CIGI PAPERS
NO. 55 — FEBRUARY 2015

COMPLETING THE G20'S PROGRAM TO REFORM GLOBAL FINANCIAL REGULATION

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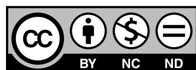

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ACRONYMS

BCBS	Basel Committee on Banking Supervision
FSB	Financial Stability Board
G-SIBs	global systemically important banks
G-SIFIs	global systemically important financial institutions
G20	Group of Twenty
IMF	International Monetary Fund
LCR	liquidity coverage ratio
MMFs	money market mutual funds
NSFR	net stable funding ratio
OTC	over-the-counter
SIFIs	systemically important financial institutions
TLAC	total loss absorbing capacity

EXECUTIVE SUMMARY

Regulators have largely agreed on the main elements of a strengthened and internationally harmonized financial regulatory regime, endorsed at the 2014 Brisbane G20 Leaders Summit. These measures are a major step toward achieving a robust and less crisis-prone global financial system. Nevertheless, a number of specific measures need to receive closer attention in order for Group of Twenty (G20) leaders to declare their reform program a success.

This paper discusses the additional work that policy makers and regulators should focus on in 2015, and explains why closer international cooperation in implementing the regulatory reforms will be essential to success. It also questions whether the overall design of the reform package has the right balance between micro- and macroprudential regulation to strengthen financial stability as much as its architects expect. In particular, it argues that more work needs to be done in two areas: first, the role of macroprudential regulation in the new system needs to be fleshed out so that it is operational and effective; second, G20 leaders must agree to a concrete timetable to put in place an internationally harmonized resolution regime for large cross-border financial institutions as a key element to address the "too-big-to-fail" problem at a global level. These two further steps, which are not yet fleshed out by policy makers and regulators, need to be addressed during 2015 if a more robust regulatory regime to markedly enhance global financial stability is to be in place by the end of this decade.

INTRODUCTION

It has been over six years since the G20 leaders held their first-ever summit at the height of the international financial crisis in November 2008. At that emergency meeting in Washington, DC, they reached a historic agreement to take the measures needed to ensure that such a near-meltdown would not happen again.

The main vehicle for building a more robust and less crisis-prone international financial system is the G20's comprehensive program to reform the global architecture of financial regulation. Its focus is to vastly strengthen the financial system's capital adequacy, robustness and stability. The G20 leaders oversee the broad design and overall progress of this program and the work of the many regulatory agencies involved is coordinated by the Financial Stability Board (FSB).

It is crucial that the upcoming 2015 Antalya G20 Leaders Summit in Turkey is able to carry the design of the global regulatory framework to fruition, commits to the implementation of all its reforms in an internationally coordinated manner, and ensures that each key jurisdiction — and the global financial system as a whole — is subject to effective macroprudential regulation.

During 2015, G20 leaders need to demonstrate that they will not allow the realization of a new, comprehensive and globally harmonized regulatory regime to slip through their fingers.

THE NEAR-TERM REFORM AGENDA

While agreement on a global regulatory framework is almost within the grasp of policy makers, it will require redoubled efforts in a number of areas over the course of 2015 if this is to be accomplished.

The G20 leaders' first task should be to give renewed impetus to finalizing the comprehensive set of measures on which regulators have already agreed. Second, and more important, they need to address design weaknesses in the overall balance of the program that could limit its effectiveness in dealing with the next bout of severe international financial stress.

This paper will summarize the measures of the G20 program that have been agreed so far and are in course of implementation, as well as outline those areas where major progress still needs to be made if it is to succeed in achieving a more robust and stable global financial system over the longer term.

ACHIEVEMENTS OF THE G20 REGULATORY REFORM PROGRAM THUS FAR

A great deal has been accomplished in the G20 regulatory reform program, both in its overall design and agreement among regulators on the details of its main measures and its implementation. This progress was summarized in an FSB paper circulated on the eve of the Brisbane G20 Summit in November 2014.[1] The achievements reflect the fact that, as far back as the intense period of financial stress in late 2008, G20 leaders clearly saw that their reform program would have to be comprehensive to control risks not only in global systemically important banks (G-SIBs) and other global systemically important financial institutions (G-SIFIs), but also those emanating from the loosely regulated "shadow banking" financial sector.[2] Furthermore, they understood that to prevent regulatory arbitrage across financial jurisdictions from creating new and unexpected risks their reforms would need to be harmonized internationally, in both the specification of the regulatory rules and their consistent implementation by a large number of jurisdictions.

The G20's reform plan endeavours to enhance the robustness of financial institutions, markets and

1 See FSB (2014c).

2 Shadow banks are institutions or market-based chains of institutions that intermediate credit outside the regulated banking system.

infrastructures around the world in a number of interrelated areas. It focuses on vastly strengthening the capital and liquidity that global G-SIBs and G-SIFIs hold against their credit, market, liquidity and operational risks. It seeks to end the "too big to fail" problem and to extend the perimeter of regulation to the shadow banking system, derivatives markets, central counterparties and the financial system infrastructure. Perhaps most important, it envisions putting in place a system of macroprudential oversight[3] in each key jurisdiction to identify financial system-wide vulnerabilities as they emerge and take measures to address them before they lead to crisis.

Most of the key elements of the reform have now been agreed. In particular:

- Regulatory requirements for the capital, liquidity, risk management and stress resilience of internationally active banks have been vastly strengthened relative to their pre-crisis levels.
- Key jurisdictions are putting in place policy frameworks for macroprudential oversight to identify emerging financial system-wide vulnerabilities and proactively manage these risks through policy actions, in order to foster the stability of their financial systems.[4]
- A number of G20 countries have implemented regular stress testing and asset quality reviews to assess the resilience of their SIBs and the adequacy of their capital structures, liquidity and risk management on a consistent basis across firms.
- The G20 has made a strong commitment to expand the perimeter of prudential regulation to include systemically important non-bank financial firms and shadow banking entities.
- The G20 is making progress in its ongoing work to design and eventually establish an internationally harmonized intervention and resolution regime for distressed financial institutions — including living wills, internationally coordinated regulatory scrutiny and new legal arrangements to permit the "bail-in" of private stakeholders in distressed firms.

Reflecting these achievements, the chairman of the FSB, Bank of England Governor Mark Carney, has stated that the design of all the main building blocks of the G20 reform program have now been agreed.[5] What remains to be done, in his view, is to implement the reform package fully. To paraphrase: global financial regulators have the tools — now they must finish the job. The FSB, however, recognizes that there may still be further policy tools to design and implement. These include, for example, cross-border cooperation in regulatory oversight and resolution, as well as a "road map" for shadow banking reform.

At the Brisbane 2014 Summit, the leaders endorsed the regulators' agreements on major elements of the regulatory reform. As the centrepiece, the Basel Committee on Banking Supervision (BCBS) has agreed on and is implementing the "Basel III" reforms to increase bank capital adequacy and liquidity, and internationally active banks are moving to conform to these reinforced measures ahead of the schedule required by regulators (see box). Of course, the G20 program is much broader than Basel III alone. What has been agreed — as laid out by the FSB — can roughly be summarized as: building the resilience of financial institutions; ending "too-big-to-fail"; transforming the shadow banking system; and ensuring that over-the-counter (OTC) derivatives markets can continue to function efficiently in times of severe market stress.

UNFINISHED BUSINESS IN FINANCIAL REGULATORY REFORM

The measures outlined above are major steps in strengthening the global financial regulatory framework, and G20 leaders expect that they will make the global financial system more robust and less crisis-prone. In particular, the additional capital buffer that banks identified by the FSB as G-SIBs are required to hold will not only ensure that banks at the centre of the global financial system have much greater capital strength and loss-absorbing capacity, but also that they will benefit less than in the past from the implicit "too-big-to-fail" subsidy that lowered their borrowing costs relative to less systemically important banks.

Nevertheless, there are pitfalls in these new rules. The higher capital charges on banks and the redundancies built into certain key regulatory requirements (see box on next page for details) may provide short-term peace of mind to regulators about the stability of the financial system, but they may have significant unintended consequences if they weaken the regulated banking sector's profitability and capital-raising capacity in a way that causes lending and

3 The G20 program envisions macroprudential oversight in each jurisdiction, but does not attempt to specify which bodies should be charged with implementing macroprudential policies. Given differences in legal and political frameworks, the International Monetary Fund (IMF) and the FSB have not been prescriptive on how macroprudential oversight is to be exercised in each financial jurisdiction.

4 A number of countries, such as Canada and Australia, have long had regulatory structures that are responsible for macroprudential oversight. The FSB (2014c) reports that since the crisis Brazil, China, the European Union, France, Germany, India, Mexico, Turkey, the United Kingdom and the United States have established macroprudential oversight committees with mandates to assess emerging systemic risks and ensure financial system-wide stability.

5 See Carney (2014a).

borrowing activities to migrate to more opaque corners of the financial system.

To finish the job, regulators may need to make significant modifications to already-agreed measures. For example, the combination of the risk-weighted capital asset ratio and the leverage ratio raises questions about which is the binding constraint. Similarly, the two separate but closely interconnected requirements on liquidity and maturity transformation — the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) — may significantly encumber banks' ability to make rapid portfolio adjustments in response to market developments, a problem that arose when similar regulatory minimum liquidity ratios were in place in the 1960s and 1970s.

Furthermore, the debate among regulators about whether "risky" operations such as investment banking and proprietary trading should be hived off in some way from "less risky" commercial banking activities causes confusion in risk management and raises questions about the viability of the business models of universal banks that are currently the core of national financial systems in many countries. These are just a few of the issues that give rise to questions about whether certain key features of the new regulatory regime could allow unexpected risks to build up in the shadows of the financial system.

During the financial crisis it was a number of shadow banking entities and activities that caused the most severe and dangerous financial system-wide contagion in both the United States and Europe.[6] These included some highly interconnected market participants and activities: deeply flawed securitization structures that marketed huge volumes of toxic structured credit products — such as collateralized debt obligations backed by poorly underwritten loans; investment banks and money market mutual funds (MMFs) that relied excessively on unstable wholesale funding; and large sales of credit default swap protection by the giant insurance firm AIG and certain hedge funds. The experience of these crucial weaknesses during the financial crisis clearly obliges policy makers to extend the perimeter of regulation to the shadows of the financial system, where opaque risks can lead to severe contagion.

Regulators have now identified the main areas they need to address to transform shadow banking into a well-regulated and resilient set of market-based credit intermediation channels that can provide an alternative to more tightly regulated bank lending without the weaknesses that caused such severe contagion in the last

6 See Shin (2010). For example, because Lehman Brothers had borrowed heavily from MMFs, its collapse in September 2008 caused massive outflows from the MMFs. The MMFs, in turn, called in large amounts of short-term loans that they had made to banks in Europe, spreading contagion from the US financial system to the other side of the Atlantic.

THE NEW G20 REGULATORY REGIME FOR BANKS

The rules for banks include the new, vastly strengthened Basel III risk-weighted minimum regulatory capital requirements, an additional capital buffer that can be varied in response to changes in the level of system-wide financial risk over the course of the business cycle, and a supplementary leverage ratio as a check on, and complement to, the risk-weighted capital ratio. Bailey (2014) has calculated that these measures have raised the regulatory minimum going-concern loss-absorbing capital ratio for a sample of UK banks *sevenfold* relative to what they would have been required to hold under Basel II. On top of these capital requirements, banks identified by the FSB as G-SIBs must hold an additional "higher loss-absorbency"capital buffer that can add 1 to 3.5 percentage points to its Basel III minimum regulatory capital ratio. At present, 30 internationally active banks are on the FSB's list of G-SIBs.

The regulatory regime for banks also includes a minimum required LCR to help banks weather periods of intense financial system stress and an NSFR to forestall excessive maturity transformation. In October 2014 regulators reached agreement on a new and very important criterion for the regulatory minimum total loss absorbing capacity (TLAC) that each banking group must hold to ensure that if it failed it would have sufficient gone-concern loss-absorbing capacity that it could be wound up at no cost to taxpayers. Internationally consistent implementation of the TLAC requirement will be crucial to mitigating the too-big-to-fail problem at the global level. The TLAC agreement among regulators has been circulated for public comment by early February 2015. See FSB (2014a).

Finally, the FSB and BCBS have established various monitoring and cooperation procedures among regulators internationally. Intensified international regulatory cooperation will be crucial for success in implementing both the micro- and macroprudential aspects of the reform package.

Implementation of the Basel III regulatory requirements by BCBS member jurisdictions began in 2013. By end-2013 these jurisdictions had adopted and implemented Basel III-based minimum capital requirements. BCBS jurisdictions are currently working on adoption of these requirements for the minimum liquidity and leverage ratios and on the regulatory requirements for G-SIBs. Full implementation of Basel III is to be completed by January 1, 2019.

crisis.[7] In particular, measures in these areas should be directed at limiting excessive buildups in overall leverage, as well as liquidity and asset-liability maturity mismatches in financial entities outside the banking sector.

Firm regulatory actions in shadow banking will be essential to achieving financial stability over the longer term. However, this work is still at an early stage and it will take major efforts this year to develop a regulatory structure that fits in well with the bank-focused regulations that are already being put in place. Redoubling efforts on shadow banking during 2015 will be crucial if a comprehensive financial-system regulatory structure is to be in place before the next crisis threatens.

Perhaps most important, the crisis of 2007–2009 demonstrated that today's financial environment is much more interconnected and prone to booms and busts in credit and asset prices than the traditional system of tightly regulated, commercial bank-dominated deposit-taking and lending.[8] This is the reason why, in addition to microprudential regulation and supervision of individual financial institutions, *macro*prudential oversight of the entire financial system is essential in preventing or managing a future crisis. But the measures of macroprudential oversight that have been adopted up to now are far from providing this sort of oversight of emerging financial system-wide risks. Nor are they sufficient to address the powerful feedbacks that can cause such severe contagion in the system.

Given these issues and key structural characteristics of the global financial system, the G20 reforms that have been agreed are unlikely to be enough to prevent a future crisis. Basel III and related microprudential reforms will significantly strengthen solvency and liquidity in large internationally active banks, and other G20 measures — such as the additional capital "buffer" requirement for G-SIBs — may mitigate the too-big-to-fail problem, but there is still much to do.

Beyond strengthening the capital and liquidity of G-SIBs, and extending microprudential regulatory oversight to other key segments of the non-bank financial system, the key additional actions G20 leaders should undertake to complete their regulatory program are:

- to ensure that the G20 reform package is fully harmonized internationally, both in its rules and its implementation;
- to make the newly established macroprudential agencies effective in identifying and mitigating emerging financial vulnerabilities;
- to put an end to the need to bail-in too-big-to-fail financial institutions with taxpayers' money in times of crisis;
- to provide clear, up-to-date information on, and oversight of, the shadow banking system; and
- to achieve a globally harmonized reform of the operation of derivatives markets, which are crucial to financial risk management.

ARE IMPROVEMENTS NEEDED IN THE BASIC DESIGN OF THE FINANCIAL REGULATORY REFORM?

Despite the important enhancements to regulatory rules described in this paper, the G20 program to reform the global architecture of financial regulation still constitutes only a *necessary* condition for achieving global financial stability. As the FSB recognizes, considerable work still needs to be done in these areas to make the G20 reforms more effective in mitigating financial system-wide risks and preventing crises. Therefore, these areas must be a key focus of activity by national and international standard setters in the run-up to the 2015 G20 leaders summit.[9] What are the weaknesses in the reform plan?

First, the overall program relies too heavily on strengthening microprudential regulation and supervision over individual institutions, and too little on effective, forward-looking *macro*prudential regulation of the vulnerabilities in the financial system as a whole.[10] The gathering of macrofinancial data, the introduction of the G-SIB capital buffer and regular banking sector-wide stress testing and asset quality reviews that are being implemented are both welcome and essential macroprudential initiatives. But otherwise the policy tools that macroprudential regulators in many, if not most, jurisdictions can currently employ are limited in scope and their mandates and capacity to use them proactively

7 See FSB (2014a; 2014d). Specifically, regulators intend to develop measures to: make MMFs less vulnerable to an evaporation of wholesale funding; foster greater transparency and better-aligned incentives in securitization and other types of structured finance; adjust required haircuts and margin requirements (for example to mitigate volatility in transactions relating to repos, securities lending and certain derivative instruments); and more effectively oversee banks' interconnections with shadow banking institutions. In addition, monitoring techniques are being developed to permit regulators to see how aggregate risks — such as leverage and maturity and currency mismatches — are evolving in the shadow banking system.

8 See Brunnermeier and Pedersen (2009).

9 See Knight (2014), Knight and Ortiz (2014) and FSB (2014c).

10 For a discussion of the important differences between the goals of microprudential regulation and those of macroprudential oversight, see Hansen, Kashyap and Stein (2011).

are severely limited by legal and political constraints.[11] Indeed, it seems that most of the macroprudential regulatory tools that are so badly needed to foster stability will not be developed early enough that regulators will have had experience with their operation before the next crisis threatens. Currently — compared to the detail of microprudential reform — these practical aspects of macroprudential regulation appear to be little more than an empty shell.

Second, despite the good intentions of regulators, there has thus far been little concrete internationally harmonized action to extend the scope of solvency and liquidity regulation beyond banks to the shadow banking system. The FSB lists a number of areas where initiatives are being taken (see footnote 7 above). But these do not yet constitute a coherent program that would be an integral element of an explicit macroprudential framework.

Third, it still seems that many of the regulatory enhancements being implemented by both international standard setters and national regulators rely too much on highly detailed and complex requirements for capital and liquidity, as well as discretionary enforcement actions, rather than on clear general principles of macroprudential oversight that could better serve to guide financial services firms in taking their risk-return decisions with a clear understanding of their rights and obligations and the consequences of their actions.

Fourth, regulators need to tailor the new regulatory rules they apply to different types of market participants according to the differing roles they play in either amplifying or moderating shocks to the financial system. In particular, to underpin the stability of the system as a whole, regulators need to try to ensure that the rules that govern minimum capital and liquidity ratios for highly leveraged institutions are *different* from the corresponding requirements for the economic agents that do not take on much leverage and have long time horizons for their asset holdings. For example, when a large shock causes highly leveraged investors to trigger a "fire sale" of assets in their scramble to restore their solvency and liquidity, the resulting contagion can be absorbed if long-horizon "buy-side" investors — such as pension funds, insurance and reinsurance companies, sovereign wealth funds and household savers — are able and willing to benefit by buying up assets at bargain prices. Such actions can serve as "shock absorbers," which moderate asset price declines in periods of financial system-wide stress. Since long-horizon buy-side investors are the ultimate holders of most of the world's financial assets, the stabilizing potential of these actions could, in principle, be very large. To promote *system-wide* financial stability, therefore, regulatory rules must not be excessively "homogeneous" across different types of financial market participants. In particular, regulatory capital, liquidity and accounting rules need to be specified in such a way that they avoid inadvertently preventing low-leverage buy-side investors from buying up assets that highly leveraged investors must sell at fire-sale prices to restore their capital ratios. When there is a severe shock to the system, the last thing that regulators should want is to have in place regulatory rules that inadvertently require all market participants to try to sell assets at the same time — to maintain functioning markets, somebody has to be able to buy.[12]

Fifth, while noteworthy efforts have been made to achieve structural change in OTC derivatives markets, to establish central counterparties and to foster more robust financial market infrastructures, the implementation of these new standards has not been consistent across jurisdictions and is behind schedule. As a result, there is insufficient action on the structural changes needed to strengthen the shock absorbers in markets and infrastructures.

These are only some of the most important additional issues that need to be addressed in the near future if the extensive measures that have already been taken in global regulatory reform are to achieve the G20 leaders' basic goal of enhancing global financial stability.[13]

THE NEED FOR EFFECTIVE MACROPRUDENTIAL REGULATION AND AN INTERNATIONALLY HARMONIZED BAIL-IN RESOLUTION REGIME

As has been stressed above, today's market-based financial system is highly sensitive to boom-and-bust cycles in credit growth and asset prices, as well as network failures. It is also undergoing rapid structural changes that will likely accelerate as the new regulatory regime is implemented, and the competitiveness, profitability and growth prospects of different financial institutions are altered in fundamental ways.

11 See Brainard (2014) for a discussion of both the limited scope of the macroprudential policy instruments that are currently available to the US Federal Reserve and the important constraints on its ability to use them proactively.

12 For example, the Solvency II Directive's requirements for the minimum regulatory capital and liquidity of insurance and reinsurance companies in the European Union — as well as the associated accounting rules — should be thoroughly stress tested to ensure that they would be able to play a strong stabilizing role if the EU financial system were to come under severe stress. The same point applies to the risk-based global capital standard for internationally active insurance groups, which the International Association of Insurance Supervisors is committed to develop by the end of 2016.

13 At a broader level, a fundamental obstacle to putting the new regulatory regime in place is the fact that the fiscal actions of some sovereign governments in recent years — and the associated high and rising public debt burdens of some countries — have intensified market participants' doubts about the credit quality of sovereign debt, which had served as the "risk-free" fulcrum of the financial system prior to the crisis.

Consequently, there are two elements of the new financial regulatory framework on which further work must focus in order to achieve and maintain financial stability at the global level. These are: the establishment of effective, forward-looking macroprudential regulatory oversight; and a full G20 leaders summit agreement to establish an internationally harmonized legal and regulatory regime for resolving distressed financial institutions, particularly G-SIBs. Although agreement at the G20 leaders level to put such a regime in place by the end of 2018 would be a highly ambitious goal politically, it is crucial if global financial stability is to be achieved and maintained. A great deal of hard work and negotiation will have to be undertaken during 2015 if the G20 leaders are to crown their massive seven-year reform effort with success at the November summit by committing to put in place these last two crucial elements of the global financial regulatory regime. However, without these two key components, the global financial stability that the G20 program seeks to achieve will prove elusive.

Making Macroprudential Regulation More Effective

Because financial institutions and markets are highly interconnected and experiencing continuous structural change, it is critical that financial regulators be able to identify and exercise a reasonable degree of forward-looking oversight of sectoral and financial system-wide risk concentrations and of *total* leverage in the financial system *as a whole*. The crucial importance of macroprudential regulation for financial system stability stems from this fact. As noted in the preceding section, the tools and mandates for macroprudential oversight are currently limited. Clearly, the G20 reform needs to focus more heavily on building an effective macroprudential regulatory structure to ensure the stability of the overall financial system.[14]

Because a tightly interconnected financial system suffers contagion and network failures when it comes under stress, the first task of macroprudential regulation must be to identify emerging vulnerabilities and to attempt to strengthen solvency and liquidity to prevent the stress from causing a crisis. So far, regulators have focused their macroprudential measures on requiring banks to build up capital and liquidity buffers during the upswing of the credit cycle, and to reinforce their risk management practices. However, more can be done to strengthen macroprudential regulatory assessments of system-wide risks during these buoyant times using the real-time information that is becoming available from financial data repositories. This has been a focus of research, but so far the results in terms of a usable macroprudential tool kit have been meagre. Far more needs to be done to determine how "big data" on all aspects of the financial system can be combined in an analytical framework for macroprudential regulation that can more clearly identify emerging system-wide risks.

When stresses do build up and a crisis threatens, the second crucial task of the macroprudential regulator is to take actions that will mitigate and attenuate stress. One aspect is to allow the capital and liquidity buffers that have been built up in good times to be wound down when system-wide contagion occurs. The rationale, as already noted, is that in times of crisis leveraged institutions typically try to restore their capital ratios by shrinking their balance sheets, thereby contributing to the so-called "fire-sale externality," in which each institution bases its assumptions about how much liquidity it will gain by selling assets on the assumption that yesterday's price is still valid — even though there is an aggregate excess supply of credit products in the market. These actions can cause both system-wide contagion and severe constraints on the flow of credit to the broader economy.

The destabilizing elements of this balance sheet shrinkage are caused by these interconnected "credit-crunch" and fire-sale effects, which — as the international financial crisis demonstrated — are precisely the types of contagion that the macroprudential regulators should seek to attenuate.[15] This point is, of course, well understood at the analytical level. Nevertheless, in practice it is likely to be politically difficult for regulators to allow prudential buffers to be run down when the system is under stress and market participants are uncertain about the solvency of key institutions. This is a crucial area where clarity on how macroprudential tools will be used in conditions of stress could be important in preventing a crisis in the first place.

National authorities are implementing or contemplating several types of macroprudential measures.[16] These include: further work on counter-cyclical capital buffers; asset-specific counter-cyclical capital buffers; systemic risk reduction measures (for example, mortgage market loan-to-value requirements); more dynamic stress-testing procedures; and additional capital requirements for non-bank SIFIs as well as banks.[17] Since differences in the stringency of these regulations across jurisdictions would lead to regulatory arbitrage and the growth of unidentified

14 Given the international linkages in the global financial system, effective macroprudential regulation is needed not only for each individual jurisdiction, but also for the global financial system. See Haldane (2014).

15 See Hanson, Kashyap and Stein (2011) and Brunnermeier and Pedersen (2009).

16 For a discussion, see Brainard (2014).

17 Some of these measures (such as counter-cyclical capital buffers and capital requirements for SIFIs) are being harmonized internationally and standardized within the BCBS and FSB process, while others (asset-specific counter-cyclical capital buffers) as yet are not.

risks, standardization and international harmonization of macroprudential regulatory rules are obviously important for global financial stability. Measures of this sort will address some types of sectoral risk concentrations, but they are unlikely to be effective in overcoming the larger problems of contagion across sectors in conditions of full-blown financial system-wide stress.

There is a great deal more that should be done to make macroprudential regulation effective in stabilizing the financial system as a whole. While research is progressing in this area it has not yet produced clear conclusions that regulators can use operationally to manage the overall system. One possible enhancement that should be considered more actively would be for macroprudential regulators to *publish* aggregate real-time information on evolving risk levels and concentrations in various sectors so that markets could adjust asset prices in response to evolving system-wide risks. If systemic vulnerabilities could be internalized in this way, "market discipline" could be more effective in helping to reinforce the standard tools of macroprudential regulation in fostering financial stability.

The distinction between macro- and microprudential regulation has two further implications: macroprudential regulation must address *all* leveraged financial institutions, not just those that have access to central bank "last resort" lending, deposit insurance or other explicit or implicit government guarantees[18]; and as already emphasized above, regulatory rules for "low leverage" institutions should be different from rules for highly leveraged firms.

To summarize, macroprudential regulators — such as the Financial Stability Oversight Council in the United States, the European Financial Stability Board in the European Union, and, since November 2014, the European Central Bank as the overseer of the Single Supervisory Mechanism in the euro zone — need to develop clear policies that will make them central to ensuring financial system-wide stability in both good times and bad. To accomplish this, macroprudential regulators must strengthen their ability to analyze the new real-time financial data that is being made available, so they can distinguish normal risk-taking activities from those that give rise to major financial system vulnerabilities. If they can achieve this, our interconnected and complex financial system will be much safer.

Establishing an Internationally Harmonized Resolution Regime for Internationally Active Financial Institutions

The interconnectedness of the modern financial system is also the reason why putting in place a uniform legal and regulatory framework for resolving internationally active financial institutions is critical to financial stability. If a bank or other financial firm that is systemically important in a given jurisdiction becomes impaired, the interconnections in the system will quickly transmit contagion to other institutions and markets that would have remained sound if those problems had not occurred. And, if the impaired institution is large and active internationally, this contagion will likely be transmitted into the global financial system, as was the case in the crisis of 2007–2009.

Thus, to assure financial stability, the legal and regulatory framework of the resolution regime for SIFIs in each G20 country must be reformed in a way that allows individual financial institutions and asset classes to "fail," while ensuring that such an individual failure does not create contagion that impairs other segments of the financial system or require a taxpayer-funded bail-out. As Mark Carney in his capacity as FSB chair has rightly emphasized, market discipline "will never be felt fully if markets believe that creditors and shareholders will be bailed out in a crisis because banks are too big to fail" (Carney 2014b).

Furthermore, since the large institutions at the centre of the global financial system are international in scope, there must be a full *internationally consistent* legal and regulatory framework for resolving them across borders when they become distressed. This is the rationale for the argument made in this paper that it is up to the G20 leaders, at the summit level, to commit their countries to establish an internationally harmonized resolution regime, and to foster the legislative and regulatory initiatives within their own jurisdictions as well as the enhanced international cooperation necessary to implement it effectively.

The broad outline of the framework that can deliver such a resolution regime has now been fleshed out by the regulatory community.[19] The FSB approach centres around: identifying G-SIBs and G-SIFIs; a common international standard on the total loss absorbing capacity that G-SIBs must hold; and a global framework to prevent cross-border counterparties taking their money out before others

18 As an integral element of the broader macroprudential framework in the reformed regulatory regime, central banks will need to be ready to provide liquidity against a wide range of collateral to a broader range of counterparties. See Bank of England (2014).

19 See Tucker (2013) and FSB (2014b).

when a systemically important institution fails.[20] But this is unlikely to be enough. Thus, the fundamental challenge for the immediate future is to make this structure truly operational at the global level.

Success in this crucial area will require two elements that will be very difficult to achieve: first, a comprehensive internationally agreed legal and regulatory framework for resolving distressed SIFIs that includes bail-in provisions for private creditors and stakeholders and respects a consistent ranking of creditor priority; and second, close and effective cooperation within the crisis management groups of home- and host-country regulators that have recently been established.

Although the financial system is global in scope, even the largest internationally active financial institutions are domiciled in individual jurisdictions. And national legal and regulatory frameworks governing restructuring and resolution are not compatible internationally. Therefore, implementing a global resolution regime for internationally active financial institutions will require an explicit agreement among the G20 leaders, preferably at the 2015 summit, to put this structure in place on an ambitious timetable. Agreement on this will indeed be a tall order.[21]

CONCLUSION

This paper has presented a short summary of the G20's major achievements in agreeing on — and initiating the implementation of — a new internationally harmonized regulatory framework that will contribute to a more robust global financial system. It has also outlined the areas that policy makers and regulators are treating as a high priority for further work in the run-up to the 2015 G20 leaders summit.

But it has also been argued here that the regulatory measures that have been agreed, or will be completed this year, constitute only a necessary condition for strengthening global financial stability. In order to strengthen financial stability further, some of the measures already agreed will need to be modified, and additional measures will need to be committed to by G20 leaders.

This paper has outlined additional measures on which there is currently insufficient cooperation within the global community, as well as crucial lacunae — such as clear operational guidelines for what additional functions the recently established macroprudential regulators need to take on in order to be able to identify and mitigate emerging financial risks, and the need for the G20 leaders to agree on the early establishment of a globally harmonized legal and regulatory framework for resolving distressed financial institutions. These areas deserve focused attention now, before the next crisis hits. There is still much to do, and little time.

20 Late in 2014, an initial group of 18 global derivatives dealers signed an important FSB-brokered agreement that prevents foreign derivatives-market counterparties of a failing bank from disruptively terminating the derivatives contracts they hold with it. This agreement brings international practice into conformity with similar rules that already apply within key jurisdictions, thereby limiting the risk that the actions of foreign derivatives counterparties will intensify the contagion from a failing institution to its other domestic and foreign creditors.

21 There would be grave long-term risks to global stability if G20 leaders were not able to establish an internationally harmonized resolution regime that could manage the failure of G-SIBs and G-SIFIs, without impairing the operation of the international financial system. But the political impediments to implementing such a universally agreed arrangement are illustrated by the protracted negotiations on, and ultimate failure of, the IMF's effort in 2002 to obtain approval of its proposed Sovereign Debt Restructuring Mechanism.

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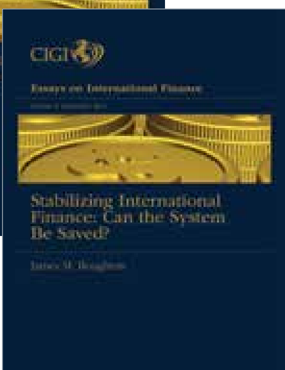

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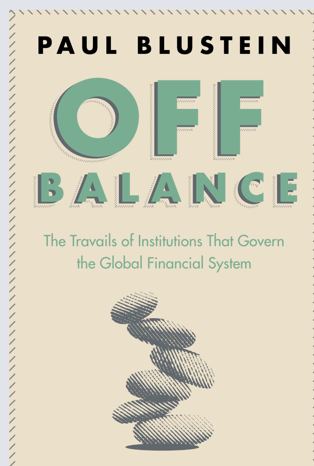

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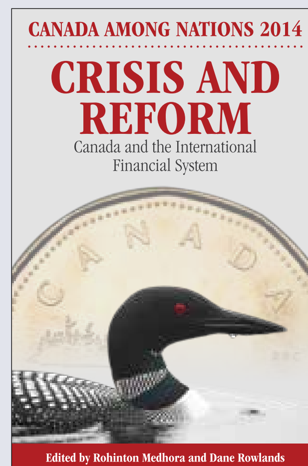

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