the ex-ante measure of systemic value at risk, was for example very high for countries such as Switzerland at the eve of the GFC. Accounting indicators (NPL, ROA) were less varied, however, and the market views differed considerably from these measures. Furthermore, market-based supply conditions also varied more over time. Comparing countries’ score on the SRISK pre-Lehman (end of 2007) with those same measures pre-euro crisis (end of 2011), shows that while several countries (Switzerland, US) reduced their vulnerabilities, many others, notably in Europe, actually increased theirs in the opinion of financial markets.

The analysis by Cerutti and Claessens (2014) shows that banks’ cutbacks were driven by their (perceived) capital at risk as well as them facing systemic crises, and adverse global financial conditions more generally. Interesting though, market indicators of vulnerabilities were less important for European banks, and more so for US and Asian banks. This suggests that banks varied in how much market or regulatory discipline forced them to deleverage. And they find that accounting supply variables not significant in predicting deleveraging, sometimes even providing the “wrong” signals. Furthermore, for affiliates’ lending, the degree of capital perceived to be at risk in HQ was not as important, suggesting some insulation for foreign banks from shocks at home. At the same time, it suggests some increase in internal market or regulatory frictions. Still, a systemic crisis in the home country did trigger decline in affiliates’ claims as well, a finding which could be interpreted as a form of “home bias” following the, often massive public support. Evidence also suggest that, controlling for capital at risk and

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6 For example, the ratio of non-performing loans and the return on assets have a positive sign. This could reflect that those banking systems more active international were also taking more risks before the crisis and less willing to classify loans as possibly non-performing and provision for possible loan-losses. Similarly, they may have overstated their profitability. As a consequence, the lower the non-performing loans ratio and the higher their return on assets, the more they had to cut back after the crisis erupted.
demand, banks decreased lending to high exposures, i.e., they “rebalanced” their portfolios. They also cut back more to “further” countries and less so to recent former colonies. In terms of affiliate lending, banks did not cut for affiliates with common language, but they did decrease in countries with extensive pre-crisis trade relationships. These differences likely reflected banks’ strategic choices as to which borrowers to prioritize, depending on longer-term profitability.

Borrowers’ risk to deleveraging was also affected by their relative reliance on cross-border credit vs. affiliates’ lending. This reliance varied as not all affiliates fully depend on parent or foreign markets for their funding (Claessens and Van Horen, 2013). Many foreign banks have large domestic funding sources, which are, and proved to be during the GFC, relatively stable. Reflecting this stability, the relative reliance among foreign banks on foreign credit vs. domestic fund helped predict which countries experienced sudden withdrawals following the start of the financial turmoil in 2007 (see also Cerutti, 2015). It was also a predictor of those countries at risks of banking outflows during the European crisis in 2010.

While this methodology does not allow one to identify changes in borrowing country demand and various forms of country risks, as it controls for those using dummies, there is other evidence that these factors played large roles as well, notably within the euro zone. Bologna and Caccavaio (2013) show that increased borrowing country and sovereign risks were actually the main determinants of banks’ retrenchments within the zone, especially after 2010, when the euro crisis peaked. And Laeven and Tressel (2013) also show that host sovereign and bank CDS spreads explain a large share of the decline in intra-euro claims of euro area banking systems during 2010Q1-2012Q2 (with flows somewhat reversing when spreads stabilized afterwards).

Changes in foreign bank presence. There have been considerable shifts in foreign bank presence since the GFC (see Claessens and Van Horen, forthcoming). While the number of foreign banks exiting markets remained more or less the same, there was much less entry after the crisis: only about one-fifth as many foreign banks entered compared to the peak year, 2007, just before the crisis. As the number of exits was similar, net entry became negative for the first time since 1995, i.e., there was some retrenchment (Figure 11). As the number of domestic banks declined as well, the aggregate market share of foreign banks in numbers remained at about 34 percent as of end 2013 (Figure 12). The asset share declined, however, as domestic banks overall grew their balance sheets faster than foreign banks did, in part as many parent banks saw their balance sheets impaired. Yet, foreign banks still accounted for some 11 percent of global bank assets as of end 2013, down only slightly from a peak of 13 percent in 2007.

These aggregate trends hide some important variations and differences, both among host and even more so among home countries, and reflect shifts in global economic and financial powers. While for 59 host countries, foreign bank presence declined, for 45 countries it actually increased (Figure 13). Although the number of foreign banks declined somewhat since the crisis, much activity has been in the intensive margin as a number of foreign banks were sold to other foreign parents. Using the bilateral changes, which were large (Figure 14), analysis by Claessens and Van Horen (forthcoming) reveals a number of factors at the bank, home country, host country and bilateral level behind these changes.
For one, banks more likely completely pull out when their home country experiences a banking crisis and especially when the bank is from a euro zone country. A systemic crisis in the host country does not affect exit, which could reflect opposing forces. Foreign banks may be willing to support their subsidiaries when the host country is in crisis (and the home country is not) as others have found. But, a host systemic crisis makes for less profitable opportunities and therefore could increase exits. Overall, these effects seem to balance each other out. Competition from other foreign banks, from the same or other home countries, does not seem to play significant roles in a bank’s decision to exit a market. Individual foreign bank characteristics do matter, however. Notably, banks with smaller market shares and more recently established are more likely to exit. And banks from home countries that experienced a crisis more likely withdraw from markets more distant and less important as trading partners. Also, (exit) decisions of foreign banks tend to be more strategic and somewhat more driven by euro zone factors in the later (2010-2012) than in the early part (2007-2010) of the period.

Examining also the drivers of changes in individual bank’s balance sheets, Claessens and Van Horen (forthcoming) find that banks from countries hit by a systemic crisis at home expanded their foreign banks’ assets less, controlling for general asset growth in the respective host market. Foreign banks in euro zone host countries reduced their assets less than local banks did, suggesting that they acted there as sources of stability. While more recent entrants and banks with small foreign presence before the crisis grew their balance sheets more, distant foreign banks had lower asset growth. In terms of entry, fewer banks entered from home and in host countries facing a systemic crisis and from and in euro zone countries. Entries were greater where the (bilateral) presence of foreign banks was already large and that were closer to, had more trade links with, and experienced faster growing trade with the banks’ home countries.

Many of these changes relate (again) to the problems banks in many advanced countries faced following the GFC. But they also relate to the growing importance of banks from emerging markets and developing countries, reflecting more trend changes in global banking. Notably, emerging markets and developing countries continued their increase in foreign bank presence and represented close to 60 percent of the new entries. Indeed, while banks from OECD countries tend to drive the exit results, banks from non-OECD countries tend to drive the entry results. While as of end 2013 bank ownership by OECD countries still represented 89% of foreign bank assets globally, this was 6 percentage points less than before the crisis, mostly on account of a retrenchment by crisis-affected Western European banks.

As a result of abovementioned developments, the global banking system encompasses now a larger variety of players. And foreign bank presence, already regionally concentrated, with shares of foreign banks coming from countries within the same region exceeding 50 percent, has become even more regional, with the average intraregional share increasing by some 4 percentage points, largely on account of emerging markets and developing countries, including them buying banks previously owned by OECD countries.

*Changes in openness and barriers to trade in financial services.* Although the crisis has led to a reevaluation of the risks and benefits of international banking and a tightening of domestic financial regulations, it did not discourage countries, in particular emerging markets, usually
already open and large hosts, from formally further opening up (Claessens and Marchetti, 2013). In fact, there was a general further elimination of restrictions on market access and discriminatory measures (which favor domestic over foreign firms) in banking, securities and insurance markets, as well as a consolidation of previous reform efforts. In addition, countries continued to enter preferential trade agreements, which most often also give financial institutions easier access to one another’s markets. Some 52 such agreements became effective since the onset of the crisis until mid-2013, two times more than between 2000 and September 2008. And although the so-called Doha Round of global trade negotiations made little progress in increasing market access and reducing barriers to trade in financial services, several liberalization initiatives have emerged over the last few years. Three of those initiatives hold the promise of further—and possibly significant—liberalization, including in financial services: the 13-nation Trans-Pacific Partnership; the Transatlantic Trade and Investment Partnership between the European Union, and the United States; and the Trade in Services Agreement (TISA), which involves 21 economies and the European Union.

These developments should be balanced with other, sometimes more anecdotal, evidence that regulations and informal barriers have risen. Regulatory effects here can go both ways, and effects ex-ante, i.e., before a crisis or a period of financial turmoil, can differ from those ex-post, afterwards. Take the ex-ante case where a country tightens its macroprudential policies by say lowering loan-to-value limits or increasing capital requirements. In the absence of full reciprocity by foreign authorities (i.e., if they do not also put similar restrictions on lending to the country), this could lead to more cross-border inflows as borrowers go directly to international financial markets rather than borrow from local banks, some of which may be foreign. There is some evidence of this: Cerutti, Claessens and Laeven (2016) document that a one STD increase in an index of macro-prudential policies (MPI) increases the ratio of cross-border lending to local lending by 3 pp, or about 1/6th of its standard deviation. Akinci and Olmstead-Rumsey (2015) also find leakage effects, in that total credit, which includes non-resident lending, i.e., some form of capital flows, is less responsive to macroprudential policies.

Of course, country and financial market characteristics matter here as the scope for avoidance is not equally large everywhere. For example, Cerutti, Claessens and Laeven (2016) find that effects are larger in more developed countries, maybe as borrowers find it easier to tap international alternatives, thereby circumventing domestic macro-prudential policies more. And the (regulatory) characteristics of the home country can also matter. Ongena, Popov and Udell (2013) document for example that lower barriers to entry, tighter restrictions on bank activities, and to a lesser degree higher minimum capital requirements in domestic markets are associated with lower bank lending standards abroad. They also find stronger effects when banks are less efficiently supervised at home, and are not offset by host-country regulation.

In terms of ex-post regulatory actions, there is anecdotal evidence and some research on ring-fencing. For example, Cerutti and Schmieder (2014) and D’Hulster (2014) document some additional limits on outflows and regulatory actions after the GFC in a number of markets, both developed countries and emerging markets (see further IMF 2015a). And banks that received government support may have been incentivized to reduce — including by selling subsidiaries
— their international activities (more).7 Also, the EU competition policy agency asked some European banks that were intervened and received state support to divest some activities and sell certain subsidiaries (Boudghene and Maes, 2012). As such, retrenchment decisions made were not only driven by bank choices, but also by home country factors.

To shed more light on the possible roles of ex-post regulatory measures, including limits to movements of capital, it is useful to compare developments in cross-border claims to those in foreign bank local lending following the GFC (Figure 15). This shows that there were sharper cutbacks in cross-border than in foreign banks’ local lending. This maintains when controlling for the behavior of general domestic credit, supporting the notion that foreign bank presence has been a relative source of stability for most markets, with cross-border lending more procyclical. The data also suggest that the entry by banks from emerging markets and developing countries with relatively stronger balance sheets and greater willingness to expand has mitigated declines in local lending in some markets.

At the same time, there remains much variation in local and cross-border banking lending at the country level (Figure 16). Beside home and host developing countries characteristics, and strategic choices by banks as to which borrowers to prioritize, (changes in) internal markets and regulatory frictions may have led to these differences. A test of the effects of these various frictions can be constructed by looking whether cutbacks differed between direct cross-border and affiliates’ claims in the face of shocks to their home banking systems, since demand and risk at the host country level was similar for both forms. Three scenarios can be envisioned of the potential evolution of direct cross-border and affiliates’ claims (see text chart).

In the first scenario, the internal capital markets of banking groups are unconstrained and accordingly transmit shocks equally across all parts of the groups. In this scenario, a negative supply shock to the lender home banking system i can be expected to lead not only to a reduction in direct cross-border lending to borrower j, but also for funds to flow from banks’ affiliates in country j to headquarters i (through the internal capital market) with an associated reduction of affiliates’ lending to borrower j. This way the shock is equally distributed. Note that while both direct cross-border and affiliates’ lending are adversely affected, responses do not need to be proportional. For example, if affiliates have special information on and relationships with local borrowers, they may adjust their lending less than what happens to direct cross-border lending in response to the same shock, as that would maximize overall value for the bank as a group.

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7 As part of government support, banks were often asked to focus on domestic lending. For example, French banks that tapped government assistance pledged to increase lending by 3–4 percent annually, and ING announced that it would extend €25 billion to Dutch businesses and consumers when it received another round of government assistance (World Bank, 2009). Also, support measures that ended up going to foreign banks were criticized ex-post by politicians. Rose and Wieladek (2015) and Kleymenova, Rose and Wieladek (2015) find some evidence of protectionism after the GFC using UK and US bank data in that banks lend more at home and in similar ways. As the literatures on home-bias and bank-sovereign links make clear, however, it is hard to separate the various motives for increased lending to local firms, households, and sovereigns. These include, beside protectionism, banks having greater information about borrowers closer by, internal market frictions, and banks’ preferred risk-return tradeoffs, some of which may appear as nationalism (e.g., buying risky own sovereign bonds, see Acharya and Steffen, 2015).
Potential Evolution of Direct Cross-Border Claims and Affiliates’ Claims

A second scenario envisions some form of “ring fencing”. Here the international banking group might face limitations on how much liquidity and capital, especially from its subsidiaries, can be moved through internal capital markets to other parts of the group. In this scenario, a supply shock to the parent bank can trigger a much larger response in terms of reduction in direct cross-border lending than the reduction in affiliates’ lending as headquarter banks are not able to tap into the liquidity and capital of the affiliates. Another possibility is that banks are told during the crisis by their authorities that, in exchange for support, they need to “lend at home,” and cut back (more) on their cross-border lending. And, countries can impose some forms of capital or banking controls, as happened in the case of Iceland, Cyprus and Greece.

In a third scenario, there are also limits on moving capital and funds internally, but banks try to overcome these limits through their lending operations. Here the reduction in direct cross-border lending to borrowers j is large, perhaps even larger than in the other two scenarios, but in this case part of this reduction is “compensated” for by an increase in affiliates’ lending to the same borrowers, as an indirect way of bypassing host countries’ ring-fencing of affiliates (again, given informational and relationships, the two forms may respond differently, but the relative impact would remain). This way banks mitigate the impact of barriers given shocks at home.

In reality, any three of these scenarios (or combinations thereof) may prevail for individual banks in specific home-host pairs. And, as noted, it is by nature hard to identify financial frictions and regulatory actions systemically. Lenders may choose whether to lend cross-border or local based on relationships, information, tax, and regulatory as well as balance sheets considerations. There are also many internal markets’ frictions in normal times, i.e., the cross-border movement of resources within banking groups not be perfect ever. For example, similar to non-financial corporations, budgets may be set annually and be hard to change quickly. Or local managers of the subsidiaries may at any time be reluctant to transfer funds back to headquarters, arguing profitability is higher in their markets.

All this may change in times of financial turmoil, but how is not obvious. Work on internal capital markets of global banks has found that banks can to some extent reallocate funds and liquidity across locations in response to host country crises. This has been shown directly for US
banks and indirectly by investigating the performance of foreign affiliates and domestic banks. Evidence for the GFC is not consistent, however. De Haas and Lelyveld (2014) do not find evidence of an active internal capital market, whereas Cetorelli and Goldberg (2012b) show that US banks adjust their interoffice liquidity and claims in response to variations in domestic liquidity (although the evidence is not as strong after Lehman). \(^8\)

Studying the variation among bilateral (source-destination) deleveraging after the Lehman shock, 2008q2-09q2, Cerutti and Claessens (2014) find evidence suggestive of internal markets’ or regulatory frictions since the patterns of direct cross-border and local affiliates’ lending differ by the size of the shock to the lender country banking systems. Specifically, more vulnerable home-banking systems see less substitution between the two forms. This suggests some unwillingness or inability to engage in intra-banking system transfers and is evidence of some barriers post-GFC. Studying how these differences vary by lender and borrower country characteristics can provide some more insights as to the presence (or lack) of barriers in internal financial markets and across regulatory regimes.

Summing up. Post-GFC, there have been large reductions in cross-border bank flows, driven by both adverse supply and demand factors, and regulatory changes. With much fewer entries and the same number of exits, the number of foreign banks declined, but not relative to domestic banks as they dropped more. Cross-border lending has been more volatile than local lending activities of foreign banks. Much of these changes reflect market forces, notably EU and US banks’ retrenchment and the increased roles of emerging markets and developing countries’ banks. While countries continue to further open de jure, home biases and regulatory barriers, including some ring-fencing, likely increased and the system is more regional focused.

3. Global Banking: Benefits and Risks

To evaluate the effects of the (ongoing) changes in global banking on related benefits and costs, the logical starting point is to draw on the findings of the (extensive) literature on financial globalization, also as it has evolved over time. This section therefore reviews existing research, covering first specifically the benefits and risks of cross-border bank flows, and then those of foreign bank presence. It highlights how the financial crisis has triggered much new research, with some additional findings and qualifications to past findings.

It was clear, even before the GFC, that financial globalization has both benefits and risks. Conceptually, the possible benefits are foremost that capital is allocated globally more efficiently and that risk-sharing is enhanced (see Kose, Prasad, Rogoff and Wei, 2009 and 2010 for extensive reviews of the academic literature largely written before 2008; for a related policy-based review see IMF, 2007). External financing may increase with more open capital account

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\(^8\) At the same time, Cetorelli and Goldberg (2012b) show that, when faced with a funding shock, global banks tend to reallocate capital within the holding towards “important” subsidiaries. While they do not study the lending behavior of subsidiaries, their results suggest that some affiliates might be forced to curb lending due to a reduction in funding from the parent, whereas other affiliates do not feel this pressure or might even be in a better position compared to domestic banks to continue to extend credit.
and domestic resource allocation may be improved with the import of better know how and technology and improved access to specialized skills, such as in trade finance. Pressures from foreign capital may discipline policy makers in their macroeconomic and financial managements, as it makes them less free to choose unorthodox policies, while entry of foreign financial institutions may help with competition and upgrading of regulation and supervision (Claessens, 2006). This may all lead to more capital and financing, greater allocative efficiency and higher growth. And in terms of financial stability, risks can be exported and shared more efficiently.

There were always reasons for caution, however. Borrowing from abroad comes with its own specific risks, such as increased foreign exchange exposures and other mismatches. To the extent that global finance is more procyclical than domestic finance is, the risk of (bad) financial booms followed by busts can increase. A greater role of foreign financial markets and institutions can lead to more cherry picking, reducing the franchise value of domestic players and possibly even adversely affecting overall local credit extension. And systemic risks can be imported, as when foreign banks hit by shocks at home (have to) cutback on lending to and withdraw from markets.

**The behavior and impact of capital flows**

The view before the crisis was that the balance between the benefits and risks of capital flows was favorable in general and more so (or provided) if the country met some “thresholds”. Notably, the literature (see Kose, Prasad, Rogoff and Wei, 2010), as well as policy makers at that time (e.g., IMF, 2007), highlighted the following factors: good macroeconomic management, a well-developed and sound institutional environment, trade openness, and a relatively large domestic financial sector. And it was acknowledged, that while less developed countries were not necessarily going to receive more external financing (the “Lucas paradox” of capital not flowing to the south), they might still benefit from increased risk-sharing, again as long as they met these thresholds.\(^9\)

The literature did highlight many aspects though that served as caveats. One is that the behavior of gross flows can vary from that of net flows (IMF, 2010). What is meant here is that gross inflows and outflows can be quite volatile, but that the variation in net flows (the difference between grow inflows and outflows) can be much less as movements in gross inflows and outflows would most often offset each other.\(^10\) This offset is more the norm for advanced

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\(^9\) The Lucas (1990) paradox is the observation that capital, on average, flows from poor to rich countries, rather than from rich to poor countries. Prasad et al. (2006), besides finding support for it, note that the Lucas paradox has intensified over time and there is no clear relationship between stock or flow measures of capital flows or financial liberalization and growth. Furthermore, Gourinchas and Jeanne (2013) find a negative long-run correlation between productivity growth and net capital inflows across non-OECD countries. They dub this the “allocation puzzle” and find that it is mostly a feature of public flows, with international reserve accumulation to play an important role. Alfaro, Kalemli-Ozcan, and Volosovych (2008) find evidence that institutional quality is the leading explanation. Others, such as Stulz (2005), pointed out the limits of financial globalization in relation to (corporate) governance.

\(^10\) Some terminology is important here. In balance-of-payments terminology, gross inflows refer to the net effects of foreigners’ purchases of domestic securities and foreigners’ sales of domestic securities. Gross outflows refer to the net effects of domestic residents’ purchases of foreign securities and domestic residents’ sales of foreign securities. Inflows and outflows are net items themselves, and can thus be
countries as for those large movements in gross capital inflows are most often accompanied by large gross outflows, in part as investors undertake arbitrage and hedging positions across markets in anticipation of exchange rate and other asset prices movements. As such, the behavior of non-residents is often compensated for by that of residents with both residents and non-residents having large stock positions. Emerging markets typically have higher volatility in net flows, however, in part since they have smaller private (and official) foreign asset positions than most advanced countries do, making it harder for them to offset non-resident flows.

Also for advanced countries, there is a significant degree of substitutability across and offsets between various types of flows, where type refers to (bank and non-bank) debt, (equity and bond) portfolio, foreign direct investment, and the like. This means that for advanced countries each type of flow can individually be more volatile than the sum of the flows as say portfolio flows negatively correlate with debt flows. Related, effects of changes in gross flows on domestic financing and real economy could be less for such countries. For emerging markets, however, there is typically less offset among flows and the behavior of overall gross flows is thus quite volatile (see further IMF, 2013, and Bluedorn et al, 2013).

Another aspect highlighted for some time has been that the volatility can vary by type of capital flow. Early on Claessens, Dooley and Warner (1996), tried to make inferences regarding the properties of different types of capital flows. They found that capital flow ‘labels’ do not closely correspond to time series properties such as volatility or persistence, and they questioned the common presumption that short-term debt is the more volatile of the various types. However, several later studies (Levchenko and Mauro, 2007; IMF, 2011) suggest a ranking of flows in terms of volatility. Specifically, banking flows and other private flows tend to be more volatile than other flows, and FDI-related flows are the least volatile. Also the persistence of debt flows is considered to be low, and usually the least for portfolio debt flows, especially for emerging markets. Another, somewhat related issue has been the procyclicality of various types of capital flows with respect to the domestic economy. The properties of capital flows are, however, still an area of ongoing research and debate.\textsuperscript{11}

\textsuperscript{11} In a comprehensive study, Contessi et al. (2013) analyze the second moments and cyclical properties of disaggregated gross capital flows with respect to the macro variables GDP, investment and real interest rates. They propose the following stylized facts: In most countries, debt is the most volatile flow, FDI the least volatile; Gross capital inflows are procyclical with respect to output, investment and the real interest rate; Net outflows are countercyclical with respect to output and investment; They are procyclical with respect to the real interest rate in most developing countries but counter-cyclical in most advanced countries; All types of inflows are pro-cyclical with respect to GDP in advanced countries; All types of inflows except FDI are pro-cyclical with respect to GDP in emerging markets; In G7, all disaggregated flows are generally positively correlated with investment and, to lesser extent, real interest rate; Debt inflows are pro-cyclical with respect to all three macro variables except for advanced countries between
The GFC has confirmed, but has also disproven some of these properties. In terms of risks, the threshold premise for increased risk-sharing did not materialize as suggested, as advanced countries with generally better institutional environment, macroeconomic and financial systems experienced much volatility in (gross and net) capital flows and often to a greater degree than emerging markets, which were generally thought to score lower in these dimensions. The “flight home” during the GFC was general as capital was reallocated back to many investor and creditor countries (Giannetti and Laeven, 2012, and De Haas and Van Horen, 2012 and 2013).

Other “well-established” properties of capital flows have also been questioned. Lately, research has been investigating the heterogeneity in flows. Flows to and from particular countries can vary, besides their type (as discussed), along (at least) two other dimensions: their destination – monetary authority, as in official reserve accumulation, local banking system, non-financial corporations, households, capital markets, and public sector; and their source – official sector, including multilateral financial institutions and bilateral lenders, foreign domiciled banks, mutual funds and portfolio investors, institutional investors, such as pension funds and insurance companies, and in principle foreign households. In some of these dimensions, type, destination and source distinctions will overlap, as in FDI, where the type (a majority equity investment), destination and source, both non-financial corporations, overlap. In other cases, however, this need not be the case. Short-term debt flows, for example, can go to multiple sectors in the borrowing country and can come from banks as well as non-banks.

In term of destinations, the general finding has been that flows to the banking system, especially those flows from banks, are more volatile. And indeed post-GFC, as noted, these flows have declined the most, more so than flows to non-financial corporations. Portfolio flows to equity markets and bond markets are generally considered to be volatile as well, with debt flows more so than equity flows. And, as noted, FDI has been considered the least volatile. Fewer papers have explored differences in volatility related to source or investor bases. Some, such as Bruno and Shin (2015a and 2015b), document how international active banks expand and contract their cross-border claims, in part in response to monetary policy conditions in advanced countries, and at the margin towards (or away from) emerging markets. Also, more internationalized economies

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1992 and 2005 (counter-cyclical with respect to investment and real interest rate); FDI outflows are procyclical with respect to all three macro variables in G7; Episodes of capital account liberalization in G7 and other endogenously determined ‘break’ dates are associated with a statistically significant increase in flow volatility but not with systematic changes in correlations or covariance of different types of flows and macro variable. Broner et al. (2013) further study aggregate gross flows and propose the following stylized facts: Gross flows are more volatile than net flows; Gross flows are pro-cyclical, with foreigners investing more domestically and domestic investors more abroad during domestic expansions; Between 1970 and 2009, magnitude and volatility of gross flows increased, reflecting in part increasingly positive correlation between gross inflows and outflows. Gross capital flows are procyclical (asymmetrically so because there is considerable retrenchment after crises). All this argues against sweeping generalizations and against uniform patterns in the behavior of particular types of flows. This is in the spirit of Claessens et al. (1995), and more recently of Milesi-Ferretti and Tille (2011) who documented large cross-country heterogeneity in the behavior of flows post GFC.
and with a larger foreign (bank) presence, most typically emerging markets, can be more affected by global financial and monetary policy conditions (Cetorelli and Goldberg, 2012c).

In terms of portfolio flows, research is more extensive (see Gelos, 2012 for a recent review). Raddatz and Schmukler (2012) and Puy (2013) have found that international fund flows, in particular to and from emerging markets, tend to be highly pro-cyclical with financial conditions at home and often independent of the state of the borrowing countries’ fundamentals. Also Raddatz, Schmukler and Williams (2015) document that international asset allocation by mutual funds are often driven by non-fundamental factors, including benchmarking to indexes, with subsequent (adverse) feedback loop effects. And Jotikasthira et al. (2012) have found that funding shocks originating in advanced economies, i.e., where funds are domiciled, can translate into fire sales (and purchases) for countries included in global mutual funds’ portfolios, in particular emerging markets.

Although the behavior of banks and mutual funds is now being documented, and is receiving increasing attention from policymakers, the international activities of other classes of investors (pension funds, insurance corporations, sovereign wealth funds as well as hedge funds) have not been studied extensively, largely as consistent data are missing. Still, some research exists. Chhaochharia and Laeven (2009) explore the investment allocation of Sovereign Wealth Funds (SWFs) and find that they tend to invest in countries with common cultural traits, more so than other global investors do, and are not entirely driven by profit maximizing objectives, rather they often follow non-commercial strategies. See also Bolton, Samama, and Stiglitz (2011), which reviews more generally SWFs, including their investment behavior.

While some studies on capital flow volatility have used recipient country’s characteristics as controls, few have analyzed how the various types of investor bases interface with recipient country’s characteristics, including the state of local financial markets, and how that in turn affects responses of capital flows to global monetary and financial developments. In a recent paper, Cerutti, Claessens and Puy (2015) do so. They first explore the comovements in aggregate inflows to emerging markets, and find significant heterogeneity across types as only bank-related and portfolio bond and equity inflows do co-move. Importantly, they show that the factors behind the sensitivities to common dynamics vary significantly across recipient countries, with market structure characteristics (the composition of the foreign investor base and the level of local liquidity) more important than country’s institutional fundamentals. Specifically, countries relying more on international banks and international funds are more sensitive to global factors. This suggests that the behaviors of these lenders and investors determine in part countries’ exposures to global factors through changes in capital flows.

These differences in behavior across various types explain in part the differences in overall capital flow volatility across countries, with in recent periods actually a move more in favor of stability for emerging markets. Following their own financial crises in the 1990s, emerging markets have much reduced their reliance on debt flows and in the 2000s, FDI and portfolio equity flows became more than half of overall flows, up from only some 20% in the 1980s (IMF 2011). For advanced countries in contrast, debt flows remained very important, and FDI and portfolio equity flows only increased by some 5 percentage points from the mid-1980s, going
only from the mid-20s to the upper 20s. As a consequence, while the volatility of net flows increased for all countries over the three decades before the GFC, it increased less so for emerging markets (Figure 17). And, since for a given country, foreign bank local financing is typically less volatile than cross-border banking flows are, emerging markets with their larger foreign bank presence, were likely to experience less volatility during large shocks.

*Summing up.* While before the GFC, the impact of capital flows on the real economy and financial stability was already realized to be complex, for countries above some thresholds, financial globalization was generally thought to reduce volatility and the risk of crises. For countries below the threshold, typically emerging markets, it was considered more ambiguous. While it could mean more savings, these countries were also expected to import more volatility. This distinction, while useful, did not proof valid during the GFC when capital flows were very volatile for both advanced and to emerging countries. Subsequently, research has focused more on understanding the factors behind capital flow volatility, emphasizing among others the sources of financing (“investor bases”) as important factors.

*The behavior and impact of foreign banks*

The general consensus pre-crisis was that the impact of foreign banks on host countries was overall mostly positive, with multiple factors driving these benefits. Conceptually, foreign banks were thought to bring benefits in many ways (Levine, 1996). Foreign bank presence can mean additional sources of external financing and especially financing for specific activities with need for foreign networks and specialized skills, such as trade finance or investment banking-type activities, and for specific types of firms, such as large, multinational corporations, as well as some categories of wealthy households. Foreign bank presence can enhance competition domestically, thereby leading to lower rents, higher efficiency, and lower intermediation costs. Since foreign banks often bring with them improvements in products, as they can have superior technology and know-how, this can also spillover to domestic banks, and lead to a better overall quality of financial intermediation.

Besides increasing financing directly and indirectly and enhancing competition, foreign banks can pressure governments to improve their regulation and supervision, increase transparency, and more generally catalyze domestic reforms (Mishkin, 2007). They can also help with political economy issues by reducing the often close links between local banks and politicians. Foreign banks can also help with financial stability, in that they can export risks away from the host country, with the risk-sharing coming about in part as they have easier access to global funds and capital in times of stresses in the local economy or financial system. All of these improvements in financial intermediation and risk-sharing can in turn lead to increases in access to external financing and improved performance for final borrowers.

There is extensive empirical evidence that foreign bank presence can help and operate through many of these channels. While not always done, the starting point for an empirical analysis of the roles of foreign banks and whether and how they can contribute is comparing their behavior to that of domestic banks. Do foreign banks and domestic banks behave in the same or different ways? Are foreign banks’ activities complements or substitutes to those of domestic banks? Do
they provide the same or different types of financial intermediation services? From this follow questions how the behavior of foreign banks affects that of domestic banks and the overall domestic financial system. Do they indeed encourage a more efficient banking system? And, finally, how does this all affect the real economy, i.e., how does foreign bank presence affect access to finance for firms and households and in turn their performance? I will review the evidence on each of these issues next, leaving the financial stability assessment to last.

Behavior of foreign banks compared to that of domestic banks. Foreign banks are likely to differ from domestic banks, as much anecdotal evidence suggests. How pervasive these differences are and how they may vary by the country in which the foreign banks operate, and possibly by the bank’s home country, is less clear. It is obviously very difficult to capture with hard and public data for a large sample of countries the (different) business models of banks and how these compare between foreign and domestic banks. Using nevertheless information from available financial statements, as Claessens and Van Horen (2012) do, provides some insights. They show that on many indicators, foreign banks differ from domestic banks. Specifically, foreign banks on average have lower loan to asset ratios than domestic banks do, suggesting that they are less involved in traditional forms of financial intermediation (i.e., lending) and more in investment banking and other, less-traditional forms of banking. In emerging markets, however, the reverse is true: foreign banks tend to be more active in lending, possibly since in these countries they tend to be larger, as they often entered a market through the acquisition of a (large) domestic bank with many (retail) clients. Loan to deposits ratios are in general higher for domestic than for foreign banks, consistent with foreign banks being relatively less aggressive in lending, especially so in developing countries. However, in emerging markets, foreign banks tend to have higher loan to deposits ratios than domestic banks do. This suggests again that in these countries foreign banks are relatively more active in lending and are also able to attract non-deposit sources of funding (including from their parent banks).

In terms of capital, foreign banks tend to be less leveraged and have higher capital ratios than domestic banks do, especially in OECD and developing countries, with less of a difference in other high-income countries and emerging markets. Also, in other high-income countries and emerging markets, foreign banks tend to provision less for non-performing loans, maybe because they tend to target better quality firms. In terms of liquidity positions, foreign banks almost always have significant more liquid assets than domestic banks do. While this suggests that foreign banks operate more conservatively, since this liquidity measure includes tradeable securities, it could also reflect their general greater activity in capital markets. Together, this suggests that foreign banks are in general more conservative than domestic banks are with respect to their asset and liability compositions, including capital buffers.

Evidence that globally active banks have some special skills is mostly anecdotal (see Levine, 1996 for some examples). In a more formal analysis, Claessens, Hassib and Van Horen (2015), shows that foreign banks can notably facilitate trade over and beyond what domestic banks can do through (transfer of) specialized knowledge and technology, with important real benefits. Specifically, they find that financially vulnerable sectors tend to export more when a larger share of banking sector is foreign owned. And bilateral trade is even larger when a foreign bank from
importing country is present. Also, after the entry of a bank from an importing country, bilateral exports increase disproportionately more in external financial dependent sectors. All these effects are especially pronounced when a bank specialized in trade finance invest in countries with relative low financial development, suggesting that such banks provide real benefits.

These comparisons show that foreign and domestic banks differ substantially not only in terms of their asset mix and funding structures, but also activities. This in turn likely translates in varying bank performance, since Berger and Mester (1997) showed, in the domestic context, that the strategic focus of a bank and its funding and asset mix affect its performance. Additional factors likely matter as well, however. By servicing clients in more than one country, foreign banks can achieve greater efficiency and scale gains (see Berger (2007) and Hughes and Mester (2013) for a recent review of the literature on economies of scale). By being larger and spreading best-practice policies and procedures over more than one country, they may be able to afford more sophisticated models, gain superior risk management skills, and achieve greater productivity (gains). As they can diversify risks better and have wider funding bases, foreign banks’ funding costs may be lower, including through access to liquidity from their parent banks. They may thus be able to undertake investments with higher idiosyncratic risks, but also higher returns.

At the same time, in operating abroad foreign banks likely incur additional costs and face greater barriers in providing financial services than domestic banks do. They may for example have less information compared to local banks on how to do business in the host country, putting them at a disadvantage, or at least until they have been in the country for some time. Foreign banks might be exposed to unfair treatment by host country governments. Diseconomies might arise because of difficulties operating and monitoring from a distance or having to work in an institutional environment that is culturally or otherwise different. And, as size and complexity increases, diseconomies of scale may arise. Depending on whether beneficial or adverse effects dominate, (certain types of) foreign banks may perform better or worse than domestic banks do.

In practice, studies on the performance of foreign banks do find varying performances, with results varying in part by the host country, and sometimes by home country and bank characteristics (Claessens and Van Horen 2012, review). For the US, studies find that foreign owned banks perform significantly worse than domestic US banks do (Goldberg and Grosse 2001). For other industrialized countries, however, studies find that foreign banks perform better or not different from domestic banks. When studying foreign banks in emerging markets and developing countries, many studies find that foreign banks outperform domestic banks. Others, however, find the opposite or no significant differences between domestic and foreign banks. These differences in findings could of course reflect sample choices, as effects are likely to vary by bank and host and home characteristics.

Claessens and Van Horen (2012) reconcile some of these different findings by studying the performance of foreign relative to domestic banks in 74 countries over the period 1999 to 2006 (to avoid the impact of the recent crisis), exploring not just differences in host, but also in home and bank characteristics. They use return on assets (profit before taxes divided by total assets, ROA) as a measure of bank performance, a comprehensive, but of course reduced form measure. They control for a number of commonly used bank characteristics, including variables that aim
to capture risk-taking: ROA volatility, average growth of the bank’s loans, and bank leverage (equity to asset ratio). In addition, they include the market share of the bank, its loan to asset ratio, the ratio of deposit and short-time funding to total liabilities, a dummy capturing whether the bank exited the market within 4 years after entry, and the number of years it has been active in the country. In addition to these bank characteristics, they include country-year fixed effects to control for any unobserved host country characteristics including those that varied over time.

They find that foreign banks on average outperform domestic banks, with their profitability some 0.3 percentage points higher, economically meaningful given that the mean profitability is 1.6 percent. Foreign banks are especially profitable compared to domestic banks in developing countries, and less so in emerging markets. In contrast, foreign banks underperform domestic banks in high income countries, in line with DeYoung and Nolle (1996), and Mahajan et al. (1996) who studied foreign banks in advanced countries. Studies also found evidence that the behavior of foreign banks might relate to their relative importance in the host country (e.g., Claessens and Lee, 2003). Splitting the sample shows clearly that foreign banks are especially profitable in countries where they do not dominate, but where they dominate, their performance does not differ from that of domestic banks. Also in countries where the cost of contract enforcement is relatively high or the availability of credit information low, foreign banks tend to be more profitable than domestic banks. This could be consistent with foreign banks cherry picking customers and providing more financial services to high-margin clients in countries where they only have a relatively small market share and where institutions are weak.

In terms of home country characteristics, foreign banks perform better when from a high income country, suggesting know-how and access to capital matter (and also explaining why foreign banks in advanced countries tend do less well as these banks often come from less advanced countries). They also do better when their home countries have the same language and similar regulation as the host country. Being close to a host country also matters, potentially because it eases the collection of soft information and its transmission to bank’s headquarters.

**Impact of foreign banks on local banking markets.** Many studies have examined the consequences of foreign bank ownership on domestic banking systems. Before the crisis, the general consensus was that the benefits for the host countries greatly outweigh costs in many dimensions (see review papers by Clarke et al. (2003), Claessens (2006), and Chopra (2007)). Since the GFC there has been some revision. This section first reviews the literature on how foreign banks affect domestic banks and financial intermediation, next that on the links between foreign bank presence and financial stability, and last on the links between foreign bank presence and overall booms and busts, including those related to volatility in capital flows.

Early studies, e.g., Claessens et al. (2001), Mian (2003) and Berger et al. (2005), find that greater foreign bank presence coincides with lower overall costs of domestic financial intermediation (measured by, among others, margins, spreads, and overheads). Also, evidence exists of better quality, e.g., lower loan-loss provisioning and better performing borrowers (Martinez and Mody, 2004). Specific evidence for spillovers is lacking, but presumably include, besides the introduction of new, more diverse products, greater use of up-to-date technologies, and know-how, as well as increased competition in the host country. Interesting, as Claessens and Laeven
(2004) show, increased competition does not require a large foreign bank presence; what is more important is that the local banking system is contestable, i.e., without entry restrictions.

However, the literature also shows that effects tend to depend on conditions in the host country. Limited general development and entry barriers seem to hinder foreign banks’ effectiveness (Garcia-Herrero and Martinez Peria, 2007; Demirguc-Kunt et al., 2004). Also, the relative size of presence appears to matter: with more limited entry (relative to the total host banking system) fewer spillovers arise, suggesting again a threshold effect (Claessens and Lee, 2003). In terms of access to finance, results can vary by individual firm characteristics. Beck et al. (2004) and Berger et al. (2004) conclude that a larger foreign presence leads to a greater availability of credit to SMEs. Clarke et al. (2002) find that foreign bank entry improves financing conditions for enterprises of all sizes, although larger firms benefit more. Giannetti and Ongena (2012) show that large and foreign firms more likely have a relationship with a foreign bank, while small firms tend to be served by private domestic banks. They do find that greater foreign bank presence increases the probability that all types of firms get access to bank loans. Brown et al. (2011) find evidence of greater access to finance for more transparent firms only.

Some studies suggest, consistent with their higher profitability in less developed markets, that foreign banks “cherry pick” borrowers, negatively affecting overall private credit. Specifically, foreign banks can undermine access to finance by worsening the credit pool remaining for domestic banks, thereby lowering overall access, especially so in countries where relationship lending is important. Indeed, Detragiache et al. (2008) find that in low income countries, where relationship lending is more important, greater foreign bank presence is associated with less overall credit. However, Cull and Martinez Peria (2011) show that this effect disappears, or even reverses, once crisis-induced acquisition of (distressed) banks by foreigners is accounted for.

Claessens and Van Horen (2013a) re-examine this relationship for a sample of 111 countries, not just low-income countries and find several host country characteristics, not just general development, to matter. They find no significant relationship between foreign bank presence and the growth in private credit to GDP for emerging markets and high-income countries, but a negative one for developing countries, as in Detragiache et al. (2008). A negative impact also occurs when foreign banks have a limited market share, enforcing contracts is costly, and credit information is limited. These results, in line with other evidence, suggest that not the general income level, but rather certain market characteristics make foreign banks more likely niche players and cherry-pick customers, negatively affecting overall credit. Conversely, in other markets, notably where they have a large footprint, foreign bank presence adds to overall credit.

**Summing up.** While in general, global banks have many benefits for host economies, there can be conditions. Lower general development and larger barriers, including a weaker institutional environment, can hinder positive impacts. There can be threshold effect, where with limited entry, fewer spillovers arise. In contrast, greater presence and footprint (more branches) lead to greater access to external financing for SMEs. And healthier (parent) banks are associated with higher credit growth. Related, while foreign banks can “cherry pick” borrowers and even lower overall credit, this mainly arises in low-income countries, and not so when banks are large in the local markets and from close home countries.
Impact of foreign banks on financial stability. The role of foreign banks with respect to financial stability has been high on the policy and research agenda before and definitely since the GFC. As a start, it is important to realize that risk-sharing has two sides. Foreign banks can offer valuable diversification services and absorb shocks in the host market. Several papers highlight how foreign banks can enhance financial stability when there is stress or a crisis in the host country as parent banks support their subsidiaries. This has happened in many cases, notably in the fall of 2008 when foreign banks supported their international operation in Central and Eastern Europe (De Haas and Van Lelyveld, 2015; EBRD, 2015). But also earlier have foreign banks proven to be a source of financial stability. Studying episodes in (mainly) emerging markets and developing countries, Crystal et al. (2001) and De Haas and Van Lelyveld (2006) show that due to support of the parent banks, foreign affiliates did not need to rein in credit during a crisis in the host country, while domestic banks did contract lending.

While findings on exporting risks are in general favorable, effects are more mixed in times of global stress. Indeed, the flipside of risk-sharing is that (capital or funding) shocks to parent banks or their home markets more generally can be transmitted to foreign affiliates, negatively impacting their local lending and activities. When faced with shocks at home, foreign banks might withdraw from cross-border banking activities and redirect lending to home. Also parents may repatriate capital and liquidity from their foreign affiliates, which in turn can negative impact their supply of credit in the host market. The seminal studies of Peek and Rosengren (1997, 2000) show indeed that (funding) shocks to (Japanese) parent banks were transmitted to their foreign (US) subsidiaries with negative consequences for their lending and real economic costs. Schnabl (2012), on the other hand, shows that while the negative liquidity shock resulting from the Russian default in the late 1990s led international banks to reduce lending to both domestic and foreign-owned Peruvian banks, which in turn reduced their lending to Peruvian firms, parent banks continued to support their own Peruvian affiliates.

Studying the recent crises, analyses have also found that foreign banks can import risks. Studies suggest that at the height of the crisis global banks were transmitting shocks across borders through their affiliates. De Haas and Lelyveld (2013) compare foreign banks with large domestic banks and find that the former on average contracted their lending more. De Haas et al. (2011) find similar results for a sample of Eastern European countries. Cetorelli and Goldberg, (2011) also document spillovers to emerging markets in their analysis using BIS data for globally active banks in 17 source countries, but also transmission of bank distress to firms’ access to external financing. Popov and Udell (2012) show that if banks in the vicinity of the firm were experiencing distress at the onset of the global crisis, the likelihood of a firm being credit constrained increased, with this transmission also to take place when shocks occurred to the balance sheet of the parents of subsidiaries. As in Eastern Europe shocks coming from abroad were large and many firms became more credit constrained, spillovers were also the focus of policy. The Vienna Initiative (VI) specifically aimed to address this, with some benefits. Indeed, De Haas et. al. (2015) in a thorough analysis show that banks participating in the VI were relatively stable lenders (see further EBRD, et. al. 2015 for an overview).
Still, experiences do not easily generalize, and, as other recent studies suggest, with respect to financial stability, similar to foreign banks’ effect on access to finance, one cannot look at foreign subsidiaries as a homogeneous group. Cull and Martinez Peria (2012) show that while in Eastern Europe, loan growth by foreign banks fell more than that of domestic private banks during the crisis, in Latin America foreign banks did not contract their loans at a faster pace. The distinction between the two continents seems to be driven by the fact that foreign banks in Latin America were mostly funded through domestic deposits with most lending in domestic currency, in part forced by host regulatory requirements. This allowed them to maintain lending even when parent banks were hit by a funding shock.

Claessens and Van Horen (2014) investigate further whether and when funding shocks to parent banks negatively affect local lending. For all their countries (some 100) foreign banks indeed reduced credit by 6 percentage points more in 2009 compared to domestic banks (Figure 18). This difference is large, as the mean credit growth in 2009 was only 5 percent. However, only for developing countries and emerging markets was there a significant difference between foreign and domestic banks, but not for high-income countries. And while in countries where foreign banks hold less than 50 percent of domestic assets, the loan growth of foreign banks in 2009 is 7 percentage points less than that of domestic banks, when foreign banks dominate, there is no difference. They also find differences to vary between countries where foreign banks are distant and close. This clearly indicates that it is important to account for heterogeneity across foreign banks when examining their (crisis) behavior.

A recurrent finding is that what matters for the stability of lending by foreign banks during a crisis is having access to local deposits. In principle, the relationship can go two ways. On the one hand, foreign banks that are large local deposit takers might be less affected by shocks to their parent’s balance sheets. On the other hand, parent banks faced with funding shocks might be inclined to transfer funds from those subsidiaries more active in local deposit taking (i.e., with their own core funding markets). Cetorelli and Goldberg (2011) shows that, while on a host country level, there is no difference with respect to having access to local deposits, at the bank level, foreign banks that have a strong deposit base reduce credit significantly less than foreign banks funded less by deposits. This shows again that local funding structures are very important with respect to the stability of credit provisioning when parent banks are hit by a shock.

These findings put into perspective other recent studies and explains in part why in Eastern Europe, foreign banks contracted more, but not in Latin America, since local deposit taking was larger in Latin America (in part as the foreign banks present in that region were more of the local subsidiary model). They also concur with Ongena et al.’s (forthcoming) finding that in Eastern Europe, foreign banks reduced lending more than locally-funded domestic banks, but not compared to domestic banks that had financed their pre-crisis lending by borrowing from international capital markets, a finding in line with Schnabl (2012). It is also consistent with De Haas and Van Horen (2012, 2013) finding that when faced with a funding shock banks reduce their cross-border lending, but are more likely to stay committed to countries in which they have a subsidiary, especially in countries with weak institutions.
Summing up. Foreign ownership can help with host country’s financial stability since parents can and do support their affiliates in times of stress, especially when they made a commitment in terms of a (large) brick and mortar presence. Furthermore, when present locally, global banks’ cross-border lending is more stable during a host country crisis than when banks are not present. While when parents are faced with a funding shock, this can adversely impact the lending of their subsidiaries, whether this transmission indeed takes place depends importantly on local conditions and the business model of the subsidiary. Foreign banks contribute less likely to financial stability in emerging markets and developing countries and where they capture less of the domestic market, and when less reliant on local funding. Collectively, these results point again at the importance of considering heterogeneity when analyzing foreign banks’ impact.

Impact of foreign bank presence on overall foreign financing and domestic booms. Besides the own behavior of foreign banks during periods of financial stress in home or host country, it is also important to consider their impact more generally on financial stability, including any interactions between foreign presence and domestic booms and capital flows. A number of questions arise here. Does greater presence lead to greater financial procyclicality and more domestic (bad) booms and busts? Does greater presence increase or decrease current account deficits? Or does rather it lead to more domestic savings and greater resilience in capital flows? Does the degree of presence affect the composition of capital flows and lead to more “good” or “bad” forms of foreign financing, i.e., less or rather more (bank) debt?

Many of these questions have not been analyzed and a priori answers are not obvious. This in part because it is hard to analyze these relationships without considering other policies. For example, domestic monetary and fiscal policies, interest rate differentials, exchange rate, macro-prudential and capital flow management policies, will importantly drive and affect booms and capital flows, and the role of foreign banks relative to those factors may be small. Analyzing the role of foreign banks in many pre-GFC credit booms, Claessens and Van Horen (2016) find that general foreign presence had little relationship with the size of domestic booms. Controlling for overall domestic credit expansion and investigating the role of individual banks, however, they find that foreign banks added more than domestic banks to local booms, but this was mainly because foreign banks often have better financial positions. Foreign banks also import in part a home banking boom to the host country and add more to a boom if from less well-regulated home systems.12 Heterogeneity thus greatly matters as well for foreign banks’ role in booms, similar to how post-crisis, foreign banks only under some conditions add to local busts.

In terms of capital flows, the overall effects of foreign bank presence appears to be minor as well. Consider for example foreign bank presence in and capital flows to Central and Eastern Europe and within the euro zone. Ex-ante, that is, before the GFC, there was only a weak relationship between cross-border capital flows and foreign bank presence. Some countries had small foreign bank presence and large current account deficits, e.g., the periphery countries in the euro zone, while others, some in Central and Eastern Europe, had large foreign bank presence and large capital inflows (IMF, 2013c). In more detailed analysis, however, Laeven and Tressel

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12 Mehigan (2015) also finds that foreign-owned banks from source countries with higher capital regulatory requirements were associated with significantly lower loan growth pre-crisis.
(2013) show that the type of financial integration matters for the pattern of capital flows. Before the crisis, emerging European countries (with large foreign bank presence and large cross-border intragroup capital flows) experienced a significantly faster build-up of foreign liabilities than other EU countries did. In some other specific cases, there has been a strong perverse link between foreign bank presence and capital flows as well, as argued by Shin (2010) for the case of Korea. There the branches of foreign banks did engage in large scale carry-trades, making interest rates and exchange rates more volatile.

Foreign bank presence can thus contribute to accumulating overall vulnerabilities, but, as noted, can also be a stabilizing factor when the vulnerability is home grown or coming from abroad. Laeven and Tressel (2013) show that after the crisis erupted in 2008 and capital flows reversed, emerging European countries on average experienced a slower reversal, after accounting for other determinants and home country factors. In the euro zone itself, fragmentation increased, with lending interest rates diverging for an extended period of time. But this fragmentation was largely due to cutbacks in cross-border flows. While foreign banks also cut back on local lending, they were not the major factor since their presence within the euro zone was relatively limited, and much less than that in Central and Eastern Europe. Their finding is consistent with a larger initial foreign bank presence being stabilizing, perhaps as banks more likely consider these countries as important markets (as noted, the Vienna initiative also played an important stabilizing role, including in capital flows). This suggests that the form of financial integration (e.g., high local presence, potentially partially funded by intragroup flows, as opposed to cross-border flows between unrelated lenders and borrowers) can matter, also in a crisis.

More general, while there can be common drivers, there is little relation between developments in foreign bank local lending and in cross-border banking claims, further evidence that foreign banks’ local activity can be quite distinct from cross-border lending. As such, it is hard to generalize on the links between foreign bank presence and capital flows, also as they depend on, besides macroeconomic factors, the degree of (financial) frictions, including international financial architecture weaknesses. Still, it is likely that greater foreign bank presence increases the sensitivity to the global financial cycle. While having global operations can insulate banks from local shocks and changes in domestic monetary policy, conversely banks their managing liquidity globally can increase the international propagation of host countries to shocks, including from monetary policies in advanced countries (Cetorelli and Goldberg, 2012c). This makes assessing the risk management benefits of foreign banks more complex.

Summary and implications: A review of the literature makes clear that the benefits and risks of global banking depend on a number of factors, including the structure of global and local banking systems. As the banking landscape is changing following the GFC, the gains and potential costs going forward from global banking may thus alter. Both understanding the drivers of reshaping and what these may mean for the functioning of the global banking system are thus important from an economic, financial and policy angle as well as for guiding future research. In the meantime there are some policy questions, on which decisions are currently being made. I review these and try to clarify the issues related to them in light of existing research.
4. Global Banking: Regulation and Policies

The agenda for reforming the international financial architecture, broadly understood as the mechanisms that facilitate the smooth and efficient flow of financial services and capital across countries and ensure global financial stability, is large (see Obstfeld, 2013 for a review). It involve issues such as redesigning the global safety net, including possibly a larger IMF with greater emergency financing facilities and greater use of (bilateral) central bank swap lines, revisiting the degree of capital account liberalization and related the use of capital flows management and macroprudential policies, and possibly designing mechanisms aimed at addressing international spillovers from (unconventional) monetary policy. The focus of this section is on the much narrower topic of how to deal with global banks in terms of regulation, supervision and resolution. Even then many issues arise, and I will focus only on a few for which there has been analytical work.

As the previous section makes clear, global banks have many benefits, but can also introduce risks. These risks arise in part since global banks are hard to manage and difficult for markets to discipline. Important from a global perspective is that global banks can introduce risks nationally but also across borders. Systemic risks of global banks are more easily ignored internationally, especially during boom periods, home-host conflicts can easily arise in times of stress, and, as the GFC showed, cross-border banks are difficult to resolve. Many improvements can be, and are being, made in (international) regulations and the supervision of global banks to address these issues. In the end though, as this section will argue, the fundamental issue is that a choice has to be made regarding the so called Financial Trilemma, the incompatibility of three goals: maintaining global financial stability, fostering cross-border financial integration, and preserving national resolution authority. In terms of cross-border resolution, this implies that policy makers have to choose among one of three reform options: Territoriality, Universalism, and Intermediate. Implementing any of these will be complex and has to recognize the ongoing shifts in global banking. I will discuss and review the related literature from this perspective.

Management and corporate governance of cross-border banks. The corporate governance of banks is arguably more challenging than that of non-financial corporations (see Laeven, 2013, and De Haan and Vlahu, 2013 for reviews). Banks are “special” in a number of respects: they are highly leveraged; have very diffuse debt holders; are opaque and can adjust their balance sheets quickly; and, while they are closely regulated, they benefit from a public safety net, some in the form of deposit insurance. While differences can be overstated, and indeed as Laeven (2013) argues, many of the principles for good corporate governance for non-financial corporations also apply to financial institutions, there are complications nevertheless. The Basle Committee on Banking Supervision (BCBS, 2015) and others (Bank of England, 2015) have issued guidelines on the issue of bank corporate governance that (implicitly) acknowledge these complexities. Still, the best policy responses are not obvious and challenges remain.

The internal and external corporate governance and related market discipline challenges are even larger as banks expand across borders. Managing a large systemic, cross-border bank is clearly very complex. Many of these banks are very international: on average as of 2010, the top 30 banks had 53% of their assets and earn 56% of their income abroad. The sheer number of their
subsidiaries further shows the management complexities: on average, the top 30 had close to one thousand subsidiaries, of which 68% operate abroad and 12% in off-shore financial centers (see further Claessens, Herring and Schoenmaker, 2010, and Carmassi and Herring 2015). Logic suggests that management and governance would be even harder in such large banks.

Since many of these banks are systemically important, challenges further compound. Many are to various degrees “too big to fail” (TBTF), i.e., they are globally systemically important banks, G-SIBs. Ex-ante, this means that they benefit from an implicit subsidy, which (further) distorts their incentives and complicates their governance. Before the GFC, the “subsidy” from expected bailouts as reflected in their cost of funds for G-SIBs was estimated to be about 45-80 bp (IMF, 2014). Importantly, in spite of reforms and changes in bank behavior, this subsidy is still large (estimates vary, but Ueda and Weder-di-Mauro (2013) find it to be between 60 and 80 bp).

Resolution of cross-border banks. Resolution of banks differs in general from that of corporations. Whereas bankruptcy and restructuring of non-financial corporations can extend over considerable periods, a timely solution is of the essence for banks given the risks of runs and associated loss of value. So typically, at least in the US where the FDIC has had much experience with resolution, a small, non-systemic bank is intervened “over the weekend,” with deposits transferred to another bank and the deposit insurance agency making up any shortfall in capital. While resolution can involve closure (“liquidation”), it can also mean the purchase and assumption of some asset and liabilities by another bank, an assisted merger or acquisition, recapitalization, or nationalization. A SIB, however, is by definition hard to resolve: its typically large size, extensive connections and at time unique role in providing certain essential services, make it hard to do so quickly – certainly not over the weekend – and without disruptions to the rest of the system. When they run into difficulties, resolution therefore often requires government support. Indeed few SIBs are resolved quickly normally, and none in a systemic crisis, and many indeed received large support or were nationalized in the GFC.

These issues get amplified for G-SIBs. Many of these ran into financial troubles in the GFC and some outright “failed” with the rate exceeding by multiples its long run average of 1.3 percent (more G-SIBs ran into trouble in 2008/09 than in the prior two decades). As they did, the TBTF-recipe of governments providing large support also applied to them. Of all the banks that ran into trouble, G-SIBs represented just 16% of assets, but received 54% of the support extended, much above their asset share (data from Laeven and Valencia, 2013). The ongoing reforms aimed at reducing the presence of G-SIBs shows that the question of how to avoid governments being coerced into providing a bailout because of fear of creating a crisis has not been fully answered.

Compared to a SIB, a G-SIB of course has the additional problems of how to address its international activities and deal with the cross-border impacts of a failure. These challenges relate in large part to coordination problems. A weakly supervised G-SIB and its failure poses adverse cross-border impacts, but these are often ignored by national authorities for a number of reasons. For one, asymmetries in domestic and international activities, both assets and liabilities, mean conflicts among national interests can arise. Fiscal, financial, and supervisory capacities are not necessarily commensurate with the scale and scope of activities of G-SIBs in each country. Important, accountability of supervisory agencies is typically national as that is how
they are organized and funded (i.e., by domestic taxpayers). Also most legislations and procedures for insolvency and restructuring are national, and can vary considerable. For these and other reasons, authorities face incomplete tools and incentives in dealing with G-SIBs.

Beck, Todorov and Wagner (2012) formally shown some of these biases. They find, using the CDS price of large (mostly cross-border) banks three days before their intervention during 2008/9 crisis, that there were stronger incentives to intervene if their equity was owned by foreigners, and weaker incentives if assets were lent or invested abroad and deposits were owned by foreigners. Put differently, national supervisory agencies were more willing to intervene when there were adverse consequences for domestic depositors and the local economy and more willing to protect creditors and the ability of banks to intermediate when the costs of doing so, including by “wiping out” equity holders, was more likely to be imposed of foreign owners.

These various unbalanced incentives are especially problematic for G-SIBs that straddle borders asymmetrically (Figure 19). For G-SIBs large in both countries, incentives are more likely to be aligned as both countries’ supervisory agencies would want to intervene. For G-SIBs large at home but small in the host country, conflicts are more likely as the home supervisory agency is less interested in protecting creditors and preserving financial intermediation in both countries. When the G-SIB is systemic in the host country, but not necessarily large in the home country, a case many emerging markets and developing countries face, the home country may have little interests to intervene. The failure of what amounts to a small bank in the home country can nevertheless cause major havoc for the host country.

Overcoming these coordination problems and differences is central to not only improving intervention and resolution in case of stresses, but also to enhancing cross-border regulation and supervision beforehand. While supervisors knew before the GFC that the cross-border bank resolution framework was not effective, the expectation was that Memorandums of Understanding (MoUs) between supervisory agencies and so called colleges of supervisors (designed to jointly oversee specific institutions) would avoid coordination problems and suffice in case of a major failure. This clearly did not work, since during the GFC there was little de-facto cooperation in spite (most MoUs actually had a clause making not bind in some extreme state of nature). Yet, supervisory agencies may have thought that these MoUs would help.

Some examples of poor resolutions include, besides of course Lehman Brothers, Dexia, Fortis, Icelandic banks, as well as AIG (see Claessens et al. 2010 and Schoenmaker, 2013, for more in-depth reviews of these cases). In each case, resolution was, out of necessity, improvised. In some cases, it succeeded in limiting spillovers — but at substantial cost to local taxpayers. In other cases, it protected domestic interests with too little regard to spillovers to the rest of the world. In several cases, the model being followed became unclear itself, e.g., following the Lehman “resolution” (markets may have expected a bailout similar to the previous investment bank failure of Bear Stearns, but got a bankruptcy). And the ‘improvised’ cooperation in case of Fortis raised questions about how other cross-border banks might be handled. As such, the GFC confirmed some of the incentive misalignments.
Financial Trilemma. The proximate reasons for these poor resolutions are multiple and (with the benefit of hindsight) understandable: limits on financial and supervisory resources, poor information, uncertainty about what causes a G-SIB failure and what the consequences of it would mean for the global financial system, and others. The deeper causes for the problems arise though from the Financial Trilemma, first coined by Schoenmaker (Schoenmaker, 2011), and subsequently used by Obstfeld (2014) and others. Conceptually, it builds on other trilemmas well known in economics, e.g., the Impossible Trinity of capital mobility, exchange rate and monetary policy, some of which have recently been extended, especially for the euro zone.

The Financial Trilemma is that the three policy objectives—maintaining global financial stability, fostering cross-border financial integration, and preserving national resolution authority—do not easily fit together. Figure 20 illustrates this: any two of the three objectives can be combined with relative ease, but it is difficult to achieve all three. That is particularly so for countries within a monetary union. The trilemma forces policy-makers to make choices, which can be either one of two corner approaches, Universalism or Territoriality, or among a variety of intermediate approaches, the one discussed here being labelled the Modified universalism.

Universalism, a term sometimes used in non-financial corporate bankruptcies, involves an equitable distribution of the estate, regardless of the location of the subsidiaries of the firm. Many countries have adopted this approach for non-financial corporate insolvencies in which one jurisdiction conducts the main insolvency and makes the distribution of assets remaining, while other jurisdictions largely just “collect” on assets. Not all countries follow this rule, however, even for non-financial corporations, and the choice of jurisdiction of the proceedings still has important implications for the priorities of creditors and outcome of an insolvency.

Applying this model to G-SIBs would have to mean that the bank would be subject to a single common process for not just resolution but also regulation and supervision. The home country, where the G-SIB is headquartered, would thus take full charge, i.e., supervisory agencies would license, regulate, supervise the global business of the bank firm and take remedial actions; the home central bank would be responsible for providing liquidity assistance, and the home

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13 The theoretical foundation for the financial trilemma is the Freixas-model (2003) of cross-border externalities in supervision that shows that when the bank has asymmetric positions in two countries, coordination problems can arise.
14 For example, Bordo and James (2014) have added three: the incompatibility of fixed exchange rates and capital mobility with financial stability; the potential incompatibility of fixed exchange rates and free movement of capital with democracy; the incompatibility of capital flows, democracy, and a stable international political order. Since, as cross-border financial integration progresses, policy makers will have less scope for independent policy-making, including fiscal independence, Rodrik (2007) has then also questioned the combination of nations (sovereignty), democracy and globalization. See further Obstfeld (2014).
15 For example, Pisani-Ferry (2011) has questioned, in the context of the Eurozone, the combination of a monetary union, national banking systems, and a lack of common fiscal responsibility, which is close to the financial trilemma as formulated and analyzed here.
16 Maximizing global welfare can mean considering not only global financial stability, but also other global objectives, such as the reliability of financial contracting and efficiency of global allocation of funds, which can raise other tradeoffs. These are not reviewed here.
resolution authority would take the lead in resolution if necessary. Under this model, which maps roughly into what is called by the BCBS and others, the Single Point of Entry (SPOE, as opposed to Multiple Points of Entry, MPOE, where several resolution processes run in parallel), resolution could focus on maximizing value globally and not be distracted by costly and time-consuming disentangling of multiple intra-group relationships and claims. The model works best if the bank’s organizational structure is also a single entity, i.e., incorporated in one jurisdiction and operating as a global network composed of branch offices. This facilitates interventions because it permits any liquidity and capital provided to flow freely from one location to another where it helps most efficiently restore the viability of the institution. If bankruptcy occurs, recoveries of all world-wide assets would be available for distribution to stakeholders according to the home country’s set of priorities. Creditors of the same class, wherever located, would all be treated equally, i.e., no distinction would be made in the treatment of claims in respect to the jurisdiction in which assets or liabilities are located.

While universalism creates clarity, in that the home authority is in charge, it does not avoid all conflict of interests. Just consider the situation when the subsidiary is systemic in the host country, but the parent bank is not systemic at home. In that case, the home country may not intervene “enough” from the host perspective, and the remaining stress or bankruptcy will adversely affect the host country. Indeed, home country taxpayers may object to “assisting” foreign creditors, particularly if the causes of the crisis relate to events outside their jurisdiction (e.g., consider a large subsidiary going bankrupt because the local government defaulted on its obligations). Furthermore, the financing and potential costs could exceed the home country’s fiscal resources (“too big to save”), of which Iceland is a good example. Also, home authorities may lack the capacity to detect problems arising abroad that may threaten a firm’s viability.

Ideally this model also has unified regulation and supervision, and a universal recognized mechanism for liquidity support. And, in terms of resolution, it entails, especially in case of G-SIB, the ability and willingness if needed to engage in cross-border burden sharing. Lacking these elements, host countries may be reluctant to rely on home country authorities for supervision, nor will they want to defer to them for resolution if this implies that the host country’s creditors will be treated less favorably than they would be in a territorial proceeding. They may also be concerned that they, being foreign creditors, would receive less favorable treatment than similarly situated domestic creditors in the home jurisdiction. This reluctance would again be greater when the local operations of the foreign entity are of systemic importance. And while resolution as a single entity has some advantages, it can also make it more difficult to separate and continue operating critically important functions when other non-essential businesses are wound down (Hüpkes 2005).

Under the universal model, there will be a need for predetermined policies or agreements regarding the sharing of burdens in case of resolution. The recent proposals of the FSB for G-SIBs to have sufficient Total Loss Absorption Capacity (TLAC) address to some degree this issue. This TLAC comes in the form of debt that can be written down and has to satisfy some other conditions, in part to avoid contagion in case of write-downs. It requires banks to have prepositioned enough debt at the holding company and at various its entities so as to increase the
chances it can be “bailed-in” and continue its businesses. As the FSB states: “The TLAC standard is designed to ensure that if a G-SIB fails it has sufficient loss-absorbing and recapitalization capacity available in resolution to implement an orderly resolution that minimizes impacts on financial stability, ensures the continuity of critical functions, and avoids exposing public funds to loss.”

TLAC is clearly helpful in reducing the risks that tax payers have to support the resolution of a G-SIB. Some issues remain to be worked out, however, including international dimensions (see further Hüpkes, 2016). And in most typical resolution events, temporary bridge financing is needed as well. Besides the TLAC, a better resolution framework requires therefore clarifying who is responsible for organizing and providing this financing while being exposed to potential losses. (Note that the specific amounts to be provided can still be determined on a case-by-case basis.) Given the size of a typical G-SIB, such financing needs could be large and the regulator or other party may need to have access to fiscal backup from various governments. Since losses may arise, the arrangement also needs to specify ex-ante how these losses will be allocated. Furthermore, any agreement would have to be consistent with the application on a cross-border basis of national deposit insurance/guarantee schemes and “resolution” funds.

Various models for organizing this financing and burden-sharing can be considered. The key to avoiding coordination issues is to specify these matters ex-ante rather than to improvise ex-post — as generally has happened to date. An ex-ante agreement offers the additional benefit that the countries involved have greater incentives to make sure that each makes adequate supervisory investments in order to minimize the possibility that a G-SIB would get into difficulties because the financing and final costs of failing to do so would be clear ex ante. Balanced against this advantage is the risk of free-riding by some supervisors since there is pooling in the burden sharing. In general, however, having clarity on resources at risk increases accountability and fosters incentives to assign responsibilities more clearly. This in turn can enhance incentives to critically evaluate home and host country regulation and supervision, increase cooperation, including better information sharing, and thereby reduce overall risks and costs.

**Territoriality.** Under the territorial approach, countries engage, unilaterally, in various forms of “ring-fencing.” The term territoriality comes from both the bankruptcy and tax literature (for example, some countries tax worldwide income, others only local (territorial) income). Since this is a non-cooperative solution, in case any parts of the G-SIB were to become insolvent, there would be no presumption of sharing of assets internationally. Each unit of a G-SIB would be resolved according to local laws and would consider only local assets and liabilities. Since markets anticipate these actions, as soon as there are any stresses or risks, there would be steps to pull international funds out and possibly run from parts of the group, not just in the particular country facing stress. Countries would therefore require banks in their jurisdictions that operate across borders to ring-fence all their activities under a particular authority’s domain.

Regulators would do this ex-ante, that is, before any stresses, let alone a systemic crisis, so as to assure that ex-post resolution can if necessary be done on a standalone basis. Concretely, this
often means full subsidiarization of all foreign affiliates.\textsuperscript{17} The advantages are full fiscal independence, in that there is no need for burden sharing with other countries by the public sector and others, as all weak institutions are fully resolved domestically; and better incentives for local supervision as responsibilities are clearly assigned with less scope for conflicts. The disadvantages are that this model is less efficient for global banks, since they will have to use the subsidiary model in every jurisdiction, with associated cost of tying up and not be able to use and allocate capital and liquidity globally easily. These barriers can be especially costly in times of stress. Restriction on a G-SIB’s ability to shift funds from one affiliate to another could cause unnecessary runs and insolvencies in some parts of the group as they become strapped for cash (capital) even though the group as whole may be liquid (solvent).\textsuperscript{18}

A more general worry with this model is that it implies that the local authorities have no or little concern for global interests and (even) less incentives for cooperation on cross-border supervision, even though there are likely to remain some spillovers. The subsidiary model can even lead to perverse actions in times of financial turmoil on the part of regulators, supervisors, financial markets participants, and business themselves. These may involve the exercise of regulatory powers to ensure that there are sufficient assets in the jurisdiction to cover domestic liabilities in the event of failure (e.g., asset pledge requirements) and more ring fencing of assets in case of failure, which may drive early intervention and lead, ironically, to a “regulators’ run on the bank.” It could also lead to further limitations on intra-group transactions, including assets transfers, to prevent contagion and further protect creditors of a given local legal entity. And it may lead to some closing of the capital account to fully eliminate these and other risks. Also, under the model supervisory agencies will become closer to their domestic banks and narrower national interests. This is not just a regulatory risks, but also a broader political economy longer-term concern: will this model undermine the support for financial globalization?

\textit{Trend and choices}. In terms of trends, there were some moves towards universality before crisis. For example, the EU Directives were largely based on this model. Also, UNCITRAL stresses this approach in its Model corporate law for the bankruptcy of non-financial corporations.

Clearly the GFC has interrupted these developments. And even earlier there were notable exceptions, such as the case of BCCI, and the related US deposit preference rule which makes US deposits trump other claims in bankruptcy.\textsuperscript{19} Following the GFC, national and territorial

\textsuperscript{17} The G-SIB’s organizational structure that fits best with this paradigm is where each subsidiary is also functionally independent, i.e., it has own treasury and other critical functions. Together, this makes institutions easily resolvable locally because they are operating in each jurisdiction through separately incorporated entities and do not depend on other entities in the group for critical functions.

\textsuperscript{18} Also, under this model, some channels for international spillovers would still remain. For example, the insolvency of a subsidiary of a G-SIB operating under the same name as its parent could affect the ability of the rest to the group to attract funds, even without direct financial spillovers. Also cross-border banking and other forms of capital flows would presumably still be allowed, with associated risks affecting banks.

\textsuperscript{19} The U.S. generally follows a more territorial approach with regard to U.S. branches of foreign banks: it conducts its own insolvency proceedings based on local assets and liabilities. Assets are transferred to the home country only if and when all local claims are satisfied. As Baxter, Hansen and Sommer (2004, p.61) note, in the U.S., although the nationality of creditors is irrelevant, “only creditors of the local branch of
approaches are more common. Importantly, a number of these new regulations (the 2014 US Foreign Banking Organization rules, Volcker, Vickers, Liikanen) could, even if not so intended, encourage more local approaches as they are not necessarily harmonized, leaving financial institutions little choice but to adapt to various local rules (see further IMF, 2015a). There have also been cases of ring-fencing and anecdotal evidence suggest supervisory agencies using moral suasions to make sure lenders continue to support their local operations.

The universal approach is unlikely to be adopted soon. It makes many demands, notably fully integrated regulation and supervision, and centralized resolution with full burden sharing (which means that fiscal independence and sovereignty will compromised too). It is thus too demanding to expect any time soon on a global basis. It may even be unwise to pursue globally if it leads to free-riding or is being adopted inconsistently (a world regulator and supervisor is a risky undertaking). Yet, this does not mean that some elements could not be introduced. Akin to UNCITRAL, WTO, EC DG Competition, for example, procedures for processes to be followed could be introduced, with some possibilities for sanctions in case of deviations from certain procedures. But these improvements would not suffice for crisis management.

What is more realistic is for some group of countries to adopt the universal approach, or at least a version thereof. An earlier such proposal was called the European Bank Charter (Chihak and Decressin, 2007; see also Decressin, Faruqee, and Fonteyne, 2007). The (European) Banking Charter (EBC) was meant as a new regime, mainly for cross-border (EU) banks. They could apply and be re-chartered as an EU-banks only, i.e., in one jurisdiction and legal form. They would be subject to a single supervisory authority, presumably equipped with all the tools necessary, including a resolution regime and authority, possibly combined with some common burden sharing. Banks could thus save on the compliance costs of having to satisfy various local regulations. It was not intended to be introduced overnight, but rather to be phased-in. If managed centrally, it could enhance regulatory governance, e.g., as the distance to local political economy is increased. And by introducing burden sharing, it could enhance cooperation as supervisors become better incentivized. Given its institutional and financial demands, this model is clearly most suited for closely integrated countries, such as the EU, or more narrowly just its euro zone members. But even then the model has many implementation risks. Having uneven rules, with different charters, can invite regulatory arbitrage. And the dynamic path is not so clear: will all banks eventually adopt this model? It does require good centralized systems to be sure that risks decrease, not increase. And while from financial markets and institutions’ perspectives, this model offers potentially the assurance that there would be a backup if needed, clear rules would be needed for this.

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the insolvent firm may participate...On the asset side, the insolvency official asserts jurisdiction over all local assets and assets outside the jurisdiction that are “booked” to the jurisdiction.”

20 It could be flexible and gradually introduced. For example, rules could differentiate by classes of banks (e.g., size). It could also allow countries to opt in over time (and out, but with some sanctions, so as to avoid uncertainty and opportunistic behavior).

21 Burden sharing could be ex-ante through a fund using general contributions, based on an existing key (e.g., ECB profits) or others (e.g., GDP, Assets), and institutions’ specific contributions. While multinational, the fund would have to be backstopped by governments, done ex-ante, and would be
While the EBC model did not get much traction, since then EU-countries have taken a more drastic step in the form of the Banking Union (BU). The BU is a “universal” model within the euro zone with three elements: integrated: regulation and supervision (through the Single Supervisory Mechanism, SSM, located at the ECB); resolution (through the Bank Resolution and Recovery Directive, BRRD, with a Single Resolution Board, SRB); and deposit insurance (see further Goyal et al 2013, and IMF 2013). Not all three elements are fully in place yet. Notably, rules for burden sharing, including fiscal backstops, and a single deposit insurance mechanism are being determined and mechanisms being fully implemented. This raises for some questions whether the sequence chosen – starting with SSM, then BRRD/SRB, but not yet “SDIM” – will drive dynamics enough and lead to the proper desired end result. As such, there are still risks.

*Intermediate approach, modified universalism.* For those other countries that reject the territoriality approach, but for various economic, financial or political economy reasons can neither sign on to universalism, there are *Intermediate* approaches. One possible form would involve participating in a new international agreement that would build on the home-host principle that underlies the Basel supervisory framework. Specifically, it would involve negotiating a new “Concordat” focused on crisis management. Importantly, the Concordat would have explicit incentives build in for collaboration. It would stipulate criteria for banks to have access to foreign markets that include the presence of, besides effective supervision at home (as in the current home-host supervisory accord), the need to have in place credible resolution processes. This would include elements such as rapid resolution plans (RRPs, also known as living wills), and possibly some forms of pre-package bankruptcy, as well as clarity on the cost sharing in any resolution, including forms of (public) burden sharing.22 If the home country cannot meet these criteria, the host country can take actions, including limiting entry or imposing restrictions on the activities of existing foreign banks. By more explicitly using sticks and carrots, this approach can strengthen incentives for de facto supervisory collaboration.

The benefits of this approach are threefold. First, it acknowledges that effective co-operation requires all three elements, regulation, supervision and resolution, but explicitly recognizes that the endgame of resolution has to be included from the start, but in ways less demanding than the universal approach. It would build on the many already existing forums to enhance cooperation, including beside the home-host supervisory Concordat, crisis management, colleges, and financial stability groups set up under the FSB. It would acknowledge though that these steps so far are not sufficient, since the focus is still largely on supervision. Second, it would stress much

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22 The International Standard is the so called “Key Attributes of Effective Resolution Regimes” ( KA), see the FSB and IMF (2010). The KA are a non-binding set of principles, with the objectives to resolve financial institutions in an orderly manner, while minimizing the costs for taxpayers from rescues and ensuring continuity of critical economic functions. It is being used to assess countries’ resolution regimes (see further IMF, 2014) and accords with the resolution approach underlying TLAC. Complementarily, it will be necessary to improve the structures of G-SIBs and enhance the ability to wind them down orderly in case of weaknesses. And it would require create greater convergence in many other national practices and rules besides resolution, including those covering definitions of capital (adequacy), contingent capital, including TLAC, and associated (regulatory) triggers.
more the need to harmonize national approaches to resolution, neglected in the past as the focus was on regulation and supervision. This harmonization will help to reduce scope for conflicts, thereby enabling cross-border resolutions. Third, and most important, it would create explicit incentives for co-operation. By excluding resolution, other approaches do not fully address incentives, and made for limited effectiveness in crises. Rather than promote, it would require minimal cooperation, as countries can limit entry, thus moving from “can authorities co-operate” (MoUs, etc.), to one “will authorities co-operate” (using both incentives and treaties).

**Impact of changes in global banking structures.** Even without considering changes underway in the global banking system, the policy agenda is already large, but the changes have implications too. The increase in regionalization means more need but also more scope for the integrating regulation, supervision, and resolution. This is happening in the form of the BU in the euro zone, but many other regions have yet to formalize cooperation in all elements. At the same time, regionalization means that global risk-sharing is less and fragmentation may increase. How to balance these benefits and risks will be important. The rise of emerging markets and developing countries’ banks abroad means more need for them to adequately perform their role as regulator of their foreign affiliates and local subsidiaries. It also means they should (be allowed to) become more active in international decisions on reforms. And as they become more important creditor and home countries, it will be important for them to (better) monitor cross-border lending and local lending by their foreign active banks. This will also involve better data. For example, the BIS International Banking Statistics (IBS) only includes a few emerging markets as reporting creditor countries, so it cannot capture the likely growing intra-emerging markets and developing countries’ lending (see further Cerutti, Claessens, and McGuire, 2014, on the IBS data).

**Summing up.** A globally universal approach to resolution is not likely soon, nor necessarily wise. For some closely integrated groups of countries, however, a near-universal approach is possible and indeed being phased for the euro zone in the form of the “Banking Union.” Some other countries could choose to adopt an intermediate approach, possible in the form of a new Concordat, which offers sticks and carrots to make it effective. For others and globally, it will be important to avoid a race to bottom, with the biggest risk wide scale adoptions of the territorial approach, which would be, with its ring-fencing, more home-bias, fragmentation and perverse political economy, an overall bad outcome. And it will be important to take account of the changes in global banking.

5. **Conclusions and Possible Areas for Research**

This review has made clear that there are both benefits and risks associated with global banking, leading possibly to tradeoffs. It has also made clear that is hard to generalize on the exact tradeoffs without considering at least the heterogeneity in circumstances, as regard to bank, home, host and bilateral conditions. And while there are some areas where conclusions can be drawn, there are also a large number of questions remaining. In these conclusions, I organize both the state of knowledge and the questions about global banking under three headings: efficiency, financial stability, and regulation, distinguishing domestic and international
regulatory issues. I discuss these first in general, and then specifically in reference to the (ongoing) changes in global banking which highlight some old and some new issues.

In terms of efficiency, including access to financial services, the literature has made clear that to analyze and then to weigh the benefits and risks of global banking it is important to consider explicitly its heterogeneity. Research shows that country conditions, institutional development and economic circumstances, as well as the types of capital flows and foreign banks matter crucially for the impact global banking has on domestic financial systems and economies. Results, especially from before the GFC, find that “better” countries tend to get more benefits from financial globalization and are less exposed to shocks. So it is important for countries to assure that they have the right regulations and infrastructure (e.g., information, property rights) in place. While this view has been questioned post-GFC, as advanced countries saw greater volatility in capital flows, many elements likely remain valid. Research also suggest that it is important to consider the types and forms of capital flows, investors and foreign bank(s) present. Some flows like FDI are more likely beneficial. Larger and closer banks with a greater share of domestic activity, including in deposit-taking, tend to provide more access to finance for SMEs and less likely engage in cherry picking. And the spillovers to the domestic banking system are also larger, the greater foreign banks’ local footprint.

In terms of financial stability, one of the main lessons, especially since the GFC, is that global banking has two sides: risks can be exported at times, but at other times be imported. As such, benefits and risks have to be analyzed over a full cycle. And similarly to the lessons on efficiency, it is important to consider heterogeneity since the forms and types by which financial globalization happens matter for financial stability. Some flows, such as short-term bank debt, are more volatile, and some types of investors, such as mutual funds and international banks, are more affected by global financial and monetary conditions, exposing countries more to volatility. While countries can mitigate the impact of these global conditions, among others by stricter regulations, they cannot fully eliminate them unless they also give up on capital account openness. While hard to generalize, research suggests that banks with greater “commitment,” as reflected among others in larger local market shares, more local funding strategies, relative shorter closeness to headquarter, and less engagement in transaction types of intermediation activities, are more willing to incur the temporary costs when faced with an (external) shock, maintain their operations and support the local economy. As such, there can be distinct preferences for the forms in which capital flows and foreign bank presence occur.

In terms of supervision and regulation, there has been progress in adapting the paradigm so as to maximize benefits and limits risks. Countries now more closely monitor capital flows, not just by type – e.g., debt vs. equity, but also as to which are the final investors – e.g., banks and funds vs. institutional investors. Many supervisory agencies no longer only rely on the home supervisor. In terms of foreign banks’ regulation, there has been a trend towards a more standalone model, through subsidiarization or akin requirements on branches. Even with better monitoring and micro-prudential motivated actions, risks will remain with global banking, including the risks of financial booms and busts. For many countries, macroprudential policies can help with these risks. For some, capital flow management tools are possibilities to reduce remaining risks. For
others, options are more circumscribed, either as they are part of a currency union or have free trade and other agreements that limit the use of such tools.

At the global level, there is also a recognized need for more reforms. Important among these are enhancements to the international financial architecture, notably regarding the global financial safety net and liquidity support mechanisms for countries running into balance-of-payments difficulties. There is also the need to enhance the framework for resolving large cross-border financial institutions. The policy issues and choices regarding global banks, especially G-SIBs, are complex, however, as the financial trilemma makes clear. While there are various possible approaches, which are not completely exclusive, internal consistency in addressing financial trilemma will be key.

Developments since the GFC raises additional issues. Important is the growing importance of emerging markets and developing countries’ banks. This largely reflects their growing role in world economy and global financial markets, but also the aftermath of the crises in advanced countries. Related is the trend towards more regionalized banking systems, not only in Europe, but also elsewhere. These developments raise questions in term of efficiency and financial stability, and as well as for regulation, domestic and international. While specific research on what the ongoing shifts mean, especially in those countries where profound changes have taken place, has to await more data, existing findings in the literature already have some relevance.

In terms of efficiency, the entry of banks from emerging markets and developing countries could offer benefits in terms of greater local competition and access to financial services for SMEs and households. Importantly, as these banks invest in countries within their region and of similar (institutional) development, they may better collecting and processing soft information and as such lend more and better to informationally more opaque borrowers. At the same time, entry of these banks and more regionalized banking systems may not allow for the globally best banking technology and know-how to be employed in every market and for capital to be allocated most efficiently going forward. Which effects dominates is not a priori clear, but a “preferred” structure may be a mix of local banks, foreign banks from “close” countries, and global banks.

In terms of financial stability, and from regulatory and supervisory perspectives, the rising importance of banks from emerging markets and developing countries, through foreign presence, and very likely (although not verifiable with existing data) through cross-border lending, raises some issues. For one, it will be important that these countries adequately perform in their role as home regulator and supervisor of foreign branches and local subsidiaries, including by making sure that their banks are adequately capitalized and weak banks are quickly restructured and resolved. Otherwise, new risks could be introduced. Second, data coverage on direct cross-border and affiliate lending has to expand to better gauge developments in global banking, including whether there is indeed a general retrenchment and fragmentation in cross-border lending, or whether new players are filling the gap left by retreating banks. Currently data from the BIS only cover a few emerging markets and developing countries as reporting, creditor countries, thus missing out what are likely growing intra-emerging markets and developing countries’ lending as well as lending from these countries to BIS-reporting countries themselves. Thirdly, their increased role makes it more imperative that policy makers from these countries are (allowed to
be) active participants in international deliberations about financial reforms, such as Basel III and international modalities for resolution, in part so as to assure that reform models suit their (changing) circumstances, but also to give more legitimacy to these bodies and rules.

The increased regionalization can also have important benefits, but also risks. More regionalization could also increase financial stability, e.g., as it leads to more local funding and greater commitments. With global banking becoming more regional, coordination in dealing with the supervision and failures of internationally active banks could be easier, with the European banking union the prime example of the potential for improvements in all dimensions – regulation, supervision and resolution. Increased regional coordination can provide large benefits, but it could also lead to (as well as reflect) policies and actions that amount to financial repression, ring-fencing and fragmentation, with adverse consequences for risk-sharing and financial stability. As such, regionalization will have to be accompanied by assurances of countries to maintain open financial borders. So far, few countries have retracted on their commitments to liberalize their financial services’ markets to others. But more is needed as many, often subtle, barriers still hinder the operations of financial firms across borders, in spite of numerous initiatives. Without further detailed agreements it may be difficult to assure that the moderating influences of the newly developed macroprudential tools, such as countercyclical capital buffers, are not being negated by foreign banks and other financial institutions in jurisdictions not subject to such rules. As such only a combination of national and international policy responses can help ensure that global banking develops in the most beneficial way.

Beside the issues policy makers will have to confront going forward, there also many research issues raised by the recent developments. An incomplete list to be investigated is the following. When do these newly entering foreign banks add to financial stability and when do they introduce risks? Specially, how do their characteristics – like their home country, degree of funding, and business focus – matter for financial stability? Are these new owners better or worse capitalized than the traditional, advanced countries’ owners? Do they have less or more access to intra-bank markets to smooth shocks? Are the relevant home-host regulatory and supervisory frameworks up to par? Related are questions on the global banking structure. Do the shifts in international banking networks and market structures lead to new risks? Are the newly emerging global network structures more or less resilient to shocks? Does it matter what types of foreign banks and how much variation from within and outside region there is for a particular country? If regionalization means less risk-sharing and make the global system more prone to shocks as there is less diversification, does a larger variety of parent banks improve diversification at the host country level and make the global banking system less prone to shocks? The starting point for many of these questions will have to be a better understanding of the drivers of the changes in global banking, including regionalization (and possibly related fragmentation), since only then the advantages and disadvantages can be properly assessed.
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Figure 1

Pre-crisis rise in cross-border bank flows

(In percent of GDP)

Figure 2

Triggered by market forces,
but also by deregulation

(In percent of GDP)
Figure 3

Globalization increasingly also through foreign bank presence

Figure 4

Growth especially high in EMs/DEVs
Foreign bank shares (numbers)
Figure 5

Existence of strong regional patterns

![Chart showing share of foreign banks investing in own region, 1995 and 2009](chart)

Figure 6

Post crisis: Less cross-border bank as well as less local affiliates’ claims

(affiliates = subs + branches and claims = FX + LC)

![Chart showing BIS Reporting Banks’ Foreign Claims (in USD billions)](chart)

Source: BIS consolidated banking statistics at ultimate risk basis.
Cutbacks varied across lenders

After Lehman for example, *cross-border* lending (flow) declined *on average* by 18 per cent. But substantial variation across *lending* countries, so likely *supply* causes

![Drop in Claims 2009Q2 minus 2008Q1](chart)

Cutbacks varied across borrowers

But also substantial variation across *destination* countries, many down, but some up, *so demand* causes too

![Number of destination countries](chart)
**Cross-border also varied greatly by pairs**

**Event: 08Q2-09Q2**

- Each cell: percentage change in bilateral cross-border claims (lenders = columns, borrowers = rows)
- Order of borrowers (rows) is by the change in total borrowing ↓
- Order of lenders (columns) is by overall degree of deleveraging →
- Clear heterogeneity in changes

**Also, for affiliates’ claims, but less so**

- In general, deleveraging through affiliates not as much as through direct cross-border
- Less bilateral interactions than for direct cross-border lending (and not all direct bilateral also have affiliates’ presence)
- Still also heterogeneity in the evolution of affiliates’ claims
Driven by less entry post GFC, not by massively more exit

Entries fluctuate substantially
- Reforms (opening up of transition countries; liberalization in many countries)
- Crises (Asian crisis, Argentine crisis, and GFC)

Post GFC limited net retrenchment

- Decline number foreign banks, but share slightly increased
- Share in assets declined from 13% in 2007 to 11%
Substantial shifts at host country level

- No complete exit from host country; in one new entry
- In 66 host countries, role of foreign banks decreased after crisis, but in 47 countries importance increased (in terms of assets)

Even greater shifts at bilateral level

- 63 out of 576 home-host pairs no longer foreign bank presence; at the same time 106 new pairs came into existence
- In 53% of pairs presence decreased and in 47% increased
Post-GCF, global banks cross-border claims and subs’ lending grow, except for/in OECD

- Local lending expands, but not in OECD. In others, because other banks from EMs and DEV strong, less for OECD banks
- Cross-border claims decline overall, driven by OECD HQ banks and in OECD, but not in other countries
- In EMs, cross-border claims expanded more than local loans

Local vs. cross-border lending growth still varied much at the host country level

- Positive correlation between two types of lending, but lots of variation
- Both can be positive or negative, but also move in opposite directions
Volatility of net flows has increased, but less for EMs.
And bank & other private flows usually most volatile.

In 2009, foreign banks cut back credit,
but drops varied by markets and banks.

Note: The figure shows the point estimates and 5 and 95 percent confidence intervals of the foreign ownership dummy interacted with a dummy which is one if the year is 2009 in a regression estimated using different country samples. All regressions include several bank level controls (see main text), bank and country-year fixed effects. The model is estimated using OLS with standard errors clustered at the bank level.
Conflicts among national interests especially large for asymmetric G-SIFIs

For many countries, EMs notably, foreign banks are small at home, but big relative to host

Financial trilemma: choice to be made
Table 1

NUMBER AND SHARE OF FOREIGN BANKS, HOME TO HOST BY INCOME

<table>
<thead>
<tr>
<th>Home income group</th>
<th>2009</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
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<tr>
<td></td>
<td>OECD</td>
<td>OHI</td>
<td>EM</td>
<td>DEV</td>
<td></td>
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<tr>
<td></td>
<td>Nr.</td>
<td>Share</td>
<td>Nr.</td>
<td>Share</td>
<td>Nr.</td>
<td>Share</td>
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<td>18</td>
<td>0.02</td>
<td>413</td>
<td>0.47</td>
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<tr>
<td>Other high-income</td>
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<td>0.14</td>
<td>4</td>
<td>0.06</td>
<td>38</td>
<td>0.54</td>
</tr>
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<td>17</td>
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<td>0.02</td>
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</tbody>
</table>

Note: OECD includes all core OECD countries. Other high-income countries includes all countries classified as high-income by the World Bank in 2000 but not belonging to the OECD. Emerging markets includes all countries that are included in the Standard and Poor’s Emerging Market and Frontier Markets indexes and that were not high-income countries in 2000. Developing countries includes all other countries.