Milken Institute

Systemically Important Banks in the Post-Crisis Era

The Global Response and 135 Countries' Responses

September 2013

James R. Barth, Chris Brummer, Tong Li, and Daniel E. Nolle

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Executive Summary

Financial system policymakers around the world continue to respond vigorously to the problems in financial markets, institutions, and regulation and supervision brought into high relief by the global financial crisis. However, the overall understanding of those responses remains vague and limited. Our study improves the state of knowledge by focusing on one particularly relevant issue, the regulation and supervision of systemically important banks (SIBs).

The heart of our contribution is the presentation of information heretofore obscure, or new, or both. Our approach is to develop two complementary perspectives. The first is what we have characterized as the global response. That discussion begins by noting that the G-20 and the Financial Stability Board (FSB) are the architects of the most significant agenda to reform the global financial system, particularly as it operates through systemically important financial institutions (SIFIs). We explain what the G-20 and the FSB are, how they came to occupy the driver's seat, so to speak, and the evolution of their major reform initiatives since the darkest days of the global financial crisis. Our discussion highlights SIFI initiatives, emphasizing those pertaining to global systemically important financial institutions/banks (G-SIFIs and G-SIBs).

Our second perspective is a country-specific one. It starts by observing that while most of the largest banks around the world have not been designated “globally” systemically important, they are nevertheless systemically important when considered in a national or “domestic” context. Under those circumstances, it is fortunate that, due to recent World Bank efforts, a large set of information exists about the regulation and supervision of SIBs. Our study summarizes and highlights the new World Bank data on the post-crisis regulation and supervision of SIBs by 135 countries. Broadly, that analysis shows that countries are more similar than different in the measures they have adopted for regulating and supervising SIBs.

We conclude by suggesting that, although this similarity should aid countries in coordinating policies, they have a very long way to go in that respect.

*The views expressed in this paper are those of the authors alone and should not be interpreted as reflecting those of the Office of the Comptroller of the Currency, the U.S. Treasury Department, the Federal Reserve Bank of San Francisco, or the Federal Reserve Board.

Introduction

Political leaders and regulatory authorities around the world responded to the global financial crisis that emerged in 2007-2008 with a wide range of policies aimed at stabilizing and reforming national and international financial markets, institutions, and practices.[1] Six years and counting since its onset, policy responses to the crisis around the world continue to be debated, decided, and implemented, a reflection of its profound impact.

A major policy focus for authorities -- some would say *the* major focus -- was initially, and continues to be, risks to the financial system posed by systemically important financial institutions, or "SIFIs" as they quickly came to be called. These institutions, at both the global level ("G-SIFIs") and the domestic level ("D-SIFIs"), are institutions of such size, interconnectedness, and financial system importance that their failure, or even their severe distress, causes significant destabilization and substantial adverse economic consequences. The distinction between D-SIFIs and G-SIFIs is that the former pose systemic risk to the national financial system but (probably) not beyond, while the latter pose systemic risk both within and across national borders. At the national level, policymakers have been strengthening existing supervisory practices and regulations applying to SIFIs and, in country after country, new national laws and regulations aimed at SIFIs have been and are still being implemented.

Some of these national efforts, such as the Dodd-Frank Act of 2010 in the United States, are sweeping in scope and widely known around the world.[2] In addition, key policy responses to the global financial crisis have been deliberated upon and committed to at the international level. Among the most well-known are the Basel III capital and liquidity standards for large, internationally active banks.[3] Nevertheless, even many experienced financial market analysts and policymakers lack a clear and comprehensive picture of the nature of national and international policy responses to deal with SIFIs.

The purpose of this paper is to address that lack of clarity and contribute to a better understanding of the nature and scope of SIFIs policies around the world. Our focus is on the regulation and supervision of systemically important banks (generically, "SIBs," including both D-SIBs and G-SIBs), a large and important subset of SIFIs. Indeed, as of the date of this study, SIBs have received by far the greatest attention by policymakers, both nationally and internationally. We look at this issue from two complementary perspectives: The global response focuses on the agenda of the dominant, if relatively little-known, international entity engaged in reforming the financial system; and our country-specific

---

[1] Many researchers, analysts, market observers, and policymakers date the global financial crisis as covering the 2007-2009 period or some significant subset of those three years. Others view the deepening seriousness of the sovereign debt-banking system stresses in the euro zone as from 2010 as fundamentally a continuation of that same global financial system crisis; see, e.g., Lane (2012), who designates the early period, ending in "spring 2009," as the "market-panic phase of the global crisis" and explains that "subsequent crisis stages are still playing out, with Europe at the center of the current phase." For purposes of this study, it does not matter in which camp one places oneself, and indeed the authors believe that the information conveyed in the paper is relevant to either point of view.

[2] The official "short title" for the Dodd-Frank Act is the Dodd-Frank Wall Street Reform and Consumer Protection Act.

[3] Initially used as a shorthand title, "Basel III" is now recognized as the standard designation for the Basel Committee on Banking Supervision's most recent program of bank capital and liquidity standards. See the website of the Basel Committee on Banking Supervision at www.bis.org/bcbs/basel3.htm.

review looks in detail at supervisory measures for SIBs in 135 countries around the world. For both perspectives, we present new information.

The first section presents what we argue should be understood as the main international, or global, SIFIs policy agenda. Specifically, it describes the Group of Twenty (G-20) and how, in response to the onset of the global financial crisis, it rapidly emerged as the premier forum for cooperation on the development and implementation of policies aimed at reforming the world financial system, including those aimed at SIFIs. The first part of the section explains what the G-20 is and how, via its chief agent, the Financial Stability Board (FSB), it carries out its lead policymaking role. The discussion in the second part highlights the development of G-20/FSB SIFIs initiatives, placing them within the context of the overall financial reform agenda as it evolved from late-2008 to midyear 2013, roughly the five-year anniversary of the full eruption of the global financial crisis.

That “story” is largely unknown. As a consequence, there is a measure of ignorance and, perhaps, misunderstanding, even among serious observers, analysts, and policymakers, about the hierarchical structure within which global banking and financial system policies are generated.

Section II begins by looking at the factors used to identify G-SIBs and how those so designated compare in asset size among the world’s 100 biggest banks. The size of each of these banks is also gauged relative to the banking system’s total assets and the GDP of the country in which a given bank is headquartered. The section then turns to our second perspective: the post-crisis regulation and supervision of SIBs on a country-specific basis. Specifically, using new and comprehensive data collected by the World Bank, we look at the nature of policies applying to both D-SIBs and G-SIBs. Financial industry participants and policymakers are aware that numerous countries have strengthened measures and/or introduced new measures to better regulate and supervise SIBs, but until very recently the lack of detailed data across a wide range of countries made it impossible to paint a comprehensive landscape. This paper addresses that deficiency.

The study's presentation of, on the one hand, the global agenda for identifying and controlling risks to the financial system posed by systemically important banks and, on the other, country-specific measures to accomplish the same objective, raise the obvious question: Do the global agenda and country measures dealing with SIBs mesh?

Section III considers this question. It begins with the observation that there is no single, all-encompassing “answer” to the question. Indeed, even if there were, such a complex undertaking would provide sufficient material for another study, if not a (lengthy) separate book. With that in mind, our tack in this section is to provide a brief introduction to the nature of one important dimension of the issue: legal obstacles to cross-border regulation and supervision.

I. Systemically important financial institutions: The G-20 and global policy development[4]

By the beginning of the fourth quarter of 2008, it had become apparent to most observers, analysts, and policymakers that the financial crisis triggered in the U.S. subprime mortgage market had become global in scope. It was also widely recognized by then that national policy responses, however bold and innovative, would be inadequate to stabilize, much less repair, financial markets and networks reaching around the world. It was in this environment that on November 14 and 15, the heads of government in the G-20 countries met at their first Leaders' Summit in Washington, D.C.[5]

That event represented a sea change in how, and by whom, internationally coordinated financial policy was made. In response to the previous global financial crisis in 1997-1998, the Group of Seven (G-7) rich industrial countries held center stage, as had been the case for years.[6] Little remarked at that time was the G-7's decision to establish a new economic forum with a wider and more varied membership, particularly in recognition of the increasingly important role of several large emerging market and developing economies (EMDEs).[7]

As the global financial crisis deepened and widened, that decision looked prescient, especially because of the profound role reversals that characterized the crisis. The richest G-20 members, with the biggest financial systems, were under duress while the traditionally less stable EMDEs were little affected by the crisis. The next subsection provides details on the composition of G-20 membership and describes the relationships between the G-20 and other international policy fora, including in particular the Basel Committee on Banking Supervision (BCBS) and the IMF. The final subsection briefly describes the emergence and evolution of the G-20's reform agenda in response to the global financial crisis, highlighting the portion related to SIFIs.

I.A. Who and what is the G-20?

The term "G-20" is used commonly to refer to the 19 member countries, and the European Union, that are represented in the group. More precisely, however, from its establishment by the G-7 finance ministers and central bank governors in September 1999, "the G-20" has meant the finance ministers and central bank governors of the 19 member countries, plus an equivalent-level representative of the European Union. That would be either the president of the European Council or the head of the European Central Bank, serving on a rotating basis.

These finance ministers and central bank governors (to be henceforth referred to as "ministers and governors") continue to function as the core group within the G-20. However, the heads of state, or

[4] This section draws heavily on Nolle (2013).
[5] Although G-20 finance ministers and central bank governors had met annually since the group's founding in 1999, the November 2008 Summit was the first time the heads of state met as a group, brought together by the gravity of the financial crisis.
[6] G-7 members are Canada, France, Germany, Italy, Japan, the U.K., and the U.S. In 1998, Russia joined the group, which became the G-8. They continue to meet in summit, but as from the Leaders' designation of the G-20 as the "premier forum" for international financial policy development, G-8 summits have generally focused more on geopolitical issues and less on financial system issues.
[7] Foremost among the EMDEs asked to become original members of the G-20 were China, Brazil, and India. See "What Is the G20?" the official G-20 website at www.g20.org/docs/about/about_G20.html.

"leaders," are also called "the G-20" in relevant situations – a precedent set in the darkest days of the financial crisis, when the ministers and governors requested their direct participation in deciding crucial policy issues. For clarity, our use of the term "G-20" refers to the ministers and governors, and elsewhere we specify "G-20 leaders" or "G-20 countries/ jurisdictions" as appropriate.
Table 1 lists the 19 member countries. That table includes key measures of the economic significance of individual member countries, as well as their combined significance.[8] The largest economies in the world are included among G-20 members (e.g., the U.S., China, Japan), but the group also includes smaller economies from every region of the world. Together, G-20 countries accounted for 86 percent of world GDP in 2012. Even more compelling is the G-20's dominance over financial markets, where they claimed 90 percent of world banking system assets, 81 percent of global stock market capitalization, and 94 percent of global bond markets.

The far right-hand column in Table 1 presents an overall measure of global financial market activity by summing the bank, stock market, and bond market measures. Using that "Financial Market" construct, Table 1 shows that in 2012, the G-20 member countries encompassed all but 10 percent of world finance.

[8] As explained in Table 1, G-20 totals eliminate any double counting of EU member countries that are individual G-20 members.

Click to interact with this data

Table 1.
G-20 Member countries in global economic and financial systems
(2012)

Click to interact with this data

G-20 Member	*Real Economy*		*Financial System*							
	GDP		Bank assets		Stock market capitalization		Bond market[2]		Financial market [stocks+bonds+banks]	
	$U.S. Trillion.	*% Total world*	*$U.S. Trillion*	*% Total world*	*$U.S. Trillion*	*% Total world*	*$U.S. Trillion*	*% Total world*	*$U.S. Trillion*	*% Total world*
Argentina	0.47	0.7	0.06	0.1	0.03	0.1	0.05	0.0	0.15	0.1
Australia	1.54	2.1	3.26	3.3	1.37	2.5	4.04	2.9	8.67	3.0
Brazil	2.40	3.3	1.78	1.8	1.20	2.2	2.29	1.7	5.27	1.8
Canada	1.82	2.5	3.58	3.6	1.87	3.4	4.49	3.2	9.93	3.4
China	8.23	11.5	13.67	13.9	2.98	5.4	3.82	2.7	20.46	7.0
France	2.61	3.6	7.88	8.0	1.66	3.0	6.16	4.4	15.69	5.4
Germany	3.40	4.7	3.92	4.0	1.55	2.8	5.72	4.1	11.19	3.8
India	1.82	2.5	1.40	1.4	1.18	2.1	0.64	0.5	3.22	1.1
Indonesia	0.88	1.2	0.31	0.3	0.42	0.8	0.17	0.1	0.90	0.3
Italy	2.01	2.8	3.43	3.5	0.51	0.9	4.83	3.5	8.77	3.0
Japan	5.96	8.3	9.61	9.8	3.89	7.0	29.18	21.0	42.68	14.6
Mexico	1.18	1.6	0.18	0.2	0.56	1.0	0.68	0.5	1.42	0.5
Russia	2.02	2.8	1.09	1.1	0.83	1.5	0.79	0.6	2.70	0.9
Saudi Arabia	0.73	1.0	0.27	0.3	0.37	0.7	0.06	0.0	0.70	0.2
South Africa	0.38	0.5	0.60	0.6	0.49	0.9	0.25	0.2	1.34	0.5
South Korea	1.16	1.6	1.08	1.1	1.07	1.9	1.44	1.0	3.60	1.2
Turkey	0.79	1.1	0.71	0.7	0.31	0.6	0.60	0.4	1.62	0.6
UK	2.44	3.4	9.30	9.5	3.55	6.4	9.20	6.6	22.05	7.5
U.S.	15.68	21.9	15.07 [1]	15.3	18.14	32.8	37.20	26.8	70.40	24.1
EU (total)	*16.41*	*22.9*	*36.07*	*36.7*	*10.19*	*18.4*	*44.95*	*32.4*	*91.21*	*31.2*
EU (excluding individual G-20 members)[3]	5.95	8.3	11.54	11.8	2.92	5.3	19.04	13.7	33.51	11.5
G-20 total [4]	**61.47**	**85.7**	**88.74**	**90.4**	**44.90**	**81.2**	**130.64**	**94.2**	**264.28**	**90.4**
Total world	***71.71***	***100.0***	***98.19***	***100.0***	***55.32***	***100.0***	***138.75***	***100.0***	***292.26***	***100.0***

Sources: IMF WEO, IMF IFS, Bankscope, Bloomberg, BIS.

[1] Based on consolidated, publicly traded banks, which include commercial banks, savings banks, cooperative banks, investment banks, and bank holding companies.

[2] Public + private debt securities.

[3] Excludes data reported separately for France, Germany, Italy, and the UK; EU members that do not have separate individual representation in the G-20 include Austria, Belgium, Denmark, Finland, Greece, Ireland, Luxembourg, the Netherlands, Portugal, Spain, and Sweden.

The main objectives of the G-20 are to coordinate policies among its members "to achieve economic stability [and] sustainable growth," promote "financial regulations that reduce risks and prevent future financial crises," and "moderniz[e] international financial architecture."[9] The G-20 defines itself as the "premier forum for international cooperation on the most important issues of the global economic and financial agenda."[10] These objectives and, especially, the G-20's unambiguous assertion of a global leadership role seem somewhat at odds with common perceptions of leading roles traditionally played by better-known international policymaking groups, including in particular the BCBS and IMF. Its mission also constituted a change from the more limited regulatory roles of the G-7 and G-8.[11]

Drawing on official G-20 statements, including key passages in communiqués and declarations issued by G-20 leaders at various summits, Nolle (2013) addresses what he terms the "policy-making flow" underlying G-20 initiatives. Figure 1 summarizes his explanation. The top three sections in the figure show the explicit hierarchical nature of policy deliberation and decision-making within the organization.

Featured prominently is the role of the Financial Stability Board (FSB). The FSB is a somewhat obscure entity that nevertheless exerts tremendous influence on international financial system policy.[12] When the G-20 assumed global leadership at the depths of the crisis in late 2008, ministers, governors, and leaders were confronted with unprecedented demands to respond both rapidly and wisely. They moved quickly to establish a separate, strong, and permanent body to develop, implement, and oversee their stabilization and reform plans. Specifically, at their April 2009 summit in London, G-20 leaders "establish[ed] a new Financial Stability Board (FSB) with a strengthened mandate, as a successor to the Financial Stability Forum (FSF)."[13] As the middle section of the graphic explains, that mandate included not only *coordination* of international efforts to reform the financial system, but *oversight* of the actions necessary to actualize those reforms.[14]

Also depicted is the FSB's implicit leadership, on behalf of the G-20, in cooperating with independent organizations on selected issues. The lower left-hand panel in the figure summarizes the "international

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[9] "What Is the G20?" at www.g20.org/docs/about/about_G20.html.

[10] *Ibid.*

[11] For a full description of the international regulatory architecture, see Brummer (2012).

[12] Certainly as of the date of this paper, the FSB was a "somewhat obscure entity," which provided part of the motivation for writing it.

[13] *London Summit - Leaders' Statement*, April 2, 2009, point #15. The FSF was in essence an in-house think tank for G-20 ministers and governors.

[14] See the FSB's *Mandate* at www.financialstabilityboard.org/about/mandate.htm. As explained in greater detail in Nolle (2013), the FSB includes all G-20 members, but membership is not limited to the G-20. In addition, the FSB includes major "international standard setting, regulatory, supervisory, and central bank bodies." Nevertheless, non-G-20 FSB members have a small role on the FSB Plenary. Likewise, perhaps more importantly, on the Steering Committee, and G-20 representatives lead most FSB committees and working groups. Also see Nolle (2013) for further discussion of the nature and operational structure of the ministers and governors. He notes that, although the G-20 has no permanent secretariat and staff, it does have a well-defined internal operational structure. The group designates a member as the group's president for a given year, and that member is responsible for organizing periodic meetings of the ministers and governors and to organize, host, and chair the Leaders' Summit for that year. In addition, the designated member has responsibility for the official website design, maintenance, and content. In 2013, Russia holds the G-20 presidency, with the Leaders' Summit scheduled for St. Petersburg in September.

standard setting bodies," including the BCBS.[15] As noted, each continues to pursue an independent agenda. Even so, an important operational corollary to the FSB's coordinating role with respect to the standard-setting bodies is that it acts as first among equals in aligning selected activities of the standard setters "to address any overlaps or gaps and clarify demarcations in light of changes in national and regional regulatory structures relating to prudential and systemic risk, market integrity, and investor and consumer protection, infrastructure, as well as accounting and auditing."[16]

The bottom right-hand panel in Figure 1 summarizes the work of other major international organizations as it relates to the FSB and, ultimately, the G-20 reform agenda. Chief among these is the International Monetary Fund. Starting with the first Leaders' Summit in November 2008, the IMF has been named in every Summit communiqué for its important roles in the global financial system. Furthermore, since the FSB's creation was announced in the London Summit communiqué of April 2009, the FSB's collaboration with the IMF on major initiatives has been featured.[17]

Nevertheless, there has also been a subtle, and perhaps somewhat implicit, understanding that the G-20 envisions the IMF deferring and reporting to the FSB in selected instances. That inference hinges in part on the fact that in addition to reforming the global financial system, another G-20 post-crisis priority has been the reform of the "international financial architecture,"[18] represented in particular by work to

[15] The "international standard setting bodies" are politically and legally independent groups of regulatory and supervisory authorities from member countries whose purpose is to "set out what are widely accepted as good principles, practices, and guidelines" under which firms and supervisory authorities in a given economic or financial sector should operate (FSB, *What Are Standards?* at www.financialstabilityboard.org/cos/standards.htm); and FSB, *Who Are the Standard-Setting Bodies?* at www.financialstabilityboard.org/cos/wssb.htm. Besides the BCBS, other major standard setters include the International Association of Insurance Supervisors (IAIS), the International Organization of Securities Commissions (IOSCO), and the International Accounting Standards Board (IASB). Note that the FSB includes the IMF, the World Bank, and the OECD (as well as itself) among the international standard setters, whereas, following Nolle (2013), in Figure 1 those organizations are categorized as "other international organizations" in recognition of the fact that their mission and work, while encompassing standard setting, is broader in scope. Table A.2 in the Appendix lists the international standard setters and summarizes their functions. Table A.3 shows the extent of membership overlap among the G-20 and FSB, as well as the Basel Committee and other key international standard setting bodies.

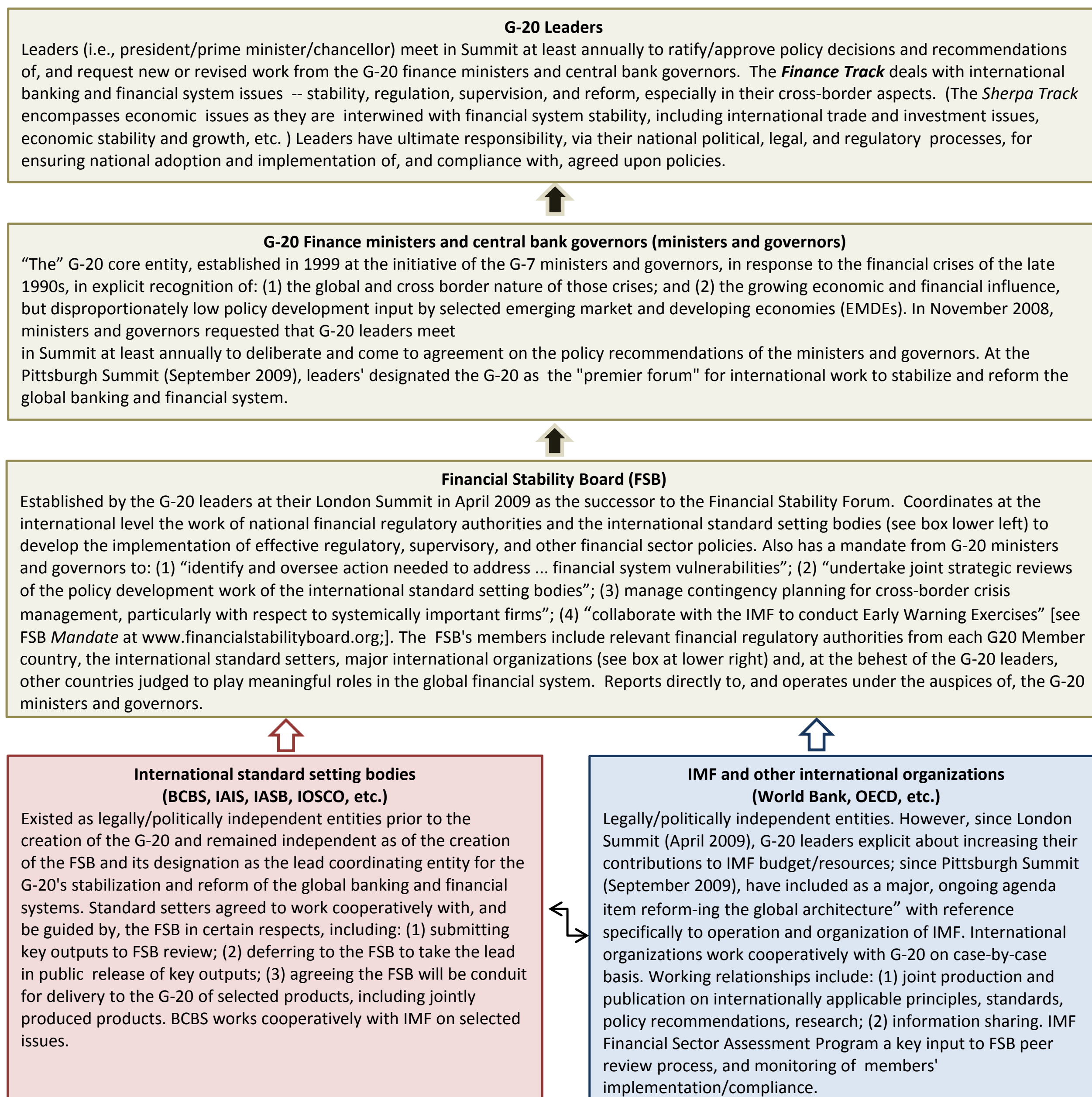
[16] FSB, *Charter of the Financial Stability Board*, Article 2(2), June 2012. The *Charter* also states that "in areas which do not fall within the functional domain of another international standard setting body, or on issues that have cross-sectional implications," the "FSB should, as needed ... develop or coordinate development of standards and principles, in coordination with the SSBs and others" (Article 2(3)). "SSBs" signifies the international standard setting bodies. Nolle (2013) describes several concrete manifestations of this dimension of the FSB's authority including, importantly, the FSB's production of "Key Standards for Sound Financial Systems," a compendium of selected core principles, codes of good practices, etc. from international standard setters and other international organizations (see www.financialstabilityboard.org/cos/key_standards.htm). The FSB is explicit about its authority in this area: "The list of key standards will be periodically reviewed and updated by the FSB."

[17] See, e.g., *London Summit - Leaders' Statement*, April 2, 2009, point #15, bullet #2, which states that the "FSB should collaborate with the IMF to provide early warning of macroeconomic and financial risks and the actions needed to address them."

[18] This phrase appears in the *G20 Leaders' Declaration* at the Los Cabos Summit, June 18-19, 2012. Other terminology covering this topic includes: "global architecture" (Pittsburgh Summit, Sept. 24-25, 2009); "strengthening the IFIs" [international financial institutions] (Toronto Summit, June 26-27, 2010); "more stable and resilient International Monetary System" (Cannes Summit, Nov. 3-4, 2011); and "the process to strengthen IMF resources to safeguard global financial stability and enhance the IMF's role in crisis prevention and resolution" (ministers and governors meeting in Mexico, Nov. 4-5, 2012).

"modernize [the] IMF [to] better reflect the changes in the world economy" and to "enhance the IMF's legitimacy, credibility, and effectiveness, making it an even stronger institution for promoting global financial stability and growth."[19] Such statements have typically been followed by G-20 commitments to substantially increase funding for the IMF.

Figure 1. G-20 Financial system reform policymaking flow: main entities and hierarchical relationships
(Solid arrow indicates explicit hierarchical relationship; hollow arrow indicates weak/implicit hierarchical relationship)



Source: Adapted from Nolle, Daniel E. (forthcoming) "Who's in Charge of Fixing the World's Financial System? The Under-appreciated Lead Role of the G20 and the FSB," Economics Working Paper (August 2013) Office of the Comptroller of the Currency.

[19] *The G20 Seoul Summit Leaders' Declaration*, Nov. 11-12, 2010, point #9, bullet #2.

I.B. G-20/FSB SIFI initiatives

As from their first summit in Washington, D.C., in November 2008, G-20 leaders have pursued a broad and ambitious agenda, first to stabilize, and then to repair and reform, the global financial system. One of their main targets has been the risks posed by the largest, most complex, and most interconnected financial firms, in particular banking companies. Since the full eruption of the global financial crisis, public documentation of G-20/FSB financial system reform work has become extensive and complex. Nolle (2013) presents a clear way to understand the nature and scope of that work, and we draw heavily on that study in the remainder of this section. He focuses on the major statements and communiqués emerging from the seven leaders' summits.[20] Those statements are in essence capstone summaries highlighting the nature and status of relevant G-20 and FSB workstreams, including those focusing on SIFIs. Table 2 distills the major reform themes highlighted at each summit. Together they provide a coherent picture of the emergence and evolution of the overall agenda and SIFI-related initiatives.

When G-20 leaders met in Washington, D.C., in November 2008, all were aware of the historic nature of the "serious challenges to the world economy and financial markets," and indeed leaders began their main summit statement on that note.[21] In that environment, as indicated in the "Washington, D.C." row of Table 2, leaders' main focus at the Washington Summit was the stabilization of global financial markets, which many feared were near meltdown. In response, they hammered out an ambitious, 47-point "action plan" that included a number of concrete, near-term measures.[22] SIFIs received considerable attention in the 47-point plan, but no "SIFIs agenda" *per se* was constructed.

As indicated in Table 2, at the London Summit in April 2009, financial stabilization continued to be the top priority for leaders. Indeed, their main summit document begins with: "We face the greatest challenge to the world economy in modern times; a crisis which has deepened since we last met."[23] Nevertheless, the beginnings of a long-term financial system reform agenda began to take shape. By the time leaders met again in September 2009 in Pittsburgh, Penn. -- the one-year anniversary, almost to the day, of the Lehman Brothers collapse and full eruption of the global crisis -- the world financial system had turned the corner.[24] As a consequence, beginning in Pittsburgh, leaders were able to shift considerable attention to financial reform initiatives, officially declaring at that summit that the G-20 had become the "premier forum" for international economic cooperation.[25]

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[20] We note that this paper was completed before the eighth Leaders' Summit in St. Petersburg, Russia, in September 2013. In his first draft, Nolle (2013) indicates that a future version of that paper will cover the event in a manner parallel to his treatment of the previous Leaders' Summits.

[21] *Declaration - Summit on Financial Markets and the World Economy*, point #1 (Nov. 15, 2008).

[22] See Nolle (2011) and (2012) for details.

[23] *London Summit Leaders' Statement*, April 2, 2009, point #2.

[24]This was triumphantly noted in the *Leaders' Statement, the Pittsburgh Summit*, September 24-25, 2009, without, however, discussion of what caused the improvement. One policy measure that helped to stabilize the global financial system was the so-called "stress tests" of the 19 largest banking companies in the U.S., conducted by the the Federal Reserve System, the FDIC, and the Office of the Comptroller of the Currency. Formally titled the Supervisory Capital Assessment Program, the results were widely considered credible and positive for the U.S. banking industry when they were released in May 2009, just a month after the anxiety-laden *London Summit Leaders' Statement.*

[25] *Leaders' Statement, the Pittsburgh Summit*, Sept. 24-25, 2009, point # 19.

Table 2.
The emergence and evolution of the G-20 and FSB global financial system reform agenda
(*A stylized summary of G-20 Leaders' Summit proceedings since the onset of the financial crisis*)*

G-20 Leaders' Summit	Summary of global financial system reform policy development	Main reference documents
Washington, D.C. (*Nov. 15, 2008*)	At the behest of the G-20 Finance Ministers and Central Bank Governors ("ministers and governors"), the heads of governments of each of the G-20 members met for the first time in summit to address the rapidly expanding financial crisis. Their main focus was on financial system *stabilization*, but they also began substantive dialogue aimed at repairing and reforming the global financial system. Leaders committed to work cooperatively to greatly reduce the likelihood of crises, ensure the strength and resilience of the financial system in time of crisis, and protect taxpayers from shouldering the burden of system repair. Outlined five "common principles for reform" of the financial system: (1) strengthening transparency and accountability; (2) enhancing sound regulation; (3) promoting integrity in financial markets; (4) reinforcing international cooperation; (5) reforming international financial institutions. Followed this with a 47-point "action plan" that grouped each point under the relevant common principle and, within each group, designated points for "immediate action" by end-Q1-2009, or as "medium-term actions" afterward. Leaders assigned overall responsibility for the action plan and for further agenda-setting to G-20 ministers & governors, to be assisted by the Financial Stability Forum (FSF), the IMF, and the international standard setting bodies.[1] Called for an expansion of FSF membership to include more emerging market economies (EMEs). Agreed to meet in summit again in April 2009 and to continue Leaders' Summits on at least an annual basis but more frequently as warranted.	*Declaration - Summit on Financial Markets and the World Economy*
London (*April 2, 2009*)	The *London Summit Leaders' Statement* begins: "We face the greatest challenge to the world economy in modern times; a crisis which has deepened since we last met [in Nov. 2008 in Washington, D.C.] … and which all countries must join together to resolve. A global crisis requires a global solution." Main emphasis continues to be on financial system *stabilization* vs. financial system *repair/reform*. Rationalization of financial system agenda into several broad initiatives begins to take shape. **<u>SIFI initiatives</u>** feature prominently: Basic principle: End "too big to fail" [TBTF]. **Bank capital**: "improve the quality, quantity, and international consistency of capital in the banking system"; **SIFI regulation and supervision**: expand the scope of "regulation and oversight to all systemically important financial institutions [SIFIs], instruments, and markets"; **Resolution regimes**: develop effective policies to resolve financial institutions. **<u>Other major initiatives</u>** **OTC derivatives**: "Promote the standardization and resilience of credit derivatives markets … through the establishment of central clearing counterparties subject to effective regulation and supervision"; **Accounting standards**: "achieve a single set of high-quality global accounting standards"; **Compensation**: called for member countries to develop "compensation structures that are consistent with firms' long-term goals and prudent risk taking"; **International cooperation**: establish "greater consistency and systematic cooperation between countries, and [a] framework of internationally agreed high standards," particularly as those standards apply to "non-cooperative jurisdictions." The *Declaration on Strengthening the Financial System* reconstitutes the Financial Stability Forum as the **Financial Stability Board [FSB]**, and **designates the FSB as the G-20 ministers and governors' lead entity** for pursuing its stabilization and reform agenda.	*London Summit - Leaders' Statement* *The Global Plan for Recovery and Reform* *Declaration on Strengthening the Financial System* *Declaration on Delivering Resources Through the International Financial Institutions* *Progress Report on the Actions of the Washington Action Plan*
Pittsburgh, Penn. (*Sept. 24-25, 2009*)	The *Leaders' Statement, the Pittsburgh Summit* begins with observations about substantial improvements in global financial stability since the London Summit (April 2009), due to the G-20s' cooperative efforts to "do everything necessary to ensure recovery, to repair our financial systems, and to maintain the global flow of capital," after which the *Statement* asserts, "It worked." In those circumstances, Leaders' shifted thier main emphasis from financial system stabilization to financial system *reform*. Leaders asserted in Pittsburgh that the "***G20*** [is] the ***premier forum*** for our international economic cooperation." In consequence, the FSB, under the auspices of the G-20 ministers and governors, becomes the lead entity for a wide spectrum of financial sector reform work begun or actively contemplated by the major multilaterals [IMF and World Bank] and the international standard setting bodies. Although financial system reform occupied center stage in Pittsburgh, Leaders began to focus explicitly on economic growth, as outlined in another Summit document, *The Framework for Strong, Sustainable and Balanced Growth*. **<u>SIFI initiatives</u>**: Leaders firmed up/fleshed out SIFI-related agenda topics set out at the London Summit. **Bank capital and liquidity**: Leaders committed to developing by end-2010 internationally agreed rules to improve the quantity and quality of bank capital, to discourage excessive leverage, and mitigate pro-cyclicality. This work to proceed under the auspices of the Basel Committee on Banking Supervision (BCBS). Members strongly urged Basel II adoption by end-2011. **SIFI regulation and supervision**: To eliminate TBTF, and the moral hazard/excessive risk-taking behavior it elicits, Leaders agreed SIFIs should be subject to higher capital requirements and heightened prudential standards. **Resolution regimes**: Leaders encouraged countries to "develop resolution tools and frameworks for the effective resolution of financial groups to help mitigate the disruption of financial institution failures and reduce moral hazard," and they agreed to "establish crisis management groups for the major cross-border firms … a legal framework for crisis intervention, and improve[d] information sharing in times of stress." **<u>Other major initiatives</u>** **OTC derivatives**: Leaders specified the focus of new work would be on development of policies to improve transparency and regulatory oversight. **Accounting standards**: Leaders called for the major accounting standards bodies to develop and converge to a single set of high-quality global accounting standards by end-2011.[2] **Compensation**: Endorsed the **FSB's new compensation principles and standards** and tasked the FSB with monitoring members' implementation of those standards. **International cooperation**: Non-cooperative jurisdictions: Leaders committed to developing global standards for dealing with tax havens, money laundering, proceeds of corruption, terrorist financing, and prudential standards.	*Leaders' Statement, the Pittsburgh Summit*

(Table 2, continued)

G-20 Leaders' Summit	Summary of global financial system reform policy development	Main reference documents
Toronto (***June 26-27, 2010)***	Financial system reform still central but increasingly viewed within the context of its contribution to renewed economic growth. Increasing focus on macroeconomic policies. Financial reform agenda recast as "Four Pillars," blending SIFI-related and other major initiatives. ***Pillar 1 :*** Strong regulatory framework ***Pillar 2 :*** Effective supervision; ***Pillar 3 :*** Resolution and addressing systemically important institutions; ***Pillar 4*** : Transparent international assessment and peer review.[3] **<u>SIFI Initiatives</u>** **Bank capital and liquidity**: G-20 Leaders agreed that the "core of the financial sector reform agenda rests on improving the strength of capital and liquidity and discouraging excess leverage." Committed to reaching an agreement by Seoul Summit [November 2010] on a stronger capital and liquidity framework under auspices of the BCBS, with G-20 members' adoption by end-2012. Key elements to include: [1] new Tier 1 requirement with increased emphasis on share of common equity capital; [2] globally consistent, transparent, conservative deductions to common equity standard; [3] introduction of a new leverage ratio to discourage excessive leverage and risk taking and reduce procyclicality; [4] leverage ratio "migration to Basel Pillar I treatment after an appropriate transition period." Reiterated Pittsburgh Summit commitment for Basel II adoption by 2011. **SIFIs regulation and supervision**: Agreed that "new, stronger (capital and liquidity) rules be complemented with more effective oversight and supervision." Committed to BCBS *Core Principles for Effective Banking Supervision* . Tasked the FSB [in consultation with the IMF] to report before Seoul Summit on recommendations to strengthen oversight and supervision. **Resolution regimes**: Leaders reiterated their pledge "to reduce moral hazard in the financial system" with particular focus on SIFIs; committed to implementation of BCBS' 10 key recommendations on cross-border bank resolution;[4] committed to secure powers and tools under their respective national legal systems to restructure or resolve all types of financial institutions in crisis, without taxpayers ultimately bearing the burden; agreed on key characteristics that resolution regimes should embody; tasked the FSB, by the Seoul Summit, to develop concrete policy recommendations to address risks posed by SIFIs and to resolve failed SIFIs. **<u>Other major initiatives</u>**: **OTC derivatives**: Committed to accelerate implementation of strong measures to improve transparency and oversight of OTC derivatives. **Accounting standards**: Renewed call for single set of high-quality global accounting standards and convergence by end-2011. **Compensation:** Renewed commitment to implementation of FSB compensation standards. **International cooperation**: Pledged "to support robust and transparent independent international assessment and peer review of our financial systems"; strengthened commitment to IMF/World Bank Financial Sector Assessment Program (FSAP); agreed to consider measures to address non-cooperative jurisdictions; supported FSB's thematic peer review process. **<u>New or upgraded initiatives</u>**: **Credit rating agencies**: Added to main agenda work to reduce reliance on external ratings in rules and supervision.	*The G20 Toronto Summit Declaration*
Seoul **(*Nov. 11-12, 2010)***	First Summit in which Leaders could point to major, concrete financial system reform accomplishments, noting that "today, we have delivered core elements of the new financial regulatory framework to transform the global financial system." Also expressed confidence that a strong consensus existed for all major objectives. Implicitly returned to the agenda framework outlined at the Pittsburgh Summit (as opposed to the Toronto Four Pillars), with some adjustments and key changes in relative emphases, including special emphasis on SIFIs. **<u>SIFI initiatives</u>** **Bank capital and liquidity**: Leaders endorsed the BCBS' new bank capital and liquidity framework, known as "Basel III."[5] Committed "to adopt and implement fully these standards within the agreed timeframe that is consistent with economic recovery and financial stability." Specific timeframe commitment: "The new framework will be translated into our national laws and regulations, and will be implemented starting on January 1, 2013 and fully phased in by January 1, 2019." **SIFI regulation and supervision; resolution regimes**: Endorsed the FSB's proposed "multi-pronged framework" and its detailed workplan for dealing with these issues, in the process effectively reorganizing a large portion of the G-20 financial reform agenda. The FSB's framework combining these issues was centered on SIFIs and composed of five main parts: [1] heightening prudential standards, with emphasis on higher loss absorbency capacity; [2] making SIFI resolution a viable policy option; [3] strengthening supervision of SIFIs; [4] strengthening core infrastructures;[6] and [5] ensuring consistent implementation of national policies.[7] Leaders agreed with the FSB recommendation that the initial focus of this work be on "G-SIFIs" [global systemically important financial institutions]; and a necessary first step is **identification of G-SIFIs**. **<u>Other major initiatives</u>**: "[F]irmly recommitted to Pittsburgh and Toronto Statements and ongoing work" on **OTC derivatives, accounting standards, compensation, international cooperation, and credit rating agencies.** **<u>New or upgraded initiatives</u>**: **Shadow banking system**: Tasked the FSB to work with international standard setting bodies "to develop recommendations to strengthen the regulation and supervision of the shadow banking system by mid-2011"; **Emerging market and developing economies [EMDEs]**: Called on the FSB, IMF, and World Bank to produce a report before the next Summit [Cannes, November 2011] on "financial stability issues that are of particular interest to emerging market and developing economies"; **Consumer protection**: Tasked FSB to work with OECD and other international organizations "to explore … options to advance consumer finance protection." Report due by Cannes Summit, November 2011; **FSB resources and governance**: FSB to report "well before next Summit" to G-20 finance ministers and central bank governors on proposals to "strengthen its capacity, resources, and governance."	*The G20 Seoul Summit Leaders' Declaration* *The Seoul Summit Document*

(Table 2, continued)		
G-20 Leaders' Summit	**Summary of global financial system reform policy development**	**Main reference documents**
Cannes (*Nov. 3-4, 2011)*	Leaders begin by noting that "global [economic] recovery has weakened" since November 2010 Summit; the Summit Communiqué notes in particular the sovereign debt problems in Europe. In response, Leaders' central focus is on macroeconomics and the coordination of national macroeconomic "actions and policies" to counter flagging economic recovery. Within that overall context, the major financial system reform emphases are systemic risk topics, especially TBTF/SIFIs. Also emphasized is monitoring members' implementation of major policy commitments. Leaders also heightened the profile of, and deepened their commitment to, two issues added to the agenda at the Seoul Summit: [1] "the regulation and oversight of shadow banking;" and [2] the "reform of the FSB," especially with respect to its "capacity," resources, and governance. **<u>SIFI initiatives</u>**: Leaders endorsed FSBs' "comprehensive policy framework" on **TBTF/SIFIs**. The **four major workstreams** comprising the FSB framework address: [1] development of "a new **international standard for resolution regimes"** and requirements for cross-border cooperation, recovery, and resolution planning; in this regard, Leaders endorsed a major principles document produced by the FSB ahead of the Summit (*Key Attributes of Effective Resolution Regimes for Financial Institutions [October 2011]*); [2] "more **intensive and effective supervision"** of G-SIFIs; [3] "**additional loss absorbency"** requirements for G-SIFIs; and [4] the prerequisite step of **identifying and designating** G-SIFIs. In that vein, Leaders congratulated the FSB on completing on schedule its initial identification of G-SIFIs and noted that that list will be updated "each year in November." All of the G-SIFIs designated were banking companies, subsequently referred to as "**G-SIBs"** (global systemically important banks).[8] <u>Other major initiatives</u>: **Reaffirmed commitments** on initiatives covering **OTC derivatives,** a**ccounting standards, compensation practices**, **non-cooperative jurisdictions, consumer protection, EMDEs, implementation monitoring, shadow banking, FSB resources and governance,** and reducing reliance on external **credit rating agencies.** **<u>New or upgraded initiatives</u>**: **Credit default swaps [CDS] markets**: Leaders tasked International Organization of Securities Commissions (IOSCO) with assessing the integrity and efficiency of CDS markets. **Commodity markets**: endorsed IOSCO recommendations to improve the regulation and supervision of **commodity derivatives markets**; and "launched the 'Agricultural Market Information System [AMIS]' to reinforce transparency on agricultural products' markets." **Legal Entity Identifier [LEI]**: endorsed the creation of a global LEI "which uniquely identifies parties to financial transactions"; FSB assigned lead role in coordinating necessary work among the regulatory community.	*The G20 Cannes Summit Communiqué* *"Building Our Common Future: Renewed Collective Action for the Benefit of All," Cannes Summit Final Declaration*
Los Cabos, Mexico (*June 18-19, 2012)*	Leaders again called attention to the "challenging economic context" in which countries around the world were operating and noted in particular that "financial market tensions were high, and external, fiscal and financial imbalances were still prevalent."[9] Of greatest concern was the "Euro Area"; as a consequence, "Euro Area members of the G20 agreed to … improve the functioning of financial markets and break the feedback loop between sovereigns and banks." In these circumstances, global macroeconomic stability and growth were the most important focus at the Summit. In this context, Leaders' emphasis in their discussions of the financial system reform agenda was on the progress made to date on a range of initiatives. In that vein, they applauded the FSB's Coordination Framework for **Implementation Monitoring.** **<u>SIFI Initiatives</u>**: Leaders' SIFI-related discussion followed the "comprehensive policy framework" of the FSB, first noted at the previous year's Summit in Cannes. Specifically, **[1]** on **resolution regimes**, Leaders reiterated their commitment "to make our national resolution regimes consistent with the FSB *Key Attributes of Effective Resolution Regimes* so that no bank or other financial institution is "too big to fail." Leaders also noted the beginnings of work by a few members in the development of "recovery and resolution plans and institution-specific cross-border cooperation agreements" for G-SIFIs. On **[2] SIFIs supervision**, Leaders tasked the FSB to report on further progress by November 2012 to the Ministers & Governors; and they asked "IAIS to continue its work to develop a common framework for the supervision of internationally active insurance groups by end-2013." On **[3] loss absorbency/SIFI identification**, noted new FSB and BCBS work and initial progress on the development of a set of principles for the "identification of, and policy measures relating to, **domestically systemically important banks (D-SIBs)**," and they tasked Ministers & Governors to review forthcoming recommendations in this area at their November 2012 meeting. Leaders tasked the FSB, "in consultation with the IAIS," to "complete their work on identification and policy measures for **global systemically important insurers**" **(G-SIIs)** by April 2013. They also tasked the FSB, "in consultation with IOSCO," to prepare "methodologies to identify **other systemically important non-bank financial entities** by end-2012," and called on the "CPSS and IOSCO to continue their work on systemically important market infrastructures." Note that as from the Los Cabos Summit, the following terminology became standard: **G-SIFI** is understood in a **generic sense**, i.e., as a reference to **any type of financial institution** considered global-systemically important; **G-SIB refers** to a global-systemically important **banking company**; **G-SII refers to** a global-sytemically important **insurance company**; and, as from end-2012/early-2013, **NBNI G-SIFIs refers to** G-SIFIs that are **neither banking nor insurance companies**. Correspondingly, the use of "**D"** in place of "G" indicates an entity of a given type whose failure is judged systemically important at the national or "**domestic**" level. <u>Other major initiatives</u>: Leaders reaffirmed their commitments to, and noted substantial implementation progress on, initiatives covering **OTC derivatives, accounting standards, compensation practices, non-cooperative jurisdictions, EMDEs, shadow banking, credit rating agencies, and CDS markets**. On **FSB resources and governance**, Leaders endorsed the "recommendations and the revised FSB Charter for placing th eFSB on an enduring organizational footing, with legal personality, strengthened governance, greater financial autonomy, and enhanced capacity to coordinate the development and implementation of financial regulatory policies." Leaders called for "a full implementation of the recommendations" by their 2013 Summit [in St. Petersburg, Russia, in September]. On LEI, Leaders endorsed "the FSB recommendations regarding the framework for development of a global legal entity identifier (LEI) system" and asserted that "[t]he LEI system will be launched by March 2013."	*The G20 Los Cabos Summit Leaders' Declaration* *Policy Commitments by G20 Members - Los Cabos, Mexico [appended table]*

(Table 2, continued)		
G20 Leaders' Summit	**Summary of global financial system reform policy development**	**Main reference documents**
Pre-September 2013 **Summit in St. Petersburg, Russia**[10]	**Status of G-20/FSB global financial system reform agenda, mid-2013**: In a series of pre-St. Petersburg Summit reports to the G-20 ministers and governors, the FSB emphasized progress on, and ongoing attention to the following "priority areas," while also noting the continuing importance of the other initiatives to which the G-20 had committed since the depth of the financial crisis in November 2008: **1. Basel III**: FSB noted that 14 "member jurisdictions have issued final Basel III-based capital regulations" with the remaining member jurisdictions having pubished draft regulations. Emphasis to be placed on final adoption and implementation and on the continued assessment of consistency of national regulations. Remaining "outstanding components" on which "the BCBS intends to finalize its work" include the leverage ratio by end-2013, and by end-2014 the net stable funding ratio, the trading book, securitization, and large exposures. **2. Resolution regimes**: FSB noted in an April 2013 report and the peer review report underlying it that members had made limited progress in implementing the recommendations of the Key Attributes document endorsed by Leaders at the Cannes Summit.[11] Under those circumstances, the FSB recommended an aggressive schedule for progress at the national level by the St. Petersburg Summit.[12] **3. OTC derivatives**: FSB noted that its fifth OTC derviatives market reforms progress report[13] showed "considerable progress" in some respects, across many member jurisdictions, but "much remains to be done to complete the agreed reforms." High on the to-do list are national efforts to "rapidly issue detailed rules to implement the G-20 commitments to help remove regulatory uncertainty," obtaining better data, and more intense focus on cross-border issues. **4. Shadow banking**: The FSB reported that it had reviewed the results of public consultations on shadow banking policy issued in Novembe 2012, and that policy development thereafter had "continue[d] to advance," in particular by virtue of a BCBS consultative document on a proposed framework for measuring and controlling large bank exposures, including banks' exposures to bank-like activities conducted by non-banks.[14] The FSB promised to deliver a five-workstream package of policy recommendations at the St. Petersburg Summit. **5. Financial benchmark setting**: An important financial system issue that emerged after the Los Cabos Summit was "market manipulation and false reporting of LIBOR and other similar benchmark rates." In response, the FSB undertook a new high-priority initiative to address this issue and promised to report to the ministers and governors in July 2013 on the status and success of "measures proposed by national regulators, IOSCO, and central banks to restore the governance and oversight processes of benchmark rates." **6. Credit rating agencies**: The FSB reported it had developed a "roadmap to accelerate the implementation of its Principles for eliminating mechanistic reliance on credit rating agencies" and had completed a peer review of member jurisdictions' implementation. It promised a full progress report by the St. Petersburg Summit. The FSB also noted its work in contributing to a G-20 Study Group on **long-term investment finance**, focusing on how regulations affect institutional investors. A final priority highlighted by the FSB ahead of the St. Petersburg Summit was its ongoing assessments of members' implementation progress, including its regular reporting on **Implementation Monitoring** to ministers and governors and, as appropriate, G-20 leaders.	*The Progress of Financial Reforms* [Letter from the FSB chairman to G-20 ministers and central bank governors [April 15, 2013)] *Report to G20 Finance Ministers and Central Bank Governors on monitoring implementation of Basel III regulatory reform*, BCBS [April 2013]

*Source: Adapted from Nolle, Daniel E. (forthcoming) "Who's in Charge of Fixing the World's Financial System? The Un[?]der Appreciated Lead Role of the G20 and the FSB," *Economics Working Paper,* (August 2013), Office of the Comptroller of the Currency. Note that in the above table, all quotations in a given row come from the first document listed in the "Main Reference Document" column for that row, unless otherwise specified.

[1] The "international standard setting bodies" are the Basel Committee on Banking Supervision (BCBS), the Committee on the Global Financial System (CGFS), the Committee on Payment and Settlement Systems (CPSS), the Financial Action Task Force on Money Laundering (FATF), the International Association of Insurance Supervisors (IAIS), the International Accounting Standards Board (IASB), the International Organization of Securities Commissions (IOSCO), and the International Association of Deposit Insurers (IADI).

[2] Specifically, the IASB (the international accounting standard setter) was tasked with working cooperatively with the Financial Accounting Standards Board (FASB), the organization that sets U.S. accounting standards.

[3] See Nolle (2013) for a detailed description of the 4 Pillars framework.

[4] BCBS, "Report and Recommendations of the Cross-Border Bank Resolution Group" (March 2010).

[5] See BCBS, "Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems," Bank for International Settlements (BIS), December 2010. This document was officially released to the public several weeks after the Seoul Summit, but most of the framework was by then well known by virtue of BCBS announcements and speeches ahead of the Dec. 1, 2010, release date; see, e.g., BCBS, *Group of Governors and Heads of Supervision Announces Higher Global Minimum Capital Standards,* press release, BIS, (Sept. 12, 2010).

[6] "Core infrastructures" are payment systems, securities settlement systems, and central counterparties.

[7] This characterization follows the detailed explanation in the FSB's report to G-20 Finance Ministers and Central Bank Governors entitled "SIFI Project - Taking Forward Work on Identification, Higher Loss Absorbency, and Consistent Implementation of National Policies," which evolved rapidly after the Seoul Summit and was published Dec. 31, 2010. That report in turn was based on the main pre-Summit FSB paper from which Summit Communiqué language on this topic was drawn: "Reducing the Moral Hazard Posed by Systemically Important Financial Institutions: FSB Recommendations and Time Lines," FSB (Oct. 20, 2010).

[8] The FSB's first list of G-SIFIs was published simultaneously with the Cannes Summit; see FSB, "Policy Measures to Address Systemically Important Financial Institutions" (Nov. 4, 2011). The identification of the 29 entities designated as G-SIFIs by the FSB was based on methodology developed by the BCBS. See BCBS, "Global Systemically Important Banks: Assessment Methodology and the Additional Loss Absorbency Requirement," (November 2011). Nevertheless, note that it was the FSB, not the BCBS, which made the official, public designation. Note also that **all 29 entitities are banking companies** and hence were subsequently referred to as **G-SIBs**, rather than G-SIFIs.

[9] "The G20: its Role and Legacy," official 2013 G-20 website (hosted by Russia, the 2013 G-20 chair), at www.g20.org/docs/about/part_G20-print.html.

[10] Adapted with minor changes from Nolle (2013). The draft of that paper available to this chapter's authors was written prior to the St. Petersburg Summit of Sept. 5-6, 2013 (but note that in that draft, Nolle indicates he intends to produce a revised version after the St. Petersburg Summit to take account of developments).

[11] Respectively, "Implementing the FSB Key Attributes of Effective Resolution Regimes: How Far Have We Come?" FSB, Report to the G20 Finance Ministers and Central Bank Governors on progress in reforming resolution regimes and resolution planning for globally systemically important financial institutions (G-SIFIs) (April 15, 2013); and "Thematic Review on Resolution Regimes," FSB, Peer Review Report (April 11, 2013).

[12] See Table 3 in this chapter and the relevant discussion in the text for greater detail.

[13] "OTC Derivatives Market Reforms,Fifth Progress Report on Implementation," FSB (April 15, 2013).

[14] "Supervisory framework for measuring and controlling large exposures," BCBS (March 2013).

The boldest commitment leaders made at the Pittsburgh Summit was aimed at SIFIs. Specifically, they pledged to develop, before the end of 2010, new international bank capital standards. What became known as "Basel III" was launched in this manner. A commitment to produce a detailed plan for increasing the intensity of SIFI supervision was also announced at the Pittsburgh Summit and, as noted in Table 2, leaders began the process of cross-border resolution of global banks.

To sustain momentum in their financial reform work, and given the still fragile nature of world financial markets, G-20 leaders decided to meet twice in 2010, as they did in 2009.[26] The Toronto Summit of June 2010 served as a “dress rehearsal” for the November 2010 Summit in Seoul, by which time substantial progress had been made across G-20/FSB reform initiatives, including those focused on SIFIs. Front and center was the leaders' sign-off on the Basel III program.[27] In addition, leaders congratulated the FSB for its on-time completion of a comprehensive program of additional (non-Basel III) SIFI initiatives and endorsed the FSB's work plan for them. As noted in the "Seoul" row of Table 2, the FSB's “multi-pronged framework” covered five basic issues. Significantly, leaders agreed with the FSB's strategy of a near-term focus on G-SIFIs, including the immediate task of developing methodology to identify which institutions should be designated as G-SIFIs.

Over the next year, even as the distress in the euro zone sovereign debt-cum-banking system became front-page news, the FSB made considerable progress on its SIFI agenda, key parts of which relied heavily on the BCBS’ work.[28] By the November 3-4, 2011, Leaders' Summit in Cannes, that agenda had been reconfigured to emphasize three major workstreams focusing on G-SIFIs, as noted in the "Cannes" row of Table 2. A workstream addressing international standards for resolution was highlighted first, in light of the fact that the FSB had recently completed (in October 2011) its “Key Attributes for Effective Resolution Regimes for Financial Institutions.” The FSB's development at the international level of those 12 requirements continues to be one of its most noteworthy successes. As intended, it has guided the dialogue in many countries, as policymakers grapple with the challenges of shaping and implementing programs and processes for SIFI resolution.[29]

Leaders also congratulated the FSB on hitting the target set after the Seoul Summit for the initial identification and designation of G-SIFIs.[30] Those designations were based on a methodology developed by the BCBS (in close consultation with the FSB), details of which were released to the public at almost

[26] Since then, leaders have agreed to meet in summit annually, relying on major meetings of the G-20 ministers and governors to be scheduled more frequently to maintain momentum and assess progress.
[27] As noted at the bottom of Table 2, the official protocol on the issuance of Basel III was that final public release of the main document came, by design, a few weeks after the standards were endorsed by G-20 leaders at the Seoul Summit. By that time, the details of the program were public and well-known. Still, it is significant that, unlike the original Basel capital standards, or Basel II, the BCBS' was not the ultimate stamp of approval on Basel III. Note that the Basel III implementation schedule was first publicly specified in “Group of Governors and Heads of Supervision Announces Higher Global Minimum Capital Standards,” press release, BCBS (Sept. 12, 2010). Over time, there have been adjustments to that schedule as countries grapple with national legislative and legal requirements and other implementation challenges.
[28] For a description of the euro zone crisis, see, e.g., Lane (2013).
[29] See Box A.1 in the Appendix for a summary of the 12 attributes.
[30] The FSB announcement of the first 29 G-SIFIs was concurrent with the Cannes Summit. See FSB, “Policy Measures to Address Systemically Important Financial Institutions” (Nov. 4, 2011).

the same time as the FSB's G-SIFIs designations.[31] It is important to note that, although the 29 institutions designated were listed as "G-SIFIs," all were banking companies.[32] Over the next year, as the FSB broadened its focus to nonbank institutions, banking companies designated as globally significant came to be labeled, more accurately, "G-SIBs."

The policy paper in which the FSB made its initial G-SIFI designations covered other concrete measures that have closely guided SIFIs work through the 2012 Leaders' Summit in Los Cabos, Mexico, and, indeed, up to the present.[33] Drawing on that document, its sequel published a year later, and recent progress reports, the G-20/FSB SIFIs program is summarized in Table 3 under four main initiatives: (1) SIFI identification and designation (2) higher loss absorbency requirements for SIFIs, especially G-SIFIs (3) effective resolution regimes aimed at eliminating both moral hazard behavior and taxpayer bailouts and (4) enhanced SIFI supervision.[34] We conclude this section by highlighting points covered in Table 3.

From Table 3 it is clear that by far the most progress has been made with respect to banks, especially G-SIBs. The "Higher Loss Absorbency Requirements" row in Table 3 indicates that, by August 2013, 23 of the 25 FSB member jurisdictions had issued final Basel III risk-based capital (RBC) regulations and were on track to begin the implementation phase-in during 2013.[35] In addition, by August 2013, almost half of FSB members had responded with final or draft rules to the BCBS' January 2013 issuance of details for the liquidity coverage ratio (LCR) component of the Basel III framework.[36] For G-SIBs, as discussed above, the BCBS established an internationally agreed methodology for their identification, which the FSB had used in 2011 and 2012. In consequence, G-SIBs will soon be subject to higher capital requirements. In addition, the last row in Table 3 shows that higher supervisory standards for banks were approved by the BCBS in 2012, and implementation of the standards contained in the BCBS' "Core Principles for Effective Banking Supervision" was underway across G-20 member countries.

Table 3 also shows that the FSB had begun to turn its attention to nonbank G-SIFIs as well as to domestic systemically important banks (D-SIBs). Of note, in July 2013, the International Association of Insurance Supervisors published its identification methodology for globally significant insurance companies (G-SIIs), and, using that methodology, the FSB designated an initial group of nine G-SIIs.[37] Nevertheless, work had progressed less for systemically important nonbanks than for banks across major SIFI agenda components. We now turn from global SIFIs to a review of policies at the country level, targeting the most important subset of SIFIs, the systemically important banks (SIBs).

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[31] The BCBS' initial identification methodology was published as BCBS, "Global Systemically Important Banks: Assessment Methodology and Additional Loss Absorbency Requirements" (November 2011).

[32] Specifically, see the terminology used in the one page Annex at the end of the FSB's "Policy Measures to Address Systemically Important Financial Institutions" report. See Table A.1 in this paper's Appendix for a list of the November 2011-designated "G-SIFIs" as well as the banks designated the following November, when they were called "G-SIBs."

[33] For this paper, "the present" refers to the beginning of the third quarter of 2013.

[34] The "sequel" to the FSB's November 2011"Policy Measures to Address Systemically Important Financial Institutions" is the update of the group of global systemically important banks (G-SIBs), Nov. 1, 2012.

[35] As noted in Table 3, as of August 2013, 11 FSB members had already started the RBC phase-in, and 12 were likely to meet an end-2013 deadline for doing so. Even Indonesia and Turkey, which as of August 2013 had not issued final RBC rules, had draft rules in place, and were likely to finalize those rules by end-2013.

[36] BCBS, "The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools" (January 2013).

[37] See Table A.4 in the Appendix for a list of the nine G-SIIs and a summary of the policy implementation schedule applying to them.

Table 3.
The global response on SIFIs five years after the eruption of the global financial crisis:
The G-20/FSB SIFI agenda - priorities and progress[1]

Overall SIFIs project objective: Eliminate TBTF view and the moral hazard/excessive risk-taking behavior it elicits. Establish and foster cooperation among countries, especially regarding the supervision and orderly cross-border resolution of G-SIFIs.[2]

SIFI agenda issue	Basic objective	Main achievements/progress
SIFIs identification and designation	Development of internationally consistent methodologies for determining financial firms of systemic importance at the relevant level (i.e., globally [G-SIFIs] or nationally/domestically [D-SIFIs]).	G-SIBs: In response to a major initiative of the G-20 Leaders, BCBS published G-SIBs identification methodology, November 2011.[3] FSB designated first group of 29 G-SIBs in November 2011 and committed to updating those designations annually in November;[4] FSB published the first annual update of G-SIBs designations in November 2012.[5] Globally systemically important insurance companies (G-SIIs): In July 2013, the International Association of Insurance Supervisors (IAIS) published a methodology for identifying G-SIIs.6 Using that methodology, the FSB announced in July 2013 its initial list of G-SIIs and the policy implementation schedule for G-SIIs.[17] As with G-SIBs designations, the FSB will update G-SIIs designations annually in November (with the first annual update scheduled for November 2014). Other nonbank G-SIFIs: The International Organization of Securities Commissions (IOSCO) committed to work in consultation with the FSB to produce a "proposed assessment methodology for identifying systemically important non-bank non-insurance financial institutions" by end-2013.[5] Domestic systemically important banks (D-SIBs): In response to an FSB initiative, the BCBS began work at a mostly conceptual level on D-SIBs in late 2012. The BCBS published a high-level "principles" discussion document on D-SIBs in October 2012.[7]
Higher loss absorbency (HLA) requirements for SIFIs	SIFIs "should have loss absorbtion capacity beyond the minimum agreed Basel III standards (and) should have a higher share of their balance sheets funded by capital and/or by other instruments which increase the resilience of the institution as a going concern."2	**For Banks: Basel III** capital and liquidity standards, and implementation timeline, published in December 2010.[8] **Risked-based capital (RBC) standards** are to be phased in beginning in 2013; as of August 2013, 23 of the 25 FSB jurisdictions had issued final rules, including the EU (June 2013) and the U.S. (July 2013). In 11 of those jurisdictions, the final RBC rules were already in force (Australia, Canada, China, India, Japan, Mexico, Saudi Arabia, South Africa, Hong Kong SAR, Singapore, and Switzerland),[9] with the other 14 jurisdictions set to activate the rules in the near term. Indonesia and Turkey had draft rules in place and efforts underway to issue final rules by end-2013. The **Liquidity Coverage Ratio (LCR)** standard is to be phased in as of January 2015; as of August 2013, eight FSB members had issued final LCR rules (France, Germany, Italy, South Africa, the U.K., the Netherlands, Spain, and Switzerland), and four had issued draft LCR rules (Australia, India, Russia, and Hong Kong SAR). As of August 2013, the BCBS had not issued detailed guidelines for the **Leverage Ratio** and **Net Stable Funding Ratio** standards. As a consequence, national initiatives lagged the RBC and LCR efforts. **G-SIBs**: As from November 2012, banks designated G-SIBs were grouped according to one of five "buckets," where each bucket indicates the **higher loss absorbency (HLA) requirement** applicable to G-SIBs in the given bucket. Specifically, the HLA is calculated as (additional) common equity loss absorbency as a percentage of risk-weighted assets, with the lowest bucket requiring 1% additional loss absorbency capital so calculated, and the remaining four buckets rising in 0.5 percentage-point increments, as laid out in the November 2011 BCBS G-SIBs methodology document.[3] Note that, in effect, the November 2011 and 2012 G-SIB designations were "trial runs" designed to make clear to the banking industry and regulators how the G-SIBs desigations-cum-HLAs will work once fully in force in 2016, as applied to G-SIBs designated in November 2014.[5] **G-SIIs**: Work on specific HLA requirements and other standards for G-SIIs was slated for completion by the Leaders' Summit in 2014, with implementation to be phased in over subsequent years.[6]
SIFIs resolution framework	"SIFI resolution must be a viable option" … an effective resolution "regime must be able to prevent the systemic damage caused by a disorderly collapse without exposing the taxpayer to the risk of loss."[2] In particular, G-20 leaders and ministers & governors have committed "to ensure that all global systemically important financial institutions are resolvable."[11]	In October 2011, the FSB published its "Key Attributes of Effective Resolution Regimes."[10] In April 2013, the FSB published its first comprehensive "thematic review" of resolution regimes in each of its 24 member countries.[11] The purpose of that and future reviews is "to support the timely and consistent implementation by FSB jurisdictions of agreed reforms."[12] The main findings were: (1) "some FSB jurisdictions have undertaken major reforms to their resolution regimes since the crisis"; (2) "several others are in the process of adopting reforms to further strengthen their regimes and align them to the *Key Attributes*"; but (3) especially with respect to "operational resolution plans and firm-specific cross-border cooperation agreements (COAGs) that set out a process for cooperation and information sharing for all G-SIFIs … progress has been relatively slow both because the issue is complex and because in many jurisdictions the powers necessary for implementing a preferred resolution strategy have not yet been provided."[13] The April 2013 thematic review identified nine specific "areas in need of legislative or other action in FSB Members' jurisdictions" in order to fully implement the *Key Attributes*.[13] The thematic review specifically notes that the **banking industry** has so far been the FSB's priority focus, but the FSB laid out several broad nonbank initiatives on which future efforts will begin to focus.[13]
Increased supervisory intensity	"Every country must have a supervisory system that is up to the task of ensuring that the regulations, including the new regulations coming out of Basel III, are backed up by effective risk assessments and enforcement, especially as it relates to SIFIs."[2]	The FSB initially laid out principles for effective supervision of SIFIs in its 2010 report "Reducing the Moral Hazard Posed by Systemically Important Financial Institutions." Since then, it has produced several major progress reports on Members' SIFIs' supervisory policies and practices, the most recent in November 2012.[14] The FSB has focused particularly on risk management, producing in February 2013 a thematic review on Members' supervisory practices in this respect.[15] **Banking industry**: In its October 2010 report to the G-20 on how member countries had responded to the financial crisis, the BCBS committed to a thorough update of its *Core Principles for Effective Banking Supervision*. The BCBS published its revised **Core Principles** in September 2012. G-SIBs: G-SIBs designated by the FSB in either 2011 or 2012 are required, by January 2016, to meet higher supervisory standards, particularly for "data aggregation capabilities and risk reporting."[5] **Nonbanks**: No deadline was set in the FSB's November 2012 G-SIBs designation report for nonbank G-SIFIs to begin to meet higher supervisory standards.[5] In April 2013, the FSB designated as one of its five priority areas "strengthening the oversight and regulation of shadow banking."[16] In general, FSB work on the supervision of nonbank SIFIs has progressed less than for SIBs.

*****Source: Adapted from Nolle, Daniel E. (forthcoming) "Who's in Charge of Fixing the World's Financial System? The Un[?]der Appreciated Lead Role of the G20 and the FSB," Economics Working Paper (August 2013), Office of the Comptroller of the Currency. The draft of that paper available to this chapter's authors was written prior to the St. Petersburg Summit of September 5-6, 2013 (but note that in that draft Nolle indicates he intends to produce a revised version after the St. Petersburg Summit to take account of developments).

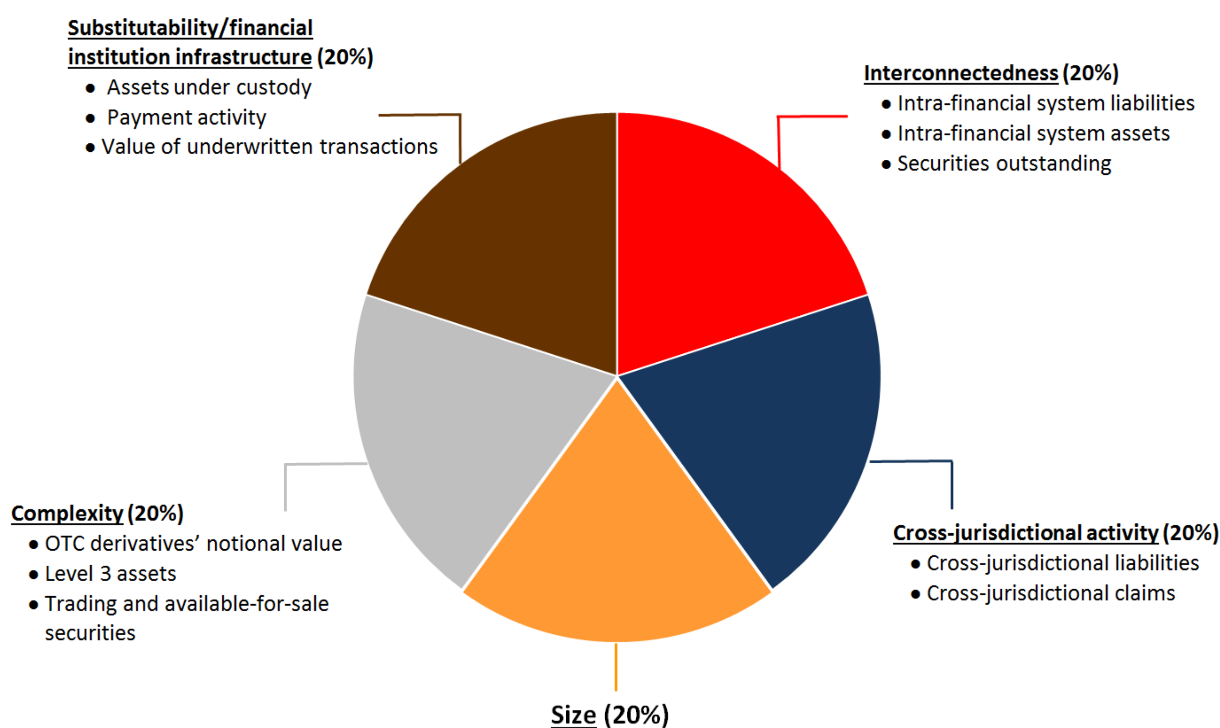
[1] As of August 2013.
[2] FSB, "Reducing the Moral Hazard Posed by Systemically Important Financial Institutions, FSB Recommendations and Time Lines" (20 October 2010).
[3] BCBS, "Global Systemically Important Banks: Assessment Methodology and the Additional Loss Absorbency Requirement" (November 2011).
[4] FSB, "Policy Measures to Address Systemically Important Financial Institutions" (4 November 2011). As explained in this chapter, the first group of financial firms were banking companies. For that reason, although originally called "G-SIFIs," they came to be referred to as "G-SIBs."
[5] FSB, "Update of Group of Global Systemically Important Banks" (G-SIBs) (1 November 2012). See Table A.1 in the Appendix to this chapter for a list of the initial 29 G-SIBs and the 28 G-SIBs designated in the November 2012 update.
[6] IAIS, "Global Systemically Important Insurers: Initial Assessment Methodology" (July 2013).
[7] BCBS, "A Framework for Dealing With Domestic Systemically Important Banks" (November 2012).
[8] BCBS, "Basel III: A Global Regulatory Framework for More Resilient banks and Banking Systems" (December 2010).
[9] FSB, "Progress of Financial Reforms," Letter from the FSB chairman to G-20 ministers and central bank governors (15 April 2013).
[10] See Box A.1 in the Appendix to this chapter for a summary of each of the 12 Key Attributes.
[11] FSB, "Thematic Review on Resolution Regimes," Peer Review Report (11 April 2013).
[12] FSB, "FSB Publishes Peer Review on Resolution Regimes," press release (11 April 2013).
[13] FSB, "Implementing the FSB Key Attributes of Effective Resolution Regimes: How Far Have We Come?" (15 April 2013).
[14] FSB, "Increasing the Intensity and Effectiveness of SIFI Supervision," Progress Report to the G20 ministers and governors (1 November 2012).
[15] FSB, "Thematic Review on Risk Governance" (12 February 2013).
[16] FSB, "FSB Reports to G20 on Progress of Financial Regulatory Reforms," press release (19 April 2013).
[17] FSB, "Global Systemically Important Insurers (G-SIIs) and the Policy Measures that will Apply to Them" (18 July 2013). See Table A.4 in the Appendix to this paper for a list of the nine G-SIIs and a summary of the implementation schedule for G-SII policy.

II. Regulation and supervision of systemically important banks: Cross-country comparisons

II.A. The SIB landscape around the world

As discussed above, using BCBS methodology, the FSB took the lead in identifying banks deemed globally systemically important (G-SIBs). Figure 2 describes the five equally weighted factors used in making the determination. They include size, complexity, cross-jurisdictional activity, interconnectedness, and substitutability/financial institution infrastructure. The subcomponents that underlie each factor are also listed.[38]

Figure 2: Factors used to identify global systemically important banks



Source: BCBS (2013).

Since size is weighted at 20 percent, the list of G-SIBs will not necessarily simply include the biggest banks in the world. This point is made clear in Table 4, which lists the 100 biggest publicly traded banks, ranked by reported total assets as of 2012.[39] These banks are headquartered in only 26 countries and account for 83 percent of all ublicly traded bank assets. At the same time, their aggregate assets are 112 percent of global GDP.

[38] The determination of which banks are classified as G-SIBs requires a substantial amount of data and expert judgment. See BCBS (2013a) for the most recent classification methodology.
[39] We focus on publicly traded banks because data on their operations is readily available.

Among these 100 banks, however, the FSB identified only 27 as G-SIBs in November 2012.[40] The total assets of these G-SIBs account for 55 percent of the total assets of the world's 100 biggest banks. Table 4 also shows that the biggest and ninth-biggest bank, as measured by total assets (Industrial and Commercial Bank of China and China Construction Bank, respectively) have not been designated G-SIBs. More generally, the smallest G-SIB is State Street Corp., which ranks 82nd on the list with $223 billion in total assets. The biggest, HSBC, ranks second with $2.7 trillion in total assets. This illustrates the importance of factors other than asset size in the designation of G-SIBs.

One problem that arises in ranking by total assets is that countries use different accounting standards. Table 4 shows that banks in most countries follow International Financial Reporting Standards (IFRS). However, banks in the United States follow Generally Accepted Accounting Principles (U.S. GAAP). This is important because the two systems may produce divergent measures of total assets.

Table 4: The world's 100 biggest publicly traded banks ranked by reported total assets and total assets when derivatives are valued on a gross, not net (U.S. GAAP), basis (IFRS), 2012. G-SIBs are highlighted.

	Bank	Country	Accounting standard	Total assets ($billions)	Total reported derivative assets on balance sheet ($billions)	Total derivative assets on gross basis ($ billions)	Total assets with derivatives on gross basis ($billions)
1	Industrial and Commercial Bank of China	China	IAS/IFRS	2,789	2.3	-	2,789
2	HSBC	United Kingdom	IAS/IFRS	2,693	357.5	-	2,693
3	Deutsche Bank	Germany	IAS/IFRS	2,655	1013.7	-	2,655
4	BNP Paribas	France	IAS/IFRS	2,517	560.6	-	2,517
5	Crédit Agricole S.A.	France	IAS/IFRS	2,431	626.3	-	2,431
6	Mitsubishi UFJ Financial Group	Japan	JP GAAP	2,410	n.a.	-	2,410
7	JPMorgan Chase	United States	U.S. GAAP	2,359	75.0	1662.4	3,947
8	Barclays	United Kingdom	IAS/IFRS	2,352	740.3	-	2,352
9	China Construction Bank Corp.	China	IAS/IFRS	2,222	2.0	-	2,222
10	Bank of America Corp.	United States	U.S. GAAP	2,210	53.5	1383.5	3,540
11	Agricultural Bank of China	China	IAS/IFRS	2,106	0.8	-	2,106
12	Royal Bank of Scotland Group	United Kingdom	IAS/IFRS	2,071	697.3	-	2,071
13	Bank of China	China	IAS/IFRS	2,016	6.4	-	2,016
14	Citigroup	United States	U.S. GAAP	1,865	54.6	1063.6	2,874
15	Mizuho Financial Group	Japan	JP GAAP	1,841	47.6	-	1,841
16	Sumitomo Mitsui Financial Group	Japan	JP GAAP	1,791	n.a.	-	1,791
17	Banco Santander S.A.	Spain	IAS/IFRS	1,675	159.0	-	1,675
18	Société Générale	France	IAS/IFRS	1,650	314.6	-	1,650
19	ING	Netherlands	IAS/IFRS	1,542	91.2	-	1,542
20	Lloyds Banking Group	United Kingdom	IAS/IFRS	1,459	89.2	-	1,459
21	Wells Fargo	United States	U.S. GAAP	1,423	23.8	85.9	1,485
22	UBS	Switzerland	IAS/IFRS	1,374	456.1	-	1,374
23	UniCredit	Italy	IAS/IFRS	1,223	135.5	-	1,223
24	Credit Suisse Group	Switzerland	IAS/IFRS	1,008	40.5	910.1	1,878
25	Goldman Sachs	United States	U.S. GAAP	939	71.2	839.1	1,707
26	Nordea Bank	Sweden	IAS/IFRS	894	155.8	-	894
27	Intesa Sanpaolo	Italy	IAS/IFRS	889	74.8	-	889
28	Banco Bilbao Vizcaya Argentaria S.A.	Spain	IAS/IFRS	842	71.0	-	842
29	Commerzbank	Germany	IAS/IFRS	839	148.6	-	839
30	Bank of Communications	China	IAS/IFRS	838	1.0	-	838
31	Metlife	United States	U.S. GAAP	837	-0.161	9	846

[40] Group BPCE (Banque Populaire CdE) was also identified as a G-SIB, but is not on the list because it is not publicly traded. See Table A.1 in the Appendix.

	Bank	Country	Accounting standard	Total assets ($billions)	Total reported derivative assets on balance sheet ($billions)	Total derivative assets on gross basis ($ billions)	Total assets with derivatives on gross basis ($billions)
32	Royal Bank of Canada	Canada	CA GAAP	825	91.3	-	825
33	Toronto-Dominion Bank	Canada	CA GAAP	811	60.9	-	811
34	National Australia Bank	Australia	IAS/IFRS	798	46.6	-	798
35	Morgan Stanley	United States	U.S. GAAP	781	36.2	108.8	854
36	Commonwealth Bank of Australia	Australia	IAS/IFRS	732	39.7	-	732
37	Westpac Banking Corp.	Australia	IAS/IFRS	706	37.1	-	706
38	Natixis	France	IAS/IFRS	697	92.2	-	697
39	Australia and New Zealand Banking Group	Australia	IAS/IFRS	672	51.2	-	672
40	Bank of Nova Scotia	Canada	CA GAAP	668	30.3	-	668
41	Standard Chartered	United Kingdom	IAS/IFRS	637	49.5	-	637
42	Danske Bank	Denmark	IAS/IFRS	616	72.3	-	616
43	Banco do Brasil S.A.	Brazil	IAS/IFRS	563	0.7	-	563
44	China Merchants Bank	China	IAS/IFRS	547	0.3	-	547
45	Bank of Montreal	Canada	CA GAAP	526	48.1	-	526
46	Industrial Bank	China	CN GAAP	521	0.5	-	521
47	China Minsheng Banking Corp.	China	IAS/IFRS	515	0.2	-	515
48	Shanghai Pudong Development Bank	China	CN GAAP	505	0.1	-	505
49	Sberbank of Russia	Russia	IAS/IFRS	494	2.4	-	494
50	China CITIC Bank Corp.	China	IAS/IFRS	475	0.7	-	475
51	Dexia	Belgium	IAS/IFRS	471	44.9	-	471
52	Itau Unibanco Holdings	Brazil	IAS/IFRS	467	5.7	-	467
53	Caixa Bank	Spain	IAS/IFRS	460	27.4	-	460
54	Resona Holdings	Japan	JP GAAP	458	n.a.	-	458
55	DnB ASA	Norway	IAS/IFRS	407	17.3	-	407
56	Nomura Holdings	Japan	JP GAAP	403	n.a.	-	403
57	Sumitomo Mitsui Trust Holdings	Japan	JP GAAP	395	n.a.	-	395
58	Canadian Imperial Bank of Commerce	Canada	CA GAAP	394	27.0	-	394
59	State Bank of India	India	IN GAAP	392	n.a.	-	392
60	Banco Bradesco S.A.	Brazil	IAS/IFRS	391	1.6	-	391
61	Skandinaviska Enskilda Banken	Sweden	IAS/IFRS	377	26.2	-	377
62	Bankia S.A.	Spain	IAS/IFRS	373	54.8	-	373
63	Svenska Handelsbanken	Sweden	IAS/IFRS	367	17.9	-	367
64	China Everbright Bank	China	CN GAAP	366	0.3	-	366
65	Bank of New York Mellon Corp.	United States	U.S. GAAP	359	4.3	26.6	381
66	US Bancorp	United States	U.S. GAAP	354	1.4	1.8	354
67	KBC	Belgium	IAS/IFRS	339	17.7	-	339
68	Shinkin Central Bank	Japan	JP GAAP	323	n.a.	-	323
69	Capital One Financial Corp.	United States	U.S. GAAP	313	n.a.	-	313
70	PNC Financial Services Group	United States	U.S. GAAP	305	8.6	-	305
71	Woori Finance Holdings	South Korea	IAS/IFRS	304	3.8	-	304
72	DBS Group Holdings	Singapore	IAS/IFRS	289	14.1	-	289
73	Banca Monte dei Paschi di Siena	Italy	IAS/IFRS	289	17.2	-	289
74	Swedbank	Sweden	IAS/IFRS	284	15.7	-	284
75	Erste Group Bank	Austria	IAS/IFRS	282	17.5	-	282
76	Shinhan Financial Group	South Korea	IAS/IFRS	281	2.0	-	281
77	Hana Financial Group	South Korea	IAS/IFRS	265	3.8	-	265
78	Ping An Bank	China	CN GAAP	258	0.0	-	258
79	VTB Bank	Russia	IAS/IFRS	243	3.1	-	243
80	Oversea-Chinese Banking Corp.	Singapore	IAS/IFRS	242	4.2	-	242
81	Huaxia Bank Co.	China	CN GAAP	239	0.0	-	239
82	State Street Corp.	United States	U.S. GAAP	223	4.6	9.6	228
83	Banco de Sabadell S.A.	Spain	IAS/IFRS	213	8.8	-	213
84	Banco Popular Espanol S.A.	Spain	IAS/IFRS	208	3.6	-	208
85	United Overseas Bank	Singapore	IAS/IFRS	207	4.5	-	207
86	Daiwa Securities Group	Japan	JP GAAP	203	29.2	-	203

	Bank	Country	Accounting standard	Total assets ($billions)	Total reported derivative assets on balance sheet ($billions)	Total derivative assets on gross basis ($ billions)	Total assets with derivatives on gross basis ($billions)
87	Bank of Ireland	Ireland	IAS/IFRS	196	7.7	-	196
88	Cathay Financial Holdings	Taiwan	TW GAAP	187	0.1	-	187
89	BB&T Corp.	United States	U.S. GAAP	184	n.a.	-	184
90	Standard Bank Group	South Africa	IAS/IFRS	182	18.1	-	182
91	Raiffeisen Bank International	Austria	IAS/IFRS	180	10.8	-	180
92	Bank of Beijing	China	CN GAAP	180	0.0	-	180
93	Industrial Bank of Korea	South Korea	IAS/IFRS	179	2.6	-	179
94	National Bank of Canada	Canada	CA GAAP	178	6.7	-	178
95	UBI Banca	Italy	IAS/IFRS	175	3.9	-	175
96	Banco Popolare	Italy	IAS/IFRS	174	8.8	-	174
97	SunTrust Bank	United States	U.S. GAAP	173	1.9	2.6	174
98	Malayan Banking Berhad	Malaysia	MY GAAP	162	0.9	-	162
99	Allied Irish Banks Plc.	Ireland	IAS/IFRS	162	3.7	-	162
100	Macquarie Group	Australia	IAS/IFRS	157	15.3	-	157

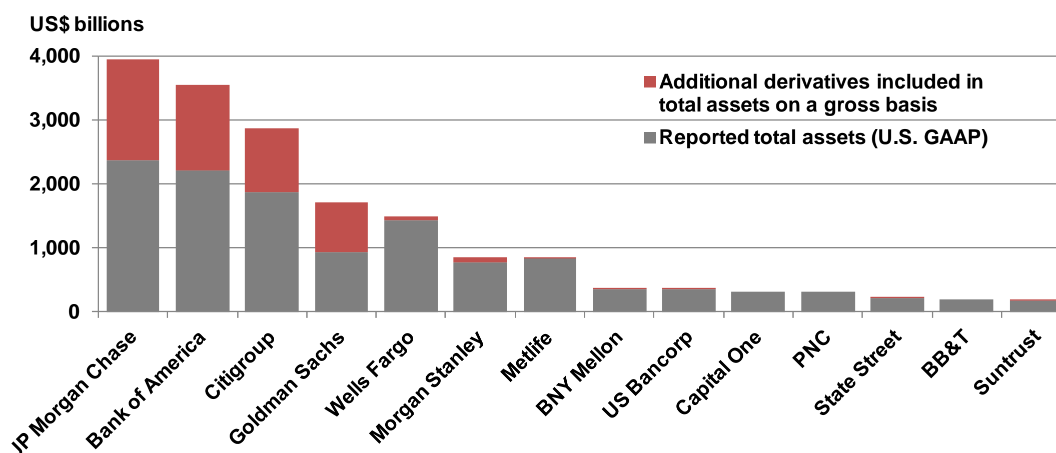
Note: n.a.= not available and "-" means not applicable. IAS denotes International Accounting Standards.
1) Data from Q3 2012 is used for Japanese banks, whose fiscal year ends March 31.
2) Group BPCE was identified as a G-SIB but is not publicly traded.
3) Switzerland allows companies the choice of reporting derivatives on a net or gross basis.
4) BB&T, PNC Financial, and Capital One report derivative assets on a gross basis, unlike other U.S. banks.

In particular, derivative assets are measured on a gross basis under IFRS, but on a net basis under U.S. GAAP.[41] Table 4 shows that if derivatives are measured on a gross basis, total assets for some U.S. banks increase substantially. For example, the assets of JPMorgan Chase increase to $3.9 trillion under IFRS from $2.4 trillion under U.S. GAAP, and it then ranks as the biggest bank in the world. Figure 3 shows the impact of the accounting treatments on total assets for the eight U.S. G-SIBs and six other U.S. banks included among the 100 biggest. Clearly, how derivatives are measured has important implications for the amount of capital banks must hold under the standards set by Basel III.[42]

[41] It is useful to elaborate on the importance of this distinction. The Europe-based International Accounting Standards Board (IASB), for example, allows less balance sheet offsetting than the U.S.-based Financial Accounting Standards Board (FASB). The different requirements result in significant differences between assets presented in accordance with IFRS and those under U.S. GAAP, particularly for entities that are active in derivatives markets (see ISDA, 2012).

[42] Table 4 indicates that some banks present their total assets under more than one accounting standard in their financial reports.

Figure 3: Impact of accounting standards for derivatives on measurement of assets (2012)



Sources: BankScope, Bloomberg, Milken Institute.

There are different ways to assess the importance of giant banks. Two ways are to measure a big bank's total assets against total bank assets in a country and against the country's GDP. The first measures the degree of concentration. The higher the concentration ratio, the greater the performance and stability of the banking sector depends on one or several institutions. A bank or a few banks in a highly concentrated sector may therefore be deemed too big to fail. Table 5 shows that the concentration ratios for individual banks range from 1.1 percent for SunTrust in the United States to 92 percent for ING in the Netherlands. Interestingly, the G-SIBs' ratios are not always the highest among the banks.

The second measure is the size of a bank relative to GDP. The higher the ratio, the greater the country's risk if one or a few big banks were to fail and require a bailout. Table 5 shows that the total asset-to-GDP ratios for individual banks range from 1.1 percent for SunTrust in the United States to 217 percent for UBS in Switzerland. Again, the G-SIBs' ratios are not always at the top of the scale.

Table 5: The world's 100 biggest banks: Size vs. banking system assets and GDP (2012)

	Bank	Country	Total assets ($billions)	Total assets (%country bank assets)	Total assets (%country GDP)	Cumulative assets (% world publicly traded bank assets)	Cumulative assets (% world GDP)
1	Industrial and Commercial Bank of China	China	2,789	21.1	33.9	2.9	3.9
2	HSBC	United Kingdom	2,693	29.1	110.3	5.7	7.6
3	Deutsche Bank	Germany	2,655	71.8	78.1	8.5	11.3
4	BNP Paribas	France	2,517	31.9	96.5	11.1	14.9
5	Crédit Agricole S.A.	France	2,431	30.9	93.2	13.6	18.2
6	Mitsubishi UFJ Financial Group	Japan	2,410	32.4	40.4	16.1	21.6
7	JPMorgan Chase	United States	2,359	15.6	15.0	18.6	24.9
8	Barclays	United Kingdom	2,352	25.4	96.4	21.0	28.2
9	China Construction Bank Corp.	China	2,222	16.8	27.0	23.3	31.3
10	Bank of America Corp.	United States	2,210	14.6	14.1	25.6	34.4

	Bank	Country	Total assets ($billions)	Total assets (%country bank assets)	Total assets (%country GDP)	Cumulative assets (% world publicly traded bank assets)	Cumulative assets (% world GDP)
11	Agricultural Bank of China	China	2,106	15.9	25.6	27.8	37.3
12	Royal Bank of Scotland Group	United Kingdom	2,071	22.3	84.9	30.0	40.2
13	Bank of China	China	2,016	15.2	24.5	32.1	43.0
14	Citigroup	United States	1,865	12.3	11.9	34.0	45.6
15	Mizuho Financial Group	Japan	1,841	24.8	30.9	35.9	48.2
16	Sumitomo Mitsui Financial Group	Japan	1,791	24.1	30.0	37.8	50.7
17	Banco Santander S.A.	Spain	1,675	43.2	123.9	39.5	53.0
18	Société Générale	France	1,650	20.9	63.3	41.2	55.3
19	ING	Netherlands	1,542	92.0	199.4	42.8	57.4
20	Lloyds Banking Group	United Kingdom	1,459	15.7	59.8	44.3	59.5
21	Wells Fargo	United States	1,423	9.4	9.1	45.8	61.5
22	UBS	Switzerland	1,374	50.3	217.2	47.3	63.4
23	UniCredit	Italy	1,223	35.4	60.7	48.5	65.1
24	Credit Suisse Group	Switzerland	1,008	36.9	159.5	49.6	66.5
25	Goldman Sachs	United States	939	6.2	6.0	50.5	67.8
26	Nordea Bank	Sweden	894	46.3	169.8	51.5	69.0
27	Intesa Sanpaolo	Italy	889	25.7	44.1	52.4	70.3
28	Banco Bilbao Vizcaya Argentaria S.A.	Spain	842	21.7	62.2	53.3	71.5
29	Commerzbank	Germany	839	22.7	24.7	54.1	72.6
30	Bank of Communications	China	838	6.3	10.2	55.0	73.8
31	Metlife	United States	837	5.5	5.3	55.9	75.0
32	Royal Bank of Canada	Canada	825	23.1	45.4	56.7	76.1
33	Toronto-Dominion Bank	Canada	811	22.7	44.6	57.6	77.2
34	National Australia Bank	Australia	798	24.5	51.8	58.4	78.4
35	Morgan Stanley	United States	781	5.2	5.0	59.2	79.5
36	Commonwealth Bank of Australia	Australia	732	22.4	47.5	60.0	80.5
37	Westpac Banking Corp.	Australia	706	21.6	45.8	60.7	81.5
38	Natixis	France	697	8.8	26.7	61.5	82.4
39	Australia and New Zealand Banking Group	Australia	672	20.6	43.6	62.2	83.4
40	Bank of Nova Scotia	Canada	668	18.7	36.7	62.8	84.3
41	Standard Chartered	United Kingdom	637	6.9	26.1	63.5	85.2
42	Danske Bank	Denmark	616	83.0	196.4	64.2	86.0
43	Banco do Brasil S.A.	Brazil	563	32.1	23.5	64.7	86.8
44	China Merchants Bank	China	547	4.1	6.6	65.3	87.6
45	Bank of Montreal	Canada	526	14.7	28.9	65.9	88.3
46	Industrial Bank	China	521	3.9	6.3	66.4	89.1
47	China Minsheng Banking Corp.	China	515	3.9	6.3	66.9	89.8
48	Shanghai Pudong Development Bank	China	505	3.8	6.1	67.5	90.5
49	Sberbank of Russia	Russia	494	44.9	24.4	68.0	91.2
50	China CITIC Bank Corp.	China	475	3.6	5.8	68.5	91.8
51	Dexia	Belgium	471	56.6	97.3	69.0	92.5
52	Itau Unibanco Holdings	Brazil	467	26.6	19.5	69.4	93.1
53	Caixa Bank	Spain	460	11.9	34.0	69.9	93.8
54	Resona Holdings	Japan	458	6.2	7.7	70.4	94.4

	Bank	Country	Total assets ($billions)	Total assets (%country bank assets)	Total assets (%country GDP)	Cumulative assets (% world publicly traded bank assets)	Cumulative assets (% world GDP)
55	DnB ASA	Norway	407	66.2	81.3	70.8	95.0
56	Nomura Holdings	Japan	403	5.4	6.8	71.2	95.5
57	Sumitomo Mitsui Trust Holdings	Japan	395	5.3	6.6	71.6	96.1
58	Canadian Imperial Bank of Commerce	Canada	394	11.0	21.6	72.1	96.6
59	State Bank of India	India	392	29.8	21.5	72.5	97.2
60	Banco Bradesco S.A.	Brazil	391	22.3	16.3	72.9	97.7
61	Skandinaviska Enskilda Banken	Sweden	377	19.6	71.7	73.3	98.3
62	Bankia S.A.	Spain	373	9.6	27.6	73.6	98.8
63	Svenska Handelsbanken	Sweden	367	19.0	69.8	74.0	99.3
64	China Everbright Bank	China	366	2.8	4.4	74.4	99.8
65	Bank of New York Mellon Corp.	United States	359	2.4	2.3	74.8	100.3
66	US Bancorp	United States	354	2.3	2.3	75.1	100.8
67	KBC	Belgium	339	40.7	69.9	75.5	101.3
68	Shinkin Central Bank	Japan	323	4.3	5.4	75.8	101.7
69	Capital One Financial Corp.	United States	313	2.1	2.0	76.2	102.2
70	PNC Financial Services Group	United States	305	2.0	1.9	76.5	102.6
71	Woori Finance Holdings	South Korea	304	27.4	26.3	76.8	103.0
72	DBS Group Holdings	Singapore	289	38.7	104.5	77.1	103.4
73	Banca Monte dei Paschi di Siena	Italy	289	8.4	14.3	77.4	103.8
74	Swedbank	Sweden	284	14.7	54.0	77.7	104.2
75	Erste Group Bank	Austria	282	47.1	70.8	78.0	104.6
76	Shinhan Financial Group	South Korea	281	25.3	24.3	78.3	105.0
77	Hana Financial Group	South Korea	265	23.8	22.9	78.6	105.4
78	Ping An Bank	China	258	1.9	3.1	78.8	105.7
79	VTB Bank	Russia	243	22.1	12.0	79.1	106.1
80	Oversea-Chinese Banking Corp.	Singapore	242	32.4	87.6	79.3	106.4
81	Huaxia Bank Co.	China	239	1.8	2.9	79.6	106.7
82	State Street Corp.	United States	223	1.5	1.4	79.8	107.0
83	Banco de Sabadell S.A.	Spain	213	5.5	15.8	80.0	107.3
84	Banco Popular Espanol S.A.	Spain	208	5.4	15.4	80.2	107.6
85	United Overseas Bank	Singapore	207	27.7	74.9	80.5	107.9
86	Daiwa Securities Group	Japan	203	2.7	3.4	80.7	108.2
87	Bank of Ireland	Ireland	196	54.7	92.9	80.9	108.5
88	Cathay Financial Holdings	Taiwan	187	16.0	38.9	81.1	108.7
89	BB&T Corp.	United States	184	1.2	1.2	81.3	109.0
90	Standard Bank Group	South Africa	182	32.7	47.4	81.4	109.2
91	Raiffeisen Bank International	Austria	180	30.0	45.1	81.6	109.5
92	Bank of Beijing	China	180	1.4	2.2	81.8	109.7
93	Industrial Bank of Korea	South Korea	179	16.1	15.5	82.0	110.0
94	National Bank of Canada	Canada	178	5.0	9.8	82.2	110.2
95	UBI Banca	Italy	175	5.1	8.7	82.4	110.5
96	Banco Popolare	Italy	174	5.0	8.6	82.6	110.7
97	SunTrust Bank	United States	173	1.1	1.1	82.7	111.0
98	Malayan Banking Berhad	Malaysia	162	26.3	53.4	82.9	111.2
99	Allied Irish Banks Plc.	Ireland	162	45.3	76.8	83.1	111.4

	Bank	Country	Total assets ($billions)	Total assets (%country bank assets)	Total assets (%country GDP)	Cumulative assets (% world publicly traded bank assets)	Cumulative assets (% world GDP)
100	Macquarie Group	Australia	157	4.8	10.2	83.2	111.6

Note: Total assets are based on countries' accounting policies. Total assets from previous quarter are used if year-end 2012 data is not available.
Sources: BankScope, International Monetary Fund, Milken Institute.

II.B. World Bank survey data

As noted at the outset, countries around the world have taken steps to reform the regulation and supervision of financial institutions in the wake of the global crisis. Until recently, detailed data to illuminate this fact did not exist. Recently, however, the World Bank augmented its periodic survey of banking regulations and supervisory practices by asking authorities about their regulation and supervision of SIBs.[43] The Bank's fourth and most recent survey, completed in 2011, collected that information from 135 countries.

Table 6 highlights new information on treatment of SIBs. Almost half the countries -- 45 percent -- indicate that they now supervise systemic institutions in a different manner from non-systemic ones. Furthermore, the countries employ varied combinations of tools to more closely oversee and/or limit the activities of large/interconnected institutions. Eleven countries restrict their size. Countries that do not supervise systemic institutions differently almost always indicate that they lack the tools necessary for closer oversight. Of course, it is not surprising that smaller countries do not typically make such distinctions, given the relatively small number of institutions within their borders.

[43] For a more comprehensive discussion of the surveys and how they may be used to assess the impact of regulation and supervision on bank performance and stability, see Barth, Caprio, and Levine (2013) and the references therein.

Table 6: Regulation of SIBs, by country

Country	Do you supervise systemic institutions in a different way from non-systemic ones?	If yes, do you have tools to more closely oversee and/or limit the activities of large/interconnected institutions?								
		Additional capital requirements	Additional liquidity requirements	Asset/risk diversification requirements	Restrictions/ limits on activities	Restrictions/ limits on size of institution	Additional corporate taxes for large institutions	Closer or more frequent supervision	Restrictions on legal structure	Other
Argentina	Yes	No	No	No	No	No	No	Yes	No	No
Australia	Yes	No	No	No	No	No	No	Yes	No	No
Brazil	Yes	No	No	No	No	No	No	Yes	No	Yes
Canada	No	---	---	---	---	---	---	---	---	---
China	Yes	Yes	Yes	Yes	---	---	---	Yes	---	---
France	Yes	No	No	No	No	No	Yes	Yes	No	No
Germany	---	---	---	---	---	---	---	---	---	---
India	Yes	No	No	No	No	No	No	No	No	No
Indonesia	Yes	No	No	No	No	No	No	Yes	No	No
Italy	Yes	Yes	No	Yes	Yes	No	No	Yes	No	---
Japan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	Yes	No	No	Yes	No	No	No	No	No	Yes
Russia	Yes	No	No	No	No	No	No	Yes	No	No
Saudi Arabia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
South Africa	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
South Korea	No	---	---	---	---	---	---	---	---	---
Turkey	No	---	---	---	---	---	---	---	---	---
United Kingdom	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	---
United States	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes
European Union total	Yes: 15 No: 9 ---: 1 n.a.: 2	Yes: 6 No: 9 ---: 10 n.a.: 2	Yes: 5 No: 10 ---: 10 n.a.: 2	Yes: 4 No: 11 ---: 10 n.a.: 2	Yes: 5 No: 9 ---: 11 n.a.: 2	Yes: 3 No: 11 ---: 11 n.a.: 2	Yes: 2 No: 13 ---: 10 n.a.: 2	Yes: 15 No: 0 ---: 10 n.a.: 2	Yes: 3 No: 12 ---: 10 n.a.: 2	Yes: 3 No: 8 ---: 14 n.a.: 2
Rest of world	Yes: 36 No: 55 ---: 6	Yes: 15 No: 21 ---: 61	Yes: 10 No: 26 ---: 61	Yes: 12 No: 24 ---: 61	Yes: 18 No: 20 ---: 59	Yes: 7 No: 28 ---: 62	Yes: 0 No: 35 ---: 62	Yes: 35 No: 5 ---: 57	Yes: 10 No: 26 ---: 61	Yes: 4 No: 25 ---: 68

Note: Japan, Saudi Arabia, Czech Republic, and Sweden did not complete this survey. “---” indicates no answer.
Sources: World Bank Survey IV; Barth, Caprio, and Levine (2013).

Many countries have established specialized departments within their regulatory agencies to deal with financial stability and systemic supervision. Table 7 shows that among the 135 countries surveyed, 61 percent have established such a department. In addition, some have indicated the factors they consider in assessing systemic risk, as shown in Table 7. Nearly every country considers capital ratios important in assessing systemic risk.

Table 7: Factors for assessing SIB risk, by country

Country	Is there a specialized department in your agency dealing with financial stability and systemic supervision?	Which factors do you consider in assessing systemic risk?											
		Bank capital ratios	Bank leverage ratios	Bank profitability ratios	Bank liquidity ratios	Growth in bank credit	Sectoral composition of bank loan portfolios	Bank FX position	Bank non-performing loan ratios	Bank provisioning ratios	Stock market prices	Housing prices	Other
Argentina	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
Australia	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brazil	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Canada	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
China	---	---	---	---	---	---	---	---	---	---	---	---	---
France	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
Germany	---	---	---	---	---	---	---	---	---	---	---	---	---
India	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Indonesia	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
Italy	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Japan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Russia	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Saudi Arabia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
South Africa	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes
South Korea	No	No	No	No	No	No	No	No	No	No	No	No	No
Turkey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
United States	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
European Union Total	Yes: 17 No: 7 ---: 1 n.a.: 2	Yes: 22 No: 2 ---: 1 n.a.: 2	Yes: 16 No: 8 ---: 1 n.a.: 2	Yes: 19 No: 5 ---: 1 n.a.: 2	Yes: 20 No: 4 ---: 1 n.a.: 2	Yes: 20 No: 4 ---: 1 n.a.: 2	Yes: 19 No: 5 ---: 1 n.a.: 2	Yes: 15 No: 9 ---: 1 n.a.: 2	Yes: 20 No: 4 ---: 1 n.a.: 2	Yes: 20 No: 4 ---: 1 n.a.: 2	Yes: 13 No: 11 ---: 1 n.a.: 2	Yes: 16 No: 8 ---: 1 n.a.: 2	Yes: 5 No: 19 ---: 1 n.a.: 2
Rest of the world	Yes: 56 No: 33 ---: 8	Yes: 73 No: 20 ---: 4	Yes: 53 No: 40 ---: 4	Yes: 59 No: 34 ---: 4	Yes: 68 No: 25 ---: 4	Yes: 66 No: 27 ---: 4	Yes: 68 No: 25 ---: 4	Yes: 56 No: 37 ---: 4	Yes: 63 No: 30 ---: 4	Yes: 57 No: 36 ---: 4	Yes: 27 No: 66 ---: 4	Yes: 28 No: 65 ---: 4	Yes: 23 No: 70 ---: 4

Note: Japan, Saudi Arabia, Czech Republic, and Sweden did not complete this survey. “---”indicates no answer for this question.
Sources: World Bank Survey IV; Barth, Caprio, and Levine (2013).

II.C. Capital requirements: **Major trends**

It is widely believed that a key contributing factor to the global financial crisis was that many banks held too little capital relative to the riskiness of their assets, on and off their balance sheets. To address this issue, the Basel III capital accord defines more stringent standards. Table 8 lists them and shows the schedule for their full implementation by 2019.

One feature that should be emphasized is the new leverage ratio, which is the proportion of equity to non-risk based assets. The other ratios are based on equity to risk-based assets. Of course, not all countries have agreed to adopt such a leverage ratio. Most, however, have indicated they will adopt risk-based capital ratios. Another feature of the new capital standards is the call for a capital surcharge on G-SIBs.

Table 8: Basel III new capital standards

	2013	2014	2015	2016	2017	2018	**2019**
Leverage ratio[1]	3% parallel run Jan. 2013-Jan. 2017 Public disclosure starts Jan. 2015				Migration to pillar 1		
Minimum common equity capital ratio	3.5%	4%	4.5%				**4.5%**
Capital conservation buffer				0.625%	1.25%	1.875%	**2.5%**
Minimum common equity plus capital conservation buffer	3.5%	4%	4.5%	5.125%	5.75%	6.375%	**7%**
Phase-in of deduction from CET1	-	20%	40%	60%	80%	100%	**100%**
Minimum Tier 1 capital	4.5%	5.5%					**6%**
Minimum total capital	8%	8%					**8%**
Minimum total capital plus conservation buffer	8%	8%	8%	8.625%	9.25%	9.875%	**10.5%**
Countercyclical buffer (discretionary)[2]	Up to 2.5%						
Surcharge on global SIBs	-	-	-	1-2.5% (in theory: 0-3.5%)			

Notes: 1. The Basel committee will continue to test a minimum requirement of 3% for the leverage ratio during the parallel run period (1/1/2013 to 1/1/2017). Any adjustments to the definition and calibration of the leverage ratio will be made by 2017, with a view to migrating to a Pillar 1 treatment on 1/1/2018 based on review and calibration.
2. Applies to “Advanced Approaches Banking Organizations.” The countercyclical capital buffer in the U.S. would initially be set to zero, but it could increase if the agencies determine that there is excessive credit in the markets, possibly leading to widespread market failures.
Sources: Bank for International Settlements; Barth, Caprio, and Levine (2012); Milken Institute.

Table 9 provides information on the composition of the balance sheets of the world’s 100 biggest banks as well as three capital ratios. It is clear that these banks, both G-SIBs and non-G-SIBs, have varied business models and different capital ratios.

Table 9: The world's 100 biggest banks: Assets, liabilities, and capital ratios (2012)

				Assets (% total assets)				Liabilities (% total assets)					Capital ratios (% total assets)		
	Bank	Country	Total assets ($billions)	Net loans	Interbank lending	Securities	Other assets	Deposits	Money market and short-term borrowing	Long-term borrowing	Derivatives and trading	Other liabilities	Equity/ total assets	Tangible common equity/ tangible assets	Market cap/total assets
1	Industrial and Commercial Bank of China	China	2,789	48.9	24.4	23.5	3.2	84.8	3.0	1.3	1.9	2.5	6.4	6.1	2.2
2	HSBC	United Kingdom	2,693	37.1	5.9	46.9	10.2	54.0	2.7	5.7	24.6	5.7	6.5	5.2	7.0
3	Deutsche Bank	Germany	2,655	19.7	5.9	65.3	9.0	28.7	9.5	8.5	41.2	8.8	2.7	1.9	1.5
4	BNP Paribas	France	2,517	32.9	1.9	52.1	13.0	33.4	17.1	6.4	24.9	13.1	4.5	3.7	2.8
5	Crédit Agricole S.A.	France	2,431	17.9	20.9	52.6	8.6	35.0	3.8	5.5	33.4	19.3	2.5	1.5	0.8
6	Mitsubishi UFJ Financial Group	Japan	2,410	40.5	0.3	49.5	9.8	59.9	16.7	7.4	6.8	3.3	5.8	5.3	3.5
7	JPMorgan Chase	United States	2,359	30.2	5.2	52.4	12.2	50.6	13.7	10.1	5.6	11.0	8.3	5.9	7.1
8	Barclays	United Kingdom	2,352	28.6	2.8	61.3	7.4	31.2	20.3	10.4	34.0	-0.1	3.8	3.2	2.2
9	China Construction Bank Corp.	China	2,222	52.3	24.5	20.6	2.6	88.2	1.6	1.2	0.3	1.9	6.8	6.5	8.7
10	Bank of America Corp.	United States	2,210	40.9	0.8	38.3	20.0	50.0	14.7	12.1	5.4	6.7	9.9	5.8	5.7
11	Agricultural Bank of China	China	2,106	46.5	28.8	21.6	3.1	87.9	1.5	1.1	1.2	2.5	5.7	5.1	0.7
12	Royal Bank of Scotland Group	United Kingdom	2,071	32.8	2.2	54.8	10.2	37.4	11.6	7.4	35.6	2.3	5.0	3.8	1.5
13	Bank of China	China	2,016	52.9	24.3	17.8	4.9	84.6	3.5	1.5	0.3	3.0	6.8	6.6	1.9
14	Citigroup	United States	1,865	33.8	5.5	41.4	19.3	49.9	14.1	12.3	6.2	6.7	10.1	7.0	6.2
15	Mizuho Financial Group	Japan	1,841	39.4	0.3	50.8	9.5	52.2	26.7	7.4	7.0	2.3	4.2	3.9	2.8
16	Sumitomo Mitsui Financial Group	Japan	1,791	42.8	2.9	34.8	19.4	60.5	9.0	6.9	3.9	14.8	5.0	4.8	2.6
17	Banco Santander S.A.	Spain	1,675	55.2	3.8	25.4	15.6	49.8	12.7	16.2	10.4	3.9	6.6	3.2	5.1
18	Société Générale	France	1,650	28.5	3.4	55.4	12.7	31.9	9.9	11.4	29.1	13.3	3.8	2.9	1.8
19	ING	Netherlands	1,542	48.2	3.3	28.7	19.7	42.6	5.4	8.0	9.8	28.5	4.7	4.4	2.3
20	Lloyds Banking Group	United Kingdom	1,459	55.9	3.2	12.3	28.5	47.3	7.0	18.3	9.2	13.4	4.8	3.6	3.6
21	Wells Fargo	United States	1,423	58.3	7.2	25.9	8.6	70.5	5.1	7.5	0.8	4.6	10.3	7.2	12.6
22	UBS	Switzerland	1,374	22.2	1.7	67.8	8.3	31.4	16.7	8.3	34.1	5.5	3.6	2.7	4.3

23	UniCredit	Italy	1,223	59.0	5.2	25.5	10.3	50.1	6.7	18.1	13.0	4.5	7.2	5.6	2.3
24	Credit Suisse Group	Switzerland	1,008	23.5	2.9	51.6	21.9	36.7	19.6	15.3	10.0	12.9	4.2	3.1	3.2
25	Goldman Sachs	United States	939	0.0	5.3	73.1	21.6	0.0	35.4	17.8	13.5	25.2	7.4	6.9	6.4
26	Nordea Bank	Sweden	894	47.3	1.5	35.4	15.8	37.8	11.9	16.2	17.1	12.5	4.1	3.6	4.3
27	Intesa Sanpaolo	Italy	889	55.9	4.2	31.8	8.1	42.0	1.2	27.4	9.6	12.0	7.5	5.4	3.0
28	Banco Bilbao Vizcaya Argentaria S.A.	Spain	842	55.3	3.1	28.7	12.8	49.7	14.6	13.3	9.2	5.8	6.9	4.9	5.9
29	Commerzbank	Germany	839	38.5	5.1	51.9	4.6	50.4	11.6	11.6	20.3	1.6	3.9	3.2	1.3
30	Bank of Communications	China	838	54.6	25.0	16.8	3.6	84.2	5.0	1.3	0.2	2.1	7.2	7.0	3.1
31	Metlife	United States	837	9.7	0.9	49.7	39.7	0.8	3.7	3.1	0.0	85.0	7.4	6.3	4.6
32	Royal Bank of Canada	Canada	825	45.8	1.2	44.3	8.6	47.8	12.7	14.7	11.7	7.4	5.0	3.8	10.0
33	Toronto-Dominion Bank	Canada	811	50.4	2.7	41.3	5.6	60.1	8.9	4.6	15.9	4.1	5.6	3.9	9.2
34	National Australia Bank	Australia	798	64.8	6.2	16.5	12.4	48.2	11.5	16.5	6.7	11.1	5.1	4.2	7.7
35	Morgan Stanley	United States	781	3.7	7.3	74.6	14.3	0.0	38.9	17.9	15.4	18.3	8.7	7.5	4.8
36	Commonwealth Bank of Australia	Australia	732	74.5	1.5	16.2	7.7	55.9	13.9	14.2	5.8	3.7	5.7	4.3	11.8
37	Westpac Banking Corp.	Australia	706	76.2	1.5	15.9	6.4	52.6	11.4	18.4	7.2	2.9	6.8	5.1	11.3
38	Natixis	France	697	18.8	10.4	56.0	14.8	31.3	19.7	6.9	24.3	13.9	3.6	1.1	1.5
39	Australia and New Zealand Banking Group	Australia	672	66.6	1.6	18.8	13.0	55.3	11.3	11.1	8.2	6.9	6.3	5.1	10.5
40	Bank of Nova Scotia	Canada	668	54.6	7.4	30.5	7.5	69.4	11.3	1.5	5.3	6.1	5.5	4.2	9.6
41	Standard Chartered	United Kingdom	637	44.6	10.7	27.8	16.9	67.1	0.0	12.1	8.1	4.9	7.0	5.8	9.4
42	Danske Bank	Denmark	616	54.4	3.3	28.9	13.4	29.5	10.3	28.1	15.3	11.6	4.0	3.4	2.8
43	Banco do Brasil S.A.	Brazil	563	43.8	9.8	32.7	13.7	41.0	24.5	12.6	0.3	15.6	5.7	4.2	6.4
44	China Merchants Bank	China	547	54.2	27.6	15.1	3.0	81.2	8.2	1.9	0.3	1.8	5.8	5.4	1.6
45	Bank of Montreal	Canada	526	47.3	1.2	42.0	9.5	61.6	12.0	0.8	9.3	10.5	5.3	4.0	7.3
46	Industrial Bank	China	521	36.7	47.5	12.2	3.6	82.6	7.8	1.9	0.1	1.5	5.2	5.1	9.7
47	China Minsheng Banking Corp.	China	515	41.7	45.1	7.5	5.6	82.2	7.6	2.3	0.0	1.6	5.2	4.8	5.4
48	Shanghai Pudong Development Bank	China	505	47.5	34.2	15.5	2.8	84.5	3.7	2.2	0.1	3.1	5.7	5.5	5.9
49	Sberbank of Russia	Russia	494	70.0	0.8	13.6	15.6	71.8	8.8	4.6	0.3	1.7	10.8	10.4	13.4
50	China CITIC Bank Corp.	China	475	54.5	29.4	12.3	3.8	87.9	1.3	1.6	0.1	1.4	6.8	6.6	1.8
51	Dexia	Belgium	471	42.0	13.1	20.4	24.5	21.4	6.2	30.9	17.9	22.7	0.9	0.9	0.0
52	Itau Unibanco Holdings	Brazil	467	35.8	2.5	43.7	18.1	25.5	28.0	17.7	1.2	19.9	8.0	5.0	8.0
53	Caixa Bank	Spain	460	61.3	1.4	28.0	9.3	44.5	4.9	26.3	6.1	11.3	5.9	4.3	3.3
54	Resona Holdings	Japan	458	61.0	0.4	26.4	12.2	82.8	4.2	3.2	0.8	2.8	3.1	2.7	2.9

55	DnB ASA	Norway	407	57.2	1.6	23.3	17.8	46.8	10.8	21.2	2.8	12.4	5.6	5.4	5.1
56	Nomura Holdings	Japan	403	4.1	0.0	86.0	9.9	2.8	42.6	20.0	22.4	6.1	6.1	6.1	5.8
57	Sumitomo Mitsui Trust Holdings	Japan	395	61.6	1.4	21.2	15.8	62.5	21.9	5.8	0.6	2.9	6.0	5.3	5.0
58	Canadian Imperial Bank of Commerce	Canada	394	61.6	0.5	31.1	6.7	63.0	5.4	14.6	6.9	5.4	3.9	3.3	8.1
59	State Bank of India	India	392	64.7	2.6	24.1	8.6	75.6	9.5	0.0	0.0	9.0	6.0	6.1	6.5
60	Banco Bradesco S.A.	Brazil	391	33.7	3.0	46.9	16.3	54.0	3.8	7.0	0.5	26.0	8.9	6.3	8.4
61	Skandinaviska Enskilda Banken	Sweden	377	47.3	4.6	24.7	23.4	40.9	9.4	19.3	9.7	15.8	4.5	3.8	4.9
62	Bankia S.A.	Spain	373	47.5	2.5	40.4	9.5	38.0	13.5	30.5	12.9	3.5	-2.1	-5.1	0.3
63	Svenska Handelsbanken	Sweden	367	69.0	1.7	15.1	14.3	35.7	17.7	31.6	5.1	5.0	4.3	4.1	6.0
64	China Everbright Bank	China	366	43.4	30.1	20.9	5.6	85.0	4.2	2.3	0.1	2.5	5.0	4.8	2.5
65	Bank of New York Mellon Corp.	United States	359	12.9	37.3	36.3	13.4	68.6	7.0	5.0	5.1	3.7	10.1	4.0	8.4
66	US Bancorp	United States	354	64.1	0.0	21.1	14.8	70.4	7.4	7.1	0.0	3.6	10.0	6.9	17.0
67	KBC	Belgium	339	49.8	4.4	38.1	7.7	55.5	3.4	7.6	16.5	10.7	4.8	3.8	4.0
68	Shinkin Central Bank	Japan	323	17.9	2.1	68.9	11.1	74.3	5.4	14.3	0.5	1.2	4.1	4.1	0.4
69	Capital One Financial Corp.	United States	313	64.2	2.4	20.4	12.9	67.9	6.8	8.0	0.0	3.2	12.9	8.0	10.8
70	PNC Financial Services Group	United States	305	60.8	1.3	24.9	13.0	69.9	3.9	9.4	0.0	3.0	12.5	9.0	10.1
71	Woori Finance Holdings	South Korea	304	69.4	1.7	21.3	7.7	62.3	10.3	8.6	3.4	8.4	6.9	6.7	2.9
72	DBS Group Holdings	Singapore	289	59.5	8.1	22.9	9.4	75.1	3.4	3.0	5.5	2.6	9.0	7.7	10.3
73	Banca Monte dei Paschi di Siena	Italy	289	64.9	4.8	23.2	7.1	48.3	8.7	23.9	12.4	2.8	2.9	2.3	1.2
74	Swedbank	Sweden	284	64.5	3.8	17.0	14.8	36.3	12.6	31.0	6.0	8.1	5.6	4.9	6.5
75	Erste Group Bank	Austria	282	58.1	4.2	28.4	9.2	67.7	1.2	14.3	5.9	2.5	7.6	6.3	4.4
76	Shinhan Financial Group	South Korea	281	64.9	1.5	22.3	11.3	56.1	6.7	12.9	2.7	12.0	9.3	8.0	6.1
77	Hana Financial Group	South Korea	265	59.8	1.1	24.7	14.3	63.6	7.0	11.4	2.9	7.9	7.1	6.5	3.0
78	Ping An Bank	China	258	29.8	22.6	15.5	32.0	58.9	4.3	0.6	0.0	0.8	4.4	6.2	4.2
79	VTB Bank	Russia	243	63.0	4.0	15.7	17.3	59.5	12.7	15.0	1.1	2.0	9.5	7.3	7.6
80	Oversea-Chinese Banking Corp.	Singapore	242	48.0	10.4	14.8	26.8	63.7	1.6	2.9	2.1	19.9	8.0	6.8	11.4
81	Huaxia Bank Co.	China	239	46.6	38.7	12.2	2.5	84.2	7.9	0.3	0.0	1.4	5.0	4.8	3.4
82	State Street Corp.	United States	223	5.5	22.8	59.6	12.1	73.8	5.6	2.8	0.0	7.7	9.2	5.5	9.8
83	Banco de Sabadell S.A.	Spain	213	65.0	2.3	21.0	11.7	70.8	1.1	16.4	1.5	4.4	5.2	1.6	3.6
84	Banco Popular Espanol S.A.	Spain	208	69.0	3.0	16.9	11.1	61.7	13.6	13.8	2.2	2.4	5.9	2.3	3.1
85	United Overseas Bank	Singapore	207	60.4	4.7	17.6	17.3	79.2	3.2	3.7	2.2	1.7	9.1	7.5	12.3

86	Daiwa Securities Group	Japan	203	1.9	0.0	84.6	13.4	9.4	47.6	9.7	26.1	1.6	5.7	5.3	6.0
87	Bank of Ireland	Ireland	196	62.5	3.3	23.4	10.9	52.2	13.0	13.2	3.6	12.0	4.6	3.3	2.3
88	Cathay Financial Holdings	Taiwan	187	28.0	1.9	42.9	27.2	27.9	0.9	1.7	0.2	64.8	4.6	4.1	6.3
89	BB&T Corp.	United States	184	63.3	0.9	21.4	14.4	72.4	1.6	10.4	0.0	4.1	10.4	6.6	11.1
90	Standard Bank Group	South Africa	182	52.4	0.0	39.8	7.9	59.3	0.0	2.0	14.7	15.3	8.1	7.2	12.3
91	Raiffeisen Bank International	Austria	180	57.2	16.3	18.1	8.5	57.4	13.4	12.3	6.8	1.6	6.2	4.9	4.5
92	Bank of Beijing	China	180	42.8	32.5	22.2	2.5	84.5	6.2	0.9	0.0	1.1	6.3	6.2	6.0
93	Industrial Bank of Korea	Korea, Rep.	179	72.5	1.6	21.4	4.5	40.9	11.6	36.7	1.9	4.7	6.7	6.4	3.4
94	National Bank of Canada	Canada	178	46.5	1.8	43.7	8.0	52.4	21.2	1.4	3.1	17.2	4.2	3.2	7.0
95	UBI Banca	Italy	175	69.7	3.0	19.4	7.9	48.5	3.5	34.0	3.0	2.9	8.0	5.9	2.4
96	Banco Popolare	Italy	174	69.3	2.8	19.4	8.4	43.4	7.5	33.8	4.8	3.2	6.8	5.1	1.7
97	SunTrust Bank	United States	173	70.7	0.0	16.8	12.5	76.3	3.2	5.4	0.7	2.4	11.7	7.8	8.8
98	Malayan Banking Berhad	Malaysia	162	62.9	2.4	19.9	14.8	76.9	0.0	4.9	0.5	7.5	8.9	7.6	15.7
99	Allied Irish Banks plc	Ireland	162	59.5	2.3	30.0	8.2	52.4	22.8	9.7	2.7	3.3	9.1	6.0	21.1
100	Macquarie Group	Australia	157	33.5	0.3	42.1	24.1	32.3	7.0	28.1	10.8	13.5	7.9	6.7	8.4

Note: Deposits includes customer deposits (current, savings, and term) and deposits from banks. Data for certain compositions is assumed to be zero if the relevant data is not available.

Sources: BankScope and authors' calculation.

II.D. Resolution regimes: Major trends

Since the financial crisis, regulators in many countries have focused more intently on resolution regimes for insolvent banks. Table 10 examines whether banks and nonfinancial firms are treated differently in the event of insolvency, and whether banks are treated differently from bank holding companies. In addition, the resolution authority and its powers are identified.

As shown, 11 of the 19 G-20 countries have a bank insolvency framework that is distinct from that of nonfinancial firms, and 10 have a different insolvency framework for bank holding companies. In terms of resolution powers and the agencies possessing them, the majority of countries grant the most powers to bank supervisors. In many countries, however, the courts also seem to play an important role with respect to declaring insolvency. Furthermore, in most G-20 countries shareholders can appeal a resolution decision by the banking supervisor in court.

Table 10: Insolvency frameworks

Country	Is there a bank insolvency framework distinct from that of non-financial firms?	Is the insolvency framework the same for banks and bank holding companies?	Which authority has the powers to perform the following resolution activities? (BS = Bank Supervisor, C = Court, DIA = Deposit Insurance Agency, BR/AMA = Bank Restructuring or Asset Management Agency)					Can shareholders appeal a bank supervisor's resolution decision in court?
			A. Declare insolvency	B. Supersede shareholders' rights	C. Remove and replace bank senior management and directors	D. Undertake bank resolution mechanisms	E. Appoint and oversee a bank liquidator/ receiver	
Argentina	Yes	No	BS	BS	BS	BS	C	Yes
Australia	No	Yes	BS and bank	C	BS	BS	BS	Yes
Brazil	Yes	No	BS	BS	BS	BS	BS	Yes
Canada	Yes	No	C	BS	BS	BS	C	Yes
China	No	Yes	C	BS	BS	C	C	Yes
France	Yes	No	C	C	BS and C	BS and C	BS and C	No
Germany	No	Yes	C	BS	BS	BS	C	Yes
India	Yes	No	C	C	BS	BS	C	Yes
Indonesia	Yes	Yes	BS	DIA	BS	BS	DIA	Yes
Italy	Yes	No	C	BS	BS	BS	BS	Yes
Japan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	No	Yes	DIA	DIA	DIA	DIA	DIA	No
Russia	Yes	No	C	BS	BS	BS	BS, C, and Creditors	Yes
Saudi Arabia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
South Africa	No	Yes	C	C	BS	BS	Minister of Finance	Yes
South Korea	No	Yes	C	C	BS	C and DIA	BS	Yes
Turkey	Yes	No	BS	DIA	---	DIA	DIA	Yes
United Kingdom	Yes	No	---	---	---	---	---	No
United States	Yes	No	BS	DIA	BS	BS	BS	Yes
			Is court approval required for the above bank resolution activities?					
European Union total	Yes: 15 No: 10 ---: 2 n.a.: 2	Yes: 12 No: 13 ---: 0 n.a.: 2	Yes: 19 No: 6 ---: 0 n.a.: 2	Yes: 9 No: 15 ---: 1 n.a.: 2	Yes: 0 No: 24 ---: 1 n.a.: 2	Yes: 4 No: 20 ---: 1 n.a.: 2	Yes: 16 No: 8 ---: 1 n.a.: 2	Yes: 22 No: 3 ---: 0 n.a.: 2
Rest of world	Yes: 64 No: 28 ---: 5	Yes: 55 No: 31 ---: 11	Yes: 47 No: 49 ---: 1	Yes: 34 No: 59 ---: 4	Yes: 6 No: 88 ---: 3	Yes: 9 No: 83 ---: 5	Yes: 43 No: 50 ---: 4	Yes: 86 No: 10 ---: 1

Note: Japan, Saudi Arabia, Czech Republic, and Sweden did not complete this survey. "---" indicates no answer for this question.
Sources: World Bank Survey IV; Barth, Caprio, and Levine (2013).

Table 11 shows that most G-20 countries do indeed provide mechanisms to resolve problem banks prior to their closure and liquidation, including open assistance and government intervention in the form of conservatorship or nationalization. Most G-20 countries have not introduced separate insolvency frameworks, but several have nevertheless implemented coordination arrangements among domestic authorities.

Table 11: Resolving problem banks prior to closure and liquidation

Country	Which mechanisms are provided in existing legislation to resolve a problem bank prior to its closure and liquidation?				Have you introduced significant changes to the bank resolution framework in your country as a result of the global financial crisis?	
	A. Open bank assistance	B. Purchase and assumption transaction (with or without government support)	C. Government intervention (e.g., via conservatorship or nationalization)	D. Bridge bank	A. Introduced a separate bank insolvency framework	B. Implemented coordination arrangements among domestic authorities
Argentina	No	Yes	No	Yes	No	No
Australia	No	Yes	No	No	No	Yes
Brazil	Yes	Yes	No	No	No	No
Canada	No	Yes	No	Yes	No	No
China	Yes	Yes	Yes	No	Yes	Yes
France	Yes	Yes	Yes	No	No	Yes
Germany	No	Yes	No	Yes	No	No
India	No	No	Yes	No	No	No
Indonesia	Yes	Yes	Yes	Yes	No	Yes
Italy	Yes	Yes	No	No	No	Yes
Japan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	Yes	Yes	Yes	Yes	Yes	No
Russia	Yes	Yes	Yes	No	No	No
Saudi Arabia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
South Africa	No	Yes	No	No	No	No
South Korea	Yes	Yes	Yes	No	No	Yes
Turkey	No	Yes	Yes	No	No	Yes
United Kingdom	No	Yes	Yes	Yes	Yes	Yes
United States	Yes	Yes	Yes	Yes	No	No
European Union total	Yes: 15 No: 9 ---: 1 n.a.: 2	Yes: 21 No: 4 ---: 0 n.a.: 2	Yes: 17 No: 8 ---: 0 n.a.: 2	Yes: 9 No: 16 ---: 0 n.a.: 2	Yes: 1 No: 24 n.a.: 2	Yes: 15 No: 18 n.a.: 2
Rest of the world	Yes: 61 No: 31 ---: 5	Yes: 57 No: 32 ---: 8	Yes: 50 No: 38 ---: 9	Yes: 33 No: 52 ---: 12	Yes: 5 No: 92	Yes: 16 No: 81

Note: Japan, Saudi Arabia, Czech Republic, and Sweden did not complete this survey. "---"indicates no answer for this question.
Sources: World Bank Survey IV; Barth, Caprio, and Levine (2013)

III. Cross-border legal issues

The challenges of greater coordination with regard to the supervision and regulation of G-SIBs are considerable. Unlike other traditional areas of international economic coordination, financial regulation is not carried out through treaties, but instead via nonbinding protocols and accords. These "soft law" arrangements, which espouse best practices and codes of conduct, include memoranda of understanding in which financial authorities commit to sharing information with one another where they conduct cross-border investigations.

Among the most prominent of such agreements is the Basel III accord. As we discussed above, the implementation process for Basel III's capital charges, liquidity requirements, and leverage ratios is well underway. Although countries continue to debate technical details and schedules, all agree that buffering the reserves of banks *ex ante*, and limiting the amount of debt and low-quality reserve securities, will greatly reduce the likelihood of failure at both the firm and system levels.

Meanwhile, efforts to address the too-big-to-fail issue have been facilitated through not only the Basel Committee, but the FSB. Both have worked toward better identifying G-SIBs and G-SIFIs through the development of standards and more prescriptive methodologies. These advances have also led to more proactive regulatory coordination in the face of cross-border systemic risks. In November 2011, the FSB promulgated its "Key Attributes of Effective Resolution Regimes for Financial Institutions" (the "Key Attributes") as a new international standard for resolution regimes.[44] These attributes were drafted with G-SIFIs in mind and include a range of intensified coordination efforts for national financial regulatory authorities. Included in the package of reforms are (1) requirements for cross-border crisis management groups (CMGs), in which key regulators and financial authorities are to meet and share information on systemically important activities within their jurisdictions, (2) institution-specific cross-border cooperation agreements (COAGs) aimed at managing the risks of particular banks, (3) recovery and resolution plans (RRPs), and (4) resolvability assessments for all G-SIFIs.[45]

None of these efforts constitute binding international law, however. They do not create obligations for governments in the way a peace accord or an international humanitarian pact might. As such, there is no ratification process that often apply to international treaties on trade and investment. Instead, market regulators employ largely administrative processes to implement standards at home.

There is good reason for this departure from traditional international law. Formal agreements are often flawed instruments of financial coordination. Treaty-making often involves months—if not years—of negotiation between heads of state or their delegations and local representatives.[46] And once created, they are hard to change, increasing the risk that rules generated through treaties fall out of step with practice.[47]

[44]Summarized in Box A.1 in this paper's Appendix; see also www.financialstabilityboard.org/publications/r_121031aa.pdf
[45] www.financialstabilityboard.org/publications/r_121031aa.pdf
[46] Consequently, hard law tends to be popular in areas like trade, where the objects of regulation are less changeable than financial markets. See Brummer (2012).
[47] See Levit (2005), who notes that customary international law norms remain vague by design to ensure that they encompass enough "state practice" to constitute international law.

Soft law, by contrast, provides a decisively cheaper means of agreement-making.[48] It offers what can be thought of as low bargaining costs due to its informal status. Perhaps most important, it does not require extensive participation by heads of state or lengthy ratification procedures. Instead, agreements can be struck between administrative agencies and technocrats—with relatively little interference by outsiders. As a result, fewer interests need be accounted for, easing negotiation. Parties can also amend accords relatively easily because of soft law's flexibility, so long as a basic understanding exists.[49]

From the standpoint of lawyers, regulators, and diplomats, soft law additionally involves far fewer constraints, or "sovereignty costs," that may limit a state's ability to follow its prerogatives when circumstances dictate. It is not a formal obligation, so backtracking will not generate the same reputational costs as a treaty, at least in regard to compliance. Furthermore, hard law is, from time to time, coupled with or enables retaliation by aggrieved states, which soft law standards do not usually facilitate or bless.

As such, soft law also helps facilitate agreement by lowering the risk of uncertainty that frequently pervades policy issues. Frequently, there is considerable skepticism or angst concerning the adoption of any particular approach. As Abbott and Snidal (2000) state: "The underlying problems may not be well understood, so states cannot anticipate all possible consequences of a legalized arrangement." By avoiding formal legality, parties to agreements are able to see the impact of rules in practice in order to better assess their benefits. At the same time, they retain the flexibility to avoid unpleasant surprises the rules may hold.

Yet for all its advantages, international financial regulation is not without its own serious structural flaws. Though technically a nonbinding area of international law, it has been largely envisioned to carry both reputational consequences for countries that ignored best practices, as well as potentially higher funding costs for firms in noncompliant jurisdictions.[50] Monitoring of compliance with international standards has, however, been less than robust.

Traditionally, the IMF and World Bank have been the primary actors tasked with surveillance of compliance with those standards. However, prior to the crisis, only countries that received loans from those institutions faced the prospect of such surveillance. Furthermore, the information gained was published only with the permission of the inspected country.[51] It thus remained a matter of that country's discretion whether the facts regarding its compliance were shared with other regulators or market participants.[52]

Following the events of 2008, commitments made under the auspices of the FSB became institutionalized under the IMF's Articles of Agreement, and the surveillance became both mandatory and more public. Furthermore, as part of their obligations, FSB members espoused compliance with key coordination and cooperation measures. Although the international standard setting bodies have become increasingly active in investigating compliance through "peer review" processes, perhaps the

[48] See Gersen and Posner (2008) for a discussion of "cheap talk" theories.
[49] See Lipson (1991), noting that although treaties often contain clauses permitting renegotiation, the process is slow and cumbersome.
[50] See Brummer (2011).
[51] International Monetary Fund (2013), noting that the voluntary nature of the Financial Sector Assessment Program is necessary for "buy-in."
[52] Clark and Drage (2000).

most noteworthy approach to assessing compliance is the "thematic peer reviews" undertaken by the FSB.

These reviews are designed to gauge compliance with international financial standards and policies that the FSB itself prioritizes, as well as take stock of practices in particular policy areas. This work has been coupled with country peer reviews focusing on the progress made in implementing regulatory and supervisory recommendations. By beefing up country-level surveillance, it is thought, detection of a regulator's avoidance of international best practices would be easier. Additionally, the costs of defecting or backtracking from commitments could be heightened.

Not only might regulators be interested in this kind of review and information, but so might private market participants. For example, a bank headquartered in Basel III-compliant country X, and lending to a bank in non-Basel III-compliant (or undercompliant) country Y, may well conclude that the country Y bank is riskier. Under those circumstances, country X bank is likely to charge a premium for lending to country Y bank. Indeed, a range of studies covering markets from securities to banking suggest that the choice of law can impact the cost of capital.

It is likely that some areas of SIFI regulation might be more amenable to cross-border coordination than others. Relative to other financial sectors, most bank activities are (somewhat) more straightforward and hence (somewhat) more amenable to effective "policing." Under those circumstances, countries have begun to implement at least the core Basel capital standards, as illustrated in Table 12.

Table 12: Progress on the implementation of Basel III

	October 2012			March 2013		
	Basel II	**Basel 2.5**	**Basel III**	**Basel II**	**Basel 2.5**	**Basel III**
Number of countries that have issued and implemented final rules	22	20	0	24	22	11
Number of countries that have issued final rules but have not implemented them	1	0	6	1	0	3
Number of countries in various stages of finalizing rules	4	4	19	2	3	13
Number of countries that have not taken significant action to put rules in place	0	3	2	0	2	0
Total	27	27	27	27	27	27

Source: BCBS.

Relative to capital standards, progress on cross-border financial resolution has been considerably less impressive. This point was emphasized in a major thematic review of FSB resolution procedures, published in April 2013.[53] The study noted that while some FSB jurisdictions have reformed their resolution regimes since the crisis, and several others are adopting reforms to strengthen their regimes and align them with the "Key Attributes," overall the implementation remains at an early stage. Legislative action is necessary to fully align resolution processes to that standard in FSB jurisdictions.

[53] FSB, "Thematic Review on Resolution Regimes," Peer Review Report (April 11, 2013).

The April review identified several important obstacles. In many instances, resolution authorities lack the capacity or ability to carry out their international mandates. In some countries, financial authorities have no power to convert a failing bank's debt into equity or prevent parties from exercising their rights under contracts they have with the firm. Most officials also lack the power to assume managerial control of a failing institution or to resolve firms that technically have nonfinancial businesses but may pose systemic risk should they fail.[54]

Finally, even after the promulgation of the "Key Attributes" many jurisdictions lack a statutory resolution planning requirement or the power to require financial firms to reform their operations to improve their resolvability.[55]

At this point, even more problematic than bringing national resolution regimes up to "Attributes" standards is coordinating resolution regimes across borders. To date, basic attempts to institutionalize such coordination remain lackluster. Many jurisdictions lack formal procedures for implementing foreign resolution actions. Information sharing is also low, broadly speaking, despite the exhortations of the "Key Attributes." Furthermore, there have been only limited initiatives to create automatic triggers or cooperative actions where resolution or insolvency provisions are commenced abroad. Meanwhile, most jurisdictions are not even required to consider the impact of their actions on the financial stability of others.

[54] www.financialstabilityboard.org/press/pr_130411.pdf
[55] www.financialstabilityboard.org/press/pr_130411.pdf

IV. Summary and concluding observations

This paper began by noting that, although policymakers around the world continue to respond vigorously to the problems in financial markets and institutions brought into high relief by the global financial crisis, the overall understanding of those responses remains vague and limited. Our study improves the state of knowledge by focusing on one particularly relevant issue, the regulation and supervision of systemically important banks.

The heart of our contribution is the presentation of information heretofore obscure, or new, or both. Our approach is to develop two complementary perspectives. The first is what we have characterized as the global response. That discussion begins by noting that the G-20 and the Financial Stability Board are architects of the most significant agenda to reform the global financial system, particularly as it operates through systemically important financial institutions (SIFIs). We explain what the G-20 and FSB are, how they came to occupy the driver's seat, so to speak, and the evolution of their major reform initiatives since the darkest days of the global financial crisis. That discussion highlights SIFI initiatives, emphasizing those pertaining to global systemically important financial institutions/banks (G-SIFIs and G-SIBs).

Our second perspective is a country-specific one. It starts by observing that while most of the largest banks have not been designated “globally” systemically important, they are nevertheless systemically important when considered in a national or “domestic” context. Under those circumstances it is fortunate that, due to recent World Bank efforts, a large set of information exists about the regulation and supervision of SIBs. Our study summarizes and highlights the new World Bank data on the post-crisis regulation and supervision of SIBs by 135 countries. Broadly, that analysis shows that countries are more similar than different in the measures they have adopted for regulating and supervising SIBs.

We conclude by suggesting that, although this similarity should aid countries in coordinating policies, they have a very long way to go in that respect.

Appendix

Box A.1. The FSB's 12 *Key Attributes for Effective Resolution Regimes for Financial Institutions**

1. Scope: The regme should cover any financial institution that could be systemically significant of critical if it fails.

2. Resolution authority: The regime should be administered by a resolution authority with a statutory mandate to promote financial stability and the continued performance of critical functions.

3. Resolution powers: The regime should provide for a broad range of resolution powers, including: power to transfer critical functions of a failing firm to a third party; power to convert debt instruments into equity and preserve critical functions; power to impose temporary stay on the exercise of termination rights under financial contracts and a moratorium on payments and debt enforcement actions against the failing firm; power to achieve the orderly closure and wind-down of all or parts of the firm's business with timely payout or transfer of insured deposits.

4. Set-off, netting, collateralization, segregation of client assets: The segregation of client assets should be effective in resolution. Financial contracts, including netting and collateralization agreements, should be enforceable. However, entry into resolution and the exercise of any resolution powers should not in principle constitute an event that entitles any counterparty of the firm in resolution to exercise acceleration or early termination rights under such agreements, provided the substantive obligations under the contract continue to be performed.

5. Safeguards: All creditors should receive at a minimum what they would have received in a liquidation of the firm. Resolution powers should be exercised in a way that respects the hierarchy of claims, subject to some flexibility for authorities to depart from the general principle of equal treatment of creditors of the same class where necessary to contain the potential systemic impact of a firm's failure or to maximize the value for the benefit of all creditors as a whole. Rights to judicial review should be available for affected parties to challenge actions that are outside the legal powers of the resolution authority.

6. Funding of firms in resolution: Resolution regimes should include funding mechanisms that can provide temporary financing to continue critical operations as part of the resolution of a failing firm. Such funding should be derived, or recovered, from private sources.

7. Legal framework conditions for cross-border cooperation: Resolution regimes should empower and encourage resolution authorities wherever possible to act to achieve a cooperative solution with their foreign counterparties. Authorities should be able to give effect in their jurisdiction to resolution measures taken by a foreign authority.

8. Crisis Management Groups (CMGs): Home and key host authorities of all G-SIFIs should maintain CMGs with the objective of enhancing preparedness for and facilitating the resolution of a G-SIFI.

9. Institution-specific cross-border cooperation agreements (COAGs): COAGs should be in place between the home and relevant host authorities that need to be involved in the preparation and management of a crisis affecting a G-SIFI.

10. Resolvability assessments: Resolvability assessments should be carried out for all G-SIFIs. Authorities should have appropriate powers to require the adoption of appropriate measures to ensure that a firm is resolvable under the applicable regime.

Table A.1. Institutions designated globally systemically important by the FSB

Designated in 2011 as G-SIFIs	Bank[1]	Designated in 2012 as G-SIBs
yes	Bank of America	yes
yes	Bank of China	yes
yes	Bank of New York Mellon	yes
yes	Banque Populaire CdE	yes
yes	Barclays	yes
yes	BNP Paribas	yes
yes	Citigroup	yes
yes	**Commerzbank**	**no**
yes	Credit Suisse	yes
yes	Deutsche Bank	yes
yes	**Dexia**	**no**
yes	Goldman Sachs	yes
yes	Group Credit Agricole	yes
yes	HSBC	yes
yes	ING Bank	yes
yes	JP Morgan Chase	yes
yes	**Lloyds Banking Group**	**no**
yes	Mitsubishi UFJ FG	yes
yes	Mizuho FG	yes
yes	Morgan Stanley	yes
yes	Nordea	yes
yes	Royal Bank of Scotland	yes
yes	Santander	yes
yes	Societe General	yes
yes	State Street	yes
yes	Sumitomo Mitsui FG	yes
yes	UBS	yes
yes	Unicredit Group	yes
yes	Wells Fargo	yes
no	**BBVA**	yes
no	**Standard Chartered**	yes

Sources: FSB, *Policy Measures to Address Systemically Important Financial Institutions*, Nov. 4, 2011; *Update of group of global systemically important banks (G-SIBs)*, Nov. 1, 2012.

[1] Banks in **bold** do not appear on both lists.

Table A.2. International Standard Setting Bodies[1]	
Name	**Function**
Basel Committee on Banking Supervision [BCBS]	Established by G-10 central banks in 1974;[2] currently, 27 member jurisdictions;[3] forum for regular cooperation among members on banking supervisory matters; formulates supervisory standards, guidelines, and best practices; develops and updates international standards on capital adequacy (most recently, Basel III); developed *Core Principles for Effective Banking Supervision* (most recent edition September 2012), and other supervisory and regulatory principles and guidelines widely disseminated around the world.
Committee on the Global Financial System [CGFS]	Central banks of 21 major advanced and emerging economies, plus the European Central Bank;[3] systematic monitoring of global financial system; longer-term analysis of functioning of financial markets; policy recommendations for improving financial markets functioning and promoting stability.
Committee on Payment and Settlement Systems [CPSS]	Central banks of 23 major advanced and emerging economies, plus the European Central Bank;[3] monitors and analyzes developments in payment, clearing, and settlement systems, and cross-border and multicurrency arrangements; formulates oversight standards for these areas.
Financial Action Task Force on Money Laundering [FATF]	Established by G-7 in 1989;[2] intergovernmental body with 36 member countries; develops and promotes policies for implementation at both national and international levels to combat money laundering and terrorist financing; sets international standards in these areas.
International Association of Deposit Insurers [IADI]	Established in 2002; members from more than 70 jurisdictions; includes central banks and deposit insurance authorities; fosters international cooperation among member jurisdictions on deposit insurance, financial stability, and resolution issues; co-developed, with the BCBS, *Core Principles for Effective Deposit Insurance Systems* (June 2009).
International Association of Insurance Supervisors [IAIS]	Established in 1994; insurance regulators and supervisors from 190 jurisdictions covering nearly 140 countries; more than 120 insurance industry professionals and trade associations as observers; promotes effective and globally consistent regulation and supervision of the insurance industry; issues global core principles, standards, and guidance.

[Table A.2 continued]	
International Accounting Standards Board [IASB]	Independent, privately funded accounting standard setter based in London; governed by 16 board members from countries around the world; develops a single set of high-quality, understandable, and enforceable global accounting standards that require transparent and comparable information in general purpose financial statements; cooperates with national accounting standard setters to achieve global convergence of accounting standards.
International Auditing and Assurance Standards Board [IAASB]	Independent standard setting body; members are professional accountancy organizations from 129 countries; develops auditing and assurance standards and guidance for use under a shared standard setting process involving the Public Interest Oversight Board (which oversees the activities of the IAASB).
International Organization of Securities Commissions [IOSCO]	Established in 1983; members include 117 national regulators of securities and futures markets, and 75 self-regulatory organizations, stock exchanges, and international institutions (including the IMF and the World Bank); governed by a board comprising securities regulators from 29 advanced and emerging economies;[3] develops and promotes standards of securities regulation and effective surveillance of international securities markets.

Source: Nolle, Daniel E. (2013 - forthcoming) “Who's in Charge of Fixing the World's Financial System? The Un[?]der Appreciated Lead Role of the G20 and the FSB,” *Economics Working Paper* [***August 2013 DRAFT***], Office of the Comptroller of the Currency.

[1] As of July 2013. Note that the FSB classifies several other entities as standard setting bodies, including the IMF, the OECD, the World Bank, and the FSB itself. Each is defined by a much broader mandate than standard setting, and for that reason they are not listed in these tables.

[2] The G-7 countries are Canada, France, Germany, Italy, Japan, the UK, and the US; G-10 countries (currently numbering 12) include the G-7 plus Belgium, Luxembourg, the Netherlands, Sweden, and Switzerland.

[3] See Table A.3 in the Appendix for member jurisdictions. The U.S., as a member jurisdiction in the CGFS and the CPSS, holds two seats on both groups: the Board of Governors of the Federal Reserve System and the Federal Reserve Bank of New York, the latter because of its central role in international monetary and payment systems.

Table A.3. Countries represented among member jurisdiction in the G-20, the FSB, and key international standard setting bodies[1]

Country/jurisdiction	G-20 member	FSB member	BCBS member	CGFS member	CPSS member	IOSCO board
Argentina	*	*	*			*
Australia	*	*	*	*	*	*
Brazil	*	*	*	*	*	*
Canada[2]	*	*	*	*	*	*[6]
China	*	*	*	*	*	*
France[2]	*	*	*	*	*	*
Germany[2]	*	*	*	*	*	*
India	*	*	*	*	*	*
Indonesia	*	*	*			
Italy[2]	*	*	*	*	*	*
Japan[2]	*	*	*	*	*	*
Mexico	*	*	*	*	*	*
South Korea	*	*	*	*	*	*
Russia[3]	*	*	*		*	

[Table A.3 continued]						
Country/jurisdiction	**G-20 member**	**FSB member**	**BCBS member**	**CGFS member**	**CPSS member**	**IOSCO board**
Saudi Arabia	*	*	*		*	
South Africa	*	*	*		*	*
Turkey	*	*	*		*	
United Kingdom[2]	*	*	*	*	*	*
United States[2]	*	*	*	*	*	*
European Union	*	*	[4]	*[5]	*[5]	
Hong Kong SAR[7]		*	*	*	*	*
Netherlands		*	*	*	*	*
Singapore		*	*	*	*	*
Spain		*	*	*		*
Switzerland		*	*	*	*	*
Belgium			*	*	*	*
Luxembourg			*	*		
Sweden			*	*	*	

[Table A.3 continued]

Chile						*
Malaysia						*
Morocco						*
Nigeria						*
Pakistan						*
Portugal						*
Romania						*
Trinidad & Tobago						*

Source: Nolle, Daniel E. (2013 - forthcoming) "Who's in Charge of Fixing the World's Financial System? The Un[?]der Appreciated Lead Role of the G20 and the FSB," Economics Working Paper, Office of the Comptroller of the Currency.
[1] As of July 2013. See Table A.2 for full names of standard setting bodies (i.e., BCBS, CGFS, CPSS, and IOSCO). Shaded cells indicate no membership.
[2] G-7 member.
[3] Russia is not a G-7 member, but meets with the G-7 members when they constitute themselves as the G-8.
[4] The EU *per se* is not a member; the European Central Bank, the European Commission, the European Banking Authority have observer status.
[5] Represented by the European Central Bank.
[6] Represented by the securities regulators of Ontario and Quebec.
[7] Special administrative region (SAR) of China.

Table A.4. Global systemically important insurance companies (G-SIIs): Initial FSB designations and G-SIIs policy implementation schedule	
G-SIIs designated in July 2013 **Allianz SE** **American International Group, Inc.**[1] **Assicurazioni Generali S.p.A.** **Aviva plc** **Axa S.A.** **MetLife, Inc.** **Ping An Insurance (Group) Co. of China, Ltd.** **Prudential Financial, Inc.**[2] **Prudential Plc**	
Implementation date	**Policy measures applying to G-SIIs**
July 2013	Designation of G-SIIs, based on IAIS methodology;[3] annual updates by FSB, beginning November 2014. For designated G-SIIs, enhanced supervision by national authorities, including group-wide supervision; implementation of resolution planning and resolvability assessment requirements, including institution-specific cross-border cooperation agreements among relevant national resolution authorities, as specified in FSB's *Key Attributes of Effective Resolution Regimes*.
End-2013	IAIS to design, and FSB to review, a work plan to develop a comprehensive, group-wide supervisory and regulatory framework, including quantitative capital standards, for internationally active insurance groups (IAIGs); FSB will decide the timeline for completion of this framework by end-2013.
July 2014	Crisis management groups (CMGs) established for the initial cohort of G-SIIs. FSB to decide on [1] G-SII status of major reinsurers, and [2] risk mitigating measures for them. Systemic risk management plans to be completed by G-SIIs designated in 2013.
By 2014 G-20 Leaders' Summit	IAIS to develop backstop capital requirements to apply to all group activities, including non-insurance subs.

[Table A.4 continued]	
End-2014	Recovery and resolution plans, including liquidity risk management plans to be developed and agreed by CMGs for G-SIIs designated in 2013.
End-2015 and January 2019	IAIS to develop implementation details for higher loss absorbency (HLA) requirements to be applied starting in January 2019 to all G-SIIs designated as of November 2017.

Source: Nolle, Daniel E. (2013 - forthcoming) "Who's in Charge of Fixing the World's Financial System? The Un[?]der Appreciated Lead Role of the G20 and the FSB," Economics Working Paper, Office of the Comptroller of the Currency.

[1]Designated in July 2013 by the Financial Stability Oversight Council [FSOC] as systemically important non-banks under Section 113 of the U.S. Dodd-Frank Act. Also designated by FSOC was GE Capital. [http://www.treasury.gov/initiatives/fsoc/designations/ Pages/default.aspx].

[2] As of July 2013, Prudential Financial, Inc., had requested a hearing, under Section 113 of the Dodd-Frank Act, to explain why it believes the FSOC should not designated it a systemically important non-bank. The outcome of that hearing was not available as of the completion of this paper.

[3]IAIS, *Global Systemically Important Insurers: Initial Assessment Methodology* (July 2013).

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