Review of Economics & Finance
Submitted on 31/Aug./2012
Article ID: 1923-7529-2013-02-01-17 Richard J. Herring

The Case for Rapid Resolution Plans[1]

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Abstract: During the peak of the financial crisis, the Group of Twenty met to determine how to repair the financial system and prevent a similar crisis from erupting in the future. They agreed to introduce a new kind of tool to counter the too big to fail problem: rapid resolution plans. Within the framework established by the Financial Stability Board, most high-income countries are attempting to implement this concept to enable them to resolve a large, troubled institution rapidly while preserving its systemically important functions, but without disrupting the rest of the financial system. This paper highlights the challenge that international corporate complexity poses for the effective implementation of rapid resolution policy.

JEL Classifications: G21, G28, G33

Keywords: Resolution, Too big to fail, Systemically important financial institutions, Corporate structure

1. Introduction

The recent crisis made clear that the United States lacked a coherent regime for resolving systemically important banks (SIBs). In this it was not alone. The Basel Committee on Banking Supervision (2010) concluded that no country had a framework for addressing adequately the problems that arise in the resolution of a purely domestic banking conglomerate, much less a cross-border or global systemically important bank (G-SIB).

2. The Challenge of Orderly Resolution

Because of its regulatory complexity, the United States provides a clear example of many of the problems. Before the Dodd-Frank Wall Street Reform and Consumer Protection Act, a purely domestic U.S. bank financial conglomerate was subject to multiple resolution procedures, with no established approach for coordinating the actions of the multiple regulatory authorities involved. The bank would be subject to the FDIC's prompt corrective action measures and, unless officials invoked the systemic risk exception, the FDIC would be constrained to select the resolution method

[1] In the popular press, rapid resolution plans are known as "living wills" or, more sardonically, as "funeral plans." The Financial Stability Board earlier emphasized the term "recovery and resolution plan." The Dodd-Frank legislation uses the term "rapid and orderly resolution plan". For brevity, I will refer to the concept as rapid resolution plan.

that was least costly to the deposit insurance fund. A SIB in the U.S. is almost certain to be part of a holding company, which would be subject to a different resolution approach, usually conducted by a bankruptcy court. Since bank holding companies sometimes own 20% to 40% of the assets of the group, a lack of coordination between the bankruptcy court and the FDIC could cause destructive delays in resolution. In addition, if the group has a securities subsidiary, the broker-dealer would be subject to Chapter 7 liquidation proceedings under the bankruptcy law and the special resolution procedures of the Securities Investor Protection Corporation, while the rest of the securities unit would be subject to Chapter 11 restructuring proceedings under the bankruptcy law. Finally, if an associated insurance company were insolvent, it would be unwound under the individual insurance guarantee systems of the states in which it was chartered.

Apart from the Fed and the FDIC, none of the other regulators or judicial authorities is required to consider the systemic risk implications of its decisions. Their first and foremost obligation is to protect the customers of the failing entity within their regulatory domain. In response to a threat of insolvency, they would inevitably ring-fence the assets they could control for the benefit of the customers they are charged with protecting. Only after the claims of customers of their regulatees have been met would they consider releasing additional assets (if any) to the parent for distribution to other claimants on the group.

All of the preceding complexities can be found within a single country. If differences in national sovereignty, statutory objectives, corporate structures, powers and competencies are factored in as well, the complexities expand exponentially and you have the essential features of the cross-border challenge in resolving a global systemically important bank (G-SIB).

Perhaps nothing illustrates the lack of an effective framework for unwinding the affairs of a financial conglomerate more clearly than two days in mid-September 2008. On September 15th, Lehman Brothers was sent to the bankruptcy court with virtually no preparation and, two days later, AIG was saved with a massive intervention, again with virtually no significant planning.

Although central bankers universally adopt the doctrine of constructive ambiguity to deter moral hazard, market participants tend to make inferences from what the authorities actually do rather than what they say. Unless market participants believe policy responses will be random, the policy of constructive ambiguity is doomed to failure and puts policymakers in an impossible position. When they fail to act in the supportive way market participants expected, constructive ambiguity quickly turns to destructive uncertainty. Market participants radically reduce their expectations of the probability of a bailout and consequently raise their risk premiums for all financial institutions that they had assumed would be protected by the safety net.[2] Many dump risky assets, flee to higher quality, more liquid assets or wait on the sidelines until they feel confident that they can once again predict how policymakers will behave. The result is that governments face an unpleasant trade-off between preserving stability in the short term through a bailout and enhancing stability in the long run by improving market discipline, so that at least some unsecured creditors may fear loss. The short-run goal inevitably wins. Political pressures (and the fear that the long run is irrelevant unless the system can survive the short run) have led to unprecedented government interventions not only in the U.S., but also in several other countries. The lack of appropriate resolution tools too often results in hastily arranged bailouts negotiated over chaotic, sleepless weekends.

[2] Huertas (2010) notes that risk premia are likely to vary with the expected loss. If the probability of a bailout is thought to be 1, then the expected loss will be zero. But if the behavior of the authorities causes market participants to lower their expectation of a bailout, risk premia can go up sharply.

Most of the problems that plagued the authorities in the recent crisis could have been anticipated from earlier banking crises (Herring, 2002). These lessons include the danger of uncoordinated actions by the authorities, the first-mover advantage in declaring bankruptcy, the sensitivity of markets to unanticipated behavior by the authorities, the challenge of resolving an institution with substantial international corporate complexity, the disruptive impact of applying bankruptcy procedures to institutions that had been actively engaged in trading, the profound differences in resolution procedures and bankruptcy laws across countries, and the ambiguous benefits of close-out netting.

Unfortunately, regulators learned little from these earlier crises. No major advances were made in national resolution policies or in the coordination of resolution policies across countries. Indeed, as financial activity became more concentrated in fewer, increasingly larger and more complex institutions, the financial system became more vulnerable to the problems exposed in the earlier crises. It is only in the aftermath of the recent crisis that resolution policy has moved to the top of the international regulatory agenda. The Group of 20 (Pittsburgh Summit and Cannes Summit) has placed priority on strengthening resolution policy in all major countries with the Financial Stability Board tasked with implementing these goals and making regular reports to the Group of 20.

The magnitude of the recent crisis has focused attention on resolution policy for the simple reason that too big to fail[3] is too costly to continue.[4] Not only are costs large relative to global output, but also, in some countries, they are beyond the capacity of the national government to provide credible support. For example, Ireland's bailout of its banks transformed a banking crisis into a sovereign debt crisis.[5]

Some industry leaders contend that these costs do not provide a sufficient rationale for reforming regulatory, supervisory and resolution policy, arguing that the recent crisis was an anomaly – akin to a thousand year flood. The data refute this rosy view. In an unpublished study, Andrew Kuritzkes has shown that the percentage of global top 100 financial institutions (ranked by assets in each year) that failed over the 20-year period from 1989-2008 was an astonishingly high 1.3%.[6]

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[3] This term is a catch all for institutions that are too big to fail, too complex to fail, too opaque to fail, too interconnected to fail or too correlated to fail.

[4] See Huertas (2011) for this phrase and the notion that fundamentally the solution must be either to make banks fail safe or safe to fail. Andrew Haldane (2009) estimated that guarantees and subsidies extended by the U.S., the U.K. and the euro area to support the financial system amounted to 25% of world GDP in November 2009. Note this was before a series of costly bailouts in the euro area, several rounds of quantitative easing across the world and the cost of the bailout of the U.S. GSEs became apparent.

[5] This is an interesting reversal of the pattern in the 1980s when a string of sovereign defaults threatened the solvency of many of the largest banks in the world. Especially within the euro-area, the toxic interaction between weak sovereigns and weak banks has been viewed as a threat to the integrity of the euro area.

[6] The estimate includes firms that became insolvent (Lehman), were merged with government assistance (Bear), forced into conservatorship (Fannie Mae and Freddie Mac), or became a ward of the state through a government-owned majority investment (AIG). There were 16 failures that met this definition in 2008 -- 8 each in the U.S. and Europe -- and another 10 firms (in Japan and Europe) before then, for a total of 26 firms over the 20-year period. Twenty six failures divided by 2000

How should the costs of bailouts be measured? Not just in costs to taxpayers and the strain on public finances and central bank balance sheets, but equally importantly in the resources wasted sustaining huge, Zombie-like institutions that warehouse large amounts of non-performing assets rather than serving as useful intermediaries. In effect, the banks are funding non-performing assets rather than making new loans to small and medium sized enterprises that may have productive opportunities. This delays economic recovery and the creative destruction that is the heart of dynamic capitalism. It also intensifies incentives for risk-taking by SIBs. This will distort competition and make future crises more frequent, larger and more difficult to manage. Mervyn King (2009) has stated that, "The massive support extended to the banking sector around the world…has created possibly the biggest moral hazard in history."

How can the prospect of bailouts (and the accompanying distortions) be eliminated without endangering financial stability? Two obvious alternatives present themselves: (1) make G-SIBs failsafe or (2) make G-SIBs safe to fail. History provides little reason for optimism that the first alternative can succeed. Although supervisors have substantial power over institutions in financial distress, they have much less leverage over institutions that appear to be highly profitable -- even though experience has shown this is precisely when SIBs are likely to take the riskiest positions. Qian, Reinhart and Rogoff (2010) show that over two hundred years of history for more than sixty countries, banking crises have occurred with distressing regularity in both high-income countries and low-to moderate-income countries. With the exception of one interval of financial repression in which deposit rates and entry into the financial services industry were rigorously controlled, countries have been unable to conquer this problem regardless of their regulatory or supervisory approach. Moreover, regulatory arbitrage will ensure that the supervisors are always behind the curve. The "regulatory dialectic" continues to function and regulatees are inevitably more agile than regulators Kane (1989).

3. Making SIFIs Safe to Fail

Making SIFIs safe to fail requires a radically new, integrated approach to regulation, supervision and resolution that focuses on a possible endgame in which at least some creditors must face the risk of loss (or bail-in). The next section will focus on the general characteristics of such an approach to resolution. Section 3 will review some of the challenges that resolution policies face with regard to cross-border issues and section 4 will conclude with some observations about the challenges that must be met in order to accomplish the orderly resolution of a G-SIB with significant cross-border operations.

What objectives should a good resolution procedure accomplish? Oliver Hart (2002, pp. 3-5) has identified three goals that all good[7] resolution procedures should meet.

1. A good procedure should deliver an *ex post* efficient outcome that maximizes the value of the bankrupt business to be distributed to stakeholders.

observations leads to an annualized failure rate of 1.3%. The list doesn't include the Icelandic banks, or banks such as Northern Rock or Indy Mac, because they were too small to make the Global Top 100 list. Most of these institutions, of course, were euthanized without imposing losses on creditors (with the exception of IndyMac).

[7] Given that economists do not have a satisfactory theory of why parties cannot design their own bankruptcy procedures, Hart is careful not to describe these procedures as 'optimal.'

2. It should promote *ex ante* efficient outcomes by penalizing managers and shareholders adequately in bankruptcy states so that the bonding role of debt is preserved. In that context, debt can serve as a disciplinary device to mitigate agency problems within the firm. The increased probability of financial distress puts managers' jobs at risk and may encourage greater effort and efficiency.

3. A good resolution procedure should maintain the absolute priority of claims in order to protect incentives for senior creditors to lend and to avoid the perverse incentives that may arise if some creditors have a lower priority in bankruptcy than they would if the firm were a going concern.

These three objectives apply equally to financial and non-financial firms, but in the case of SIBs, three additional objectives should be taken into consideration:

4. A good resolution procedure should also be mindful of the costs of systemic risk. It should be cognizant of, and attempt to limit, the spillover effects that may damage other institutions, markets, the financial infrastructure, and the real economy.

5. A good resolution procedure should protect taxpayers and other potential sources of bailout funds from loss, since imposing losses on parties that do not share in the *ex-ante* gains creates perverse incentives that encourage excessive risk taking by SlFIs.

6. A good resolution procedure should lead to quick, predictable results. Markets abhor negative surprises, particularly if they result from unanticipated behavior by regulators that result in <u>unexpected</u> losses.

If a rationale exists for treating SIBs differently than other kinds of firms in insolvency, it can be found in these latter three objectives. The key is to assure continuity of systemically important services for customers and markets. That, after all, is what happens in normal corporate reorganization/bankruptcy procedures – the firm can continue in operation while its capital is being restructured. This minimizes the need to liquidate assets at fire-sale prices, preserves going concern value and assures that investors bear losses in line with strict seniority of their claims. But the stays imposed in normal bankruptcy proceedings do not work for banks. As Huertas (2011) notes, "The very essence of banking is the ability to make commitments to pay – depositors at maturity, sellers of securities due to settle, borrowers who wish to draw on lending commitments, derivative counterparties who contracted with the bank for protection from interest rate, exchange rate or credit risks. Putting a stay on payments to creditors is equivalent to stopping the bank's operating business." Under current procedures, bankruptcy for a bank has been tantamount to liquidation.[8] This is usually the least desirable outcome for both creditors and society because it usually results in the loss of going concern value for creditors and threatens financial stability by disrupting the provision of systemically important services. Liquidation imposes very significant incremental losses relative to the losses that would be realized if the entity were able to continue to operate while its capital is being restructured. Nonetheless, we will analyze the bankruptcy process because some countries have no resolution tools other than bankruptcy courts and several scholars are

[8] See, however, revision of the bankruptcy code proposed by Jackson (2010), Bliss and Kaufman (2011) and Scott (2011) that would mitigate many of the deficiencies in current bankruptcy processes.

working on amendments to the normal bankruptcy process to make it more effective in resolving SIBs.

The first critical issue is how and whether to define a SIB, which remains surprisingly contentious -- even though the FSB has begun to publish a list of G-SIBs each year. Some believe SIBs cannot be identified *ex ante* because it is impossible to predict how a crisis will unfold. Others believe that SIBs should not be identified *ex ante* because it will lead them to take greater risks.[9] I believe that most SIBs can and should be identified *ex ante* and that moral hazard should be controlled by making it costly to be designated as a SIB. Moreover, unless SIBs are publicly identified *ex ante* they cannot be regulated and supervised differently from other institutions and no meaningful resolution plan can be developed.

SIBs should be designated according to the degree to which an institution is systemically important as indicated by its: (1) size relative to the economy; (2) performance of systemically important functions; and (3) complexity as measured in terms of (a) the number of its affiliates; (b) the extent of operational and financial interdependencies; and (c) the number of regulatory agencies or courts that would have to approve the resolution of the group.

Among this group of institutions, supervisory attention should be focused on the SIBs most vulnerable to a shock as reflected in: (1) the amount of leverage employed by the group; (2) exposure to liquidity risk; (3) the alignment between corporate structure and lines of business; and (4) the "resolvability" of a SIB as measured in an estimate of the time it would take to resolve. These data should be factored into the standard examination and statistical evaluations that inform the diagnosis and triage stage in the resolution process.

SIBs that appear to be highly vulnerable to a shock because of high leverage, outsized exposure to a liquidity risk, a substantial misalignment between corporate structure and lines of business, or because they would take an excessively long time to resolve would be identified as problem institutions and subjected to significant additional supervisory scrutiny relative to other SIBs.

This is the fundamental reason that resolution policy must be integrated with regulatory and supervisory policy. Many of the details essential to identifying and classifying SIBs are equally relevant to formulating resolution plans. In the absence of such details, triage cannot be properly executed, thus wasting supervisory resources and leaving the system more vulnerable to a crisis.

4. The Role of Rapid Resolution Plans

The resolution plan should begin with the assumption that the SIFI is insolvent under the regulatory definition of insolvency. This definition should be above the point of economic insolvency and standardized across countries because differing insolvency standards (and differing rights to intervene in a deteriorating institution) can lead to disorderly insolvencies or massive, improvised bailouts.[10] The plan should be a joint undertaking of the institution, its board of

[9] This point of view is often accompanied by a concern about "cliff" effects in which a very slight change in size may change an institution's classification. This problem diminishes in importance, however, when multiple indicators are taken into account, which is appropriate in any event. Size alone does not capture all of the concerns regarding systemically important institutions.

[10] In this regard, the FSB (2011, p. 3) practices document is seriously deficient. Rather than specify an intervention point that is easy to measure and unambiguously before a firm becomes insolvent, it relies on fuzzy language that states the authorities should have power "to resolve a firm that is no

directors, and the principal supervisors. Although clearly the supervisors must have decisive control, it is equally important that the resolution plan be perceived as a fundamental part of good corporate governance at least on a par with business continuation planning. The plan should contain seven elements:[11]

(1) The SIB must map its lines of business into the corporate entities that must undergo some sort of resolution process in the event of insolvency. Each of these separate entities and its location must be justified to the board of the SIB and, ultimately, to the primary supervisors for each of the different lines of business, and to the college of supervisors established for a GSIB. Fragmentation of lines of business across numerous legal entities will be difficult to justify to the board and the authorities because it would impede any attempt to salvage going-concern value from a line of business that cannot be easily separated from the rest of the group and sold.[12] The resolution procedures must be described for each entity, including an estimate of how long they will take to complete. The dialogue between the SIB and its primary supervisor will inevitably be contentious because it will represent a dramatic change from past practice[13] and will cause the SIB to focus on possibilities it would rather not contemplate.[14] As Lord Turner (Giles et al., 2009), chairman of the

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longer viable and has no reasonable prospect of becoming so." This ambiguous standard will lead to delayed intervention, larger losses to be allocated and potential inconsistencies across countries as various national supervisors make differing judgments about a firm's prospects of becoming viable. Current definitions of insolvency stress either cash flow insolvency (inability to meet liabilities when due) or balance sheet insolvency (liabilities exceed the value of assets). Even among countries that have chosen to permit regulators to intervene before the point of cash-flow or balance sheet insolvency, debates continue on whether it is better to rely on rules (which make actions predictable and increase the accountability of the supervisory authorities) versus discretion (which permit supervisory authorities to exercise discretion over when to intervene).

[11] This list overlaps substantially with the recommendations of the SIPC Trustee charged with liquidating Lehman Brothers (Giddens 2010, Exhibit D). Giddens places special emphasis on details regarding all accounts including account holder agreements, applicable systems and associated collateral and a reconciliation of clearing sub-ledgers with the general ledger, reflecting his frustration in obtaining even the most basic information about customer accounts and collateral. He also emphasizes the importance of obtaining the cooperation of clearing banks, exchanges, clearing houses, custodians and major counterparties. Although Kaufman (2011) argues that it is essential to know the details of the resolution procedure before you can devise a useful rapid resolution plan, I believe that, with minor exceptions, the kind of information you would require is virtually the same whether the resolution is conducted by the courts or a resolution agency. It is only if you devise a recovery plan as well, that these other kinds of assumptions – liquidation values, etc. – are important.

[12] The collapse of Lehman Brothers presents a particularly good example of this problem. It had lines of business fragmented across numerous subsidiaries that were caught up in multiple insolvency procedures on three different continents with no prospect of reassembling the lines of business, even though this might have preserved substantial going-concern value.

[13] Hüpkes (2009, p. 515) made the point clearly in an article titled "Complicity in complexity: what to do about the 'too-big-to-fail problem,'" in which she argues that policymakers need to give more attention to how the complexity of an institution's legal structure affects the resolution process. She explains that the size of an institution is not the crux of the matter. "Rather it is the complexity of large financial institutions that makes rapid and orderly wind-downs virtually impossible."

[14] The very rumor that a SIB was making a resolution plan might set-off a run in the absence of a general legal requirement that all SIBs must do so. The legal obligation will enable the SIB to do

Financial Services Authority in Britain, has noted, "In the past, authorities around the world have tended to be tolerant of the proliferation of complex legal structures designed to maximize regulatory and tax arbitrage. Now we may have to demand clarity of legal structure."[15]

(2) The SIB must identify key interconnections across affiliates, such as cross-guarantees, stand-by lines of credit, contractual commitments or loans that link the fate of one affiliate to that of another. The plan should also identify operational interdependencies such as information technology, service agreements, staffing allocations, human resource and related support systems, trading and custody systems, as well as liquidity, and risk management procedures that would impede the separation of one unit from another.

(3) The SIB should be required to develop and maintain a virtual data room that contains information that an administrator or resolution authority would require to make an expeditious resolution of the entity. This is likely to require investment in an improved management information system that is quite granular and provides details such as organizational structures, and loan and counterparty exposures disaggregated by borrower or counterparty, currency and legal entity.[16] The SIB must also identify key information regarding trading and custody systems, indicating where they are located, and the essential personnel to operate them. Plans must be made to make these systems available to all relevant supervisory authorities at home or abroad during the resolution process, whether they are operated by the SIB or outsourced to a third party. As a practical matter, this may require that backup IT operations be segregated in a separate subsidiary that could continue to function while the rest of the firm is resolved.

(4) The SIB must identify any activities or units it regards as systemically important, and demonstrate how they could continue to operate during the resolution process. This will usually require that they be separately incorporated and made bankruptcy-remote so that they could easily be detached from the group if necessary, in order to keep the systemically important function operating while other parts of the group are resolved (Hüpkes, 2005). Arrangements should also be in place to make a rapid transfer of customer accounts to another institution in the event of resolution.

(5) The SIB must consider how its actions may affect exchanges, clearing houses, custodians, and other systemically important elements of the infrastructure. Ideally it should identify how it can disconnect from these highly automated systems without creating serious knock-on effects. This will require cooperation with these systemically important parts of the infrastructure. A particularly good example of a successful effort of this sort was the CHIPS (Clearing House Interbank Payment System) initiative enabling its bank participants to withstand the simultaneous failure of the four largest participants.

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something it should be doing as a matter of good governance, without fear of undermining its reputation.

[15] This notion has generated a considerable amount of controversy in Britain, with bankers generally taking the view that the supervisory authorities have no business monitoring their tax avoidance strategies. Alistair Darling, Chancellor of the Exchequer, has tartly responded (Giles et al, 2009), "I do worry when an organization is structured for tax purposes rather than for the efficiency of its business and the strength of its business."

[16] This too is likely to be a contentious point as demonstrated by the years it has taken the FDIC to gain authority to require insured banks to identify insured deposits to facilitate rapid payouts. Banks successfully resisted for a number of years claiming that it would be an overwhelming technological challenge.

(6) The SIB must identify the procedures it would follow during resolution. This report should be quite detailed including, at a minimum, a list of bankruptcy attorneys and administrators who might be called upon, individuals who would be responsible for press releases and various notifications to counterparties and regulators, and a good faith estimate of the time it would take to resolve each separately chartered entity.

(7) The resolution plan should be reviewed at least annually and updated if the institution executes a substantial merger or a restructuring that introduces additional complexity.

The managers of the SIB must demonstrate to their board of directors that the resolution plan is complete and feasible. Boards should recognize that oversight of resolution plans is as much their responsibility as oversight of business continuity plans. Indeed, when a SIB approaches insolvency, the board's fiduciary duty becomes one of maximizing the bankruptcy estate that can be passed on to creditors.[17] If the board finds the plan is excessively complex or time consuming, it has a duty to require management to simplify the corporate structure of the firm, invest in more powerful IT systems or reduce the scope of its activities so that it can be resolved in a reasonable amount of time.[18] This process may also have a useful side benefit. Considerable research in cognitive psychology shows that decision-makers are likely to be more risk averse when they are forced to confront worst case scenarios even if they consider them unlikely to happen.[19]

Next, the primary supervisor[20] must evaluate the resolution plan in cooperation with both any other domestic supervisors of businesses in which the firm may be active and, if the SIB has substantial cross-border operations, the international college of supervisors (or crisis management group) established for each G-SIB. This group must certify that the plan is feasible, and the estimated time for the resolution is plausible and acceptable. In addition, it must ensure that all systemically important activities have been identified and properly insulated, so that they could be spun-off to another firm in the event of insolvency (Hüpkes, 2005). If the primary supervisor or the college of supervisors finds the plan is not feasible or would take an unacceptable amount of time to execute, it should have the power to compel the SIB (or G-SIB) to propose alternative options.

The SIB might propose alternatives such as simplifying its corporate structure, improving its IT infrastructure, spinning off activities, or placing a line of business in an affiliate with no financial connections to any other affiliates and financed completely by equity.[21] The supervisory authorities,

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[17] The absence of a credible plan would be presumptive evidence of a failure to carry out this fiduciary duty.

[18] Precisely what is 'a reasonable amount of time' will likely change as the approach is implemented. The ultimate goal ought to be a plan that can be implemented over a weekend, but earlier iterations will clearly take much longer. Some have advocated the need for a twilight ('cotton wool') period between intervention and the decision to start liquidation to allow resolution to proceed more smoothly.

[19] See Guttentag and Herring (1984) and the references cited therein.

[20] In countries with a unified regulatory system, this is clear. In others, like the United States, it may not be unless the entity is a Bank Holding Company or a Financial Services Holding Company. Clearly this is one of the first problems to be resolved if there is ambiguity about who has overall responsibility for an institution -- e.g. AIG -- or whether the primary supervisor is competent to carry out its duties -- e.g. Lehman Brothers.

[21] One might question how these equity investments should be treated in computing consolidated minimum capital requirements. The equity investment should count fully because the purpose of imposing the equity requirement on these bits of the infrastructure, including the systemically

however, must have substantially greater resources than they currently do, and the power to compel action if the SIB does not propose an acceptable alternative. If they lack such power, no meaningful action is likely to be taken, and the entire exercise will become a senseless and costly ticking of boxes. It may even prove counterproductive to the extent that it encourages market participants to believe that a problem has been solved when in fact it has not. The temptation to cut corners will be intense because the process will be enormously costly for both SIBs and the authorities. Yet these costs will surely be small relative to the very large support provided by American and European governments to prop up their financial systems during the crisis.

Since many financial firms have become much too complex to take through any kind of resolution procedure in a reasonable amount of time, it seems naive to expect these firms to give up willingly the complexity[22] that virtually assures them access to subsidies from a safety net, and thus competitive advantage over other smaller, less complex institutions. For example, Citi (which has a habit of stumbling into a crisis every ten years or so) has $2 trillion in assets, is active in more than 160 countries, with 2,435 majority-owned subsidiaries, participating in 550 clearance and settlement systems. Its current structure defies any plausible orderly resolution process. To be credible, the process of resolution planning must produce demonstrable improvements in the resolvability of such institutions.

Alternatively, Andrew Kuritzkes (2010) has suggested that a periodic tax of $1 million be levied on each subsidiary of a SIFI. The tax would be deferred for five years, with the first collection in 2016 to incentivize firms to simplify their legal structures. The tax would be collected at five-year intervals thereafter. Based on current legal structures, the costs to international financial conglomerates would be significant, ranging from $134 million to $2.6 billion for the top thirty financial conglomerates. The tax could be justified by the negative externalities associated with cross-border activity, legal complexity, and regulatory forum shopping. Others have suggested that capital requirements be calibrated to create similar incentives to simplify corporate structures, but capital requirements are already burdened with a number of objectives and have proven remarkably ineffectual in deterring risk-taking (IMF (2009, Ch. 3, p. 7)).

Imposing constraints on the size or structure of firms has traditionally been justified solely on grounds of competition policy, not as a way of enhancing financial stability. But what was once unthinkable is now being widely discussed. Governor of the Bank of England, Mervyn King (2009), former Governor of the Federal Reserve Board, Alan Greenspan (McKee and Lanman, 2009) and former Secretary of State and Treasury, George Shultz (2008) have all said, in effect, "Any bank that is too big to fail is simply too big." Perhaps, most surprisingly, Jamie Dimon (Sender, 2009), CEO of JP Morgan Chase, has endorsed a resolution mechanism that would wipe out shareholders and impose losses on creditors but protect the financial system when a SIB fails: "We think everything should be allowed to fail... but we need a resolution mechanism so that the system isn't destroyed. To dismantle a bank in a way that doesn't damage the system should be doable. It's better than being too big to fail."[23]

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important pieces, is to make them easy to detach from the failing institution. They should be relatively easy to sell because they are often systemically important parts of the infrastructure.

[22] See DeYoung, Kowalik and Reidhill (2011) for a theoretical analysis of how the inability of the resolution authority to make a credible commitment to close a complex, insolvent bank creates an incentive for banks to become still more complex.

[23] The EU has a mechanism for taking account of competition policy in the case of a failing SIFI that receives state support. Former European Commissioner for Competition Neelie Kroes has required that Commerzbank, ING, the Royal Bank of Scotland, and Lloyds downsize to compensate for the

During the process of evaluating resolution plans, the primary supervisor and the international college of supervisors[24] will gain an understanding of the regulations and tax provisions that provide G-SIBs with incentives to adopt such complex corporate structures. Highlighting these unintended consequences of regulatory, accounting and tax reforms may influence reforms at least at the margin.

In addition, if a SIB is involved in more than one line of business, the supervisors who oversee each of the important lines of business should be required to simulate a resolution each year under varying stress conditions. In this process, each supervisor must develop modes of cooperation with the other supervisors involved or make clear its intention to ring-fence the SIB's operations within its domain. Unless supervisors within a single country can agree on how to resolve a domestic SIB, progress in the much more complex international arena seems unlikely.

The primary supervisor must also conduct a similar exercise with the international college of supervisors (or crisis resolution group) and simulate a resolution annually under varying stress conditions. This will have the same virtues as the domestic exercise, and here, too, the supervisors will need to develop modes of cooperation or make clear their intent to ring-fence the portion they control. This will enable the other key supervisors to anticipate what might happen and make appropriate preparations. Although these commitments will not be legally binding, the supervisor's personal integrity will be on the line, so there will be a strong incentive to be candid.

The potential benefits from developing resolution plans are substantial:

(1) The process should reduce moral hazard by making it clear to creditors and counterparties that a SIB can be resolved in such a way that it may impose losses on them without catastrophic consequences for the rest of the financial system. An indication that this might have a powerful effect can be inferred from Moody's reaction (Croft and Jenkins, 2009) to the "recovery and resolution plans" proposed in the U.K. It warned the British authorities that such an approach "would remove the necessity to support banks as banks would no longer be too interconnected or complex to fail. This could potentially result in rating downgrades where ratings currently incorporate a high degree of government support." Of course, this benefit will be realized only to the extent that market participants believe a workable resolution plan exists and will be used. Equally importantly, they must believe firms that are not required to have resolution plans will be excluded from bailouts.

(2) Gaining approval for the resolution plan will cause SIBs to simplify their corporate structures and make preparations so that less of the bankruptcy estate is consumed by a frantic, last-

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anti-competitive effects of the subsidies they have received. The EU Competition Commissioner can force banks to take a range of actions, including mandates to "sell billions of euros of assets, close branches, cut balance sheets drastically, restrict payments to investors, executives and staff, and focus more narrowly on retail banking" (Reuters, 2009). The United States lacks any mechanism for considering such issues except in the merger approval process (which is often given short shrift in the case of a shot-gun merger). And although the EU action is taken after the extension of a bailout, it seems preferable to the frequent U.S. pattern of subsidizing the merger of a very large bank with another even larger bank with scant regard for competitive effects. See further Dewatripont et al. (2010).

[24] If not actually integrated with the supervisory authority, the resolution authority should be represented at these discussions. They will have the greatest expertise regarding how to implement an ordinary resolution.

minute attempt to formulate and execute a resolution plan. These amounts can be quite substantial. The administrators of the Lehman bankruptcy (Cairns, 2009) have estimated that at least $75 billion was wasted because of the lack of any preparation for bankruptcy, and legal and administrative expenses have consumed another $1 billion of the bankruptcy estate by the first quarter of 2009 with no end in sight.

(3) Developing the plan may cause SIBSs to reduce their risk exposures because of greater awareness by the board of directors, more thorough analysis by supervisors, and greater discipline by creditors and counterparties.

(4) A credible resolution plan will help level the playing field between SIBs and smaller, less complex institutions so that profits and market share flow to institutions that provide the best services most efficiently rather than to institutions that benefit from the subsidy of an implicit guarantee.

Of course, resolution plans have both private and social costs in addition to the above benefits. Compliance costs will certainly increase significantly for SIBs (and for supervisors, making it all the more important to provide them with adequate resources). But some of the upgrades in IT systems required should enable firms to manage their businesses more effectively, as well as facilitate a resolution.[25] Resolution plans may also reduce the efficiency with which the SIB can deploy its capital and liquidity, but often these efficiencies have proven illusory in a crisis, when they are most needed. To the extent that capital and liquidity will be ring-fenced by regulators of other lines of the conglomerate's business (who believe their main duty is to protect the customers of that unit of the SIB in their regulatory domain), they will be unwilling (or perhaps legally unable) to upstream capital or liquidity to a faltering parent.[26] Finally, a resolution plan may increase capital requirements and tax payments and lower profits to the extent that corporate simplification requires the elimination of entities used to engage in regulatory arbitrage and tax avoidance.[27] But this is a private cost, not a social cost.

With regard to social costs, resolution plans could limit potential economies of scale and scope. But there is little evidence in the academic literature that economies of scale and scope outweigh the diseconomies of scale and scope that have become evident in the recent crisis.[28] In any event, technology-intensive activities that involve heavy fixed costs and appear to offer genuine scale

[25] In a private comment, Robert Eisenbeis has pointed out that just as the preparations for Y2K enabled a number of banks to deal more effectively with the shock of 9/11, this improvement in IT systems may have unexpected benefits.

[26] In this sense, the Basel Committee's long-time emphasis on consolidated regulation of minimum capital requirements may be deeply misleading. Similarly, the ratings agencies clearly misjudged the ability of AIG to upstream excess capital from their multiple insurance businesses to aid the holding company or a faltering affiliate.

[27] This is undoubtedly one of the major reasons that SIBs have 2.5 times more subsidiaries than non-financial corporations of comparable size. Moreover, SIBs have located a substantially higher proportion of their subsidiaries in tax and regulatory havens (Herring and Carmassi, 2010).

[28] See, for example, Berger and Mester (1997). Although there are numerous empirical studies that attempt to quantify economies of scale, all suffer from the paucity of relevant data. This is, of course, particularly true for enormous banks. But it does seem clear that scale economies cannot be the main driving force behind the creation of trillion dollar banks. A more robust and perhaps more relevant empirical regularity is that the compensation of senior executives tends to increase proportionately with scale (Frydman and Saks, 2007).

economies in some lines of business can be ring-fenced and operated as separate units. These could be reorganized as industry utilities from which firms of all sizes could benefit. This would be much like the evolution of automated teller machines, which are now a shared network, but began as proprietary systems. By reducing leverage, resolution plans may increase the costs of intermediation. But since excessive leverage is heavily implicated as a cause of the recent crisis, this may actually be a social benefit rather than a cost.

Once the rapid resolution plan is in place, creditors are more likely to reinforce supervisory discipline with market discipline and the authorities should be able to act much more quickly and effectively should resolution become necessary. This is an important advantage because delays in resolution increase the risk of systemic spillovers. Depositors and other short-term creditors and counterparties may lose access to their funds. Viable borrowers may lose access to their collateral and undrawn credit lines and the lack of clarity regarding positions vis-à-vis the insolvent financial institution may transmit problems to counterparties, who will be unable to hedge their exposures effectively because they will not know the amount of loss or the timing. This is quite likely to give rise to dislocations in wholesale markets as traders attempt to assess ultimate damage to counterparties.

5. Concluding Comment: Open Questions Regarding Implementation of Dodd-Frank Rapid Resolution Plans

1. Will the regulatory agencies continue to prefer to subsidize mergers as a means of resolving SIBs even though it increases the size of already large institutions and increases their complexity? In part, the rapid resolution plan is meant to counter this all too typical, often panicky response. Rapid resolution plans must be prepared on the assumption of no "extraordinary governmental support" to the group or its subsidiaries.

2. How will SIBs ultimately be defined in the U.S.? The current definition seems too broad. Most $50 billion banks are not likely to be systemic and so it is a needless burden[29] and waste of supervisory resources to force them to create full-blown resolution plans. The FDIC interim final rule for large insured depository institutions indicates that the agency will administer the requirement for large banks flexibly -- implying that, other things being equal, smaller banks above the $50 billion statutory threshold will face less stringent requirements than the largest banks.

3. The Financial Services Oversight Council (FSOC) is a large, unwieldy body. Can agencies, which have a long history of engaging in turf battles, sustain sufficient cooperation to promote financial stability?

4. The sequence of triggers to declare a nonbank SIFI eligible for resolution under Title II of the Dodd-Frank Act seems potentially quite cumbersome and difficult to implement with sufficient speed. The team of designated federal agencies along with the FSOC must recommend receivership to the Secretary of the Treasury, who, after consultation with the President, may recommend that the firm be placed in receivership based on a number of findings. The consent of the board of the firm will be required (which is inherently awkward because they will automatically be fired) and if the board does not consent, the case will be subject to a 24 hour review in D.C. District Court. Would this process have worked in the case of AIG without creating significant spillover effects?

5. What will be the intervention point for non-bank SIFIs? The phrase “has incurred, or is likely to incur, losses that will deplete all or substantially all of its capital, and there is no reasonable

[29] The original NPR estimated the burden of preparing the initial report is an average 10,000 hours.

prospect for the company to avoid such depletion" seems unnecessarily vague and an open invitation to litigation and delay. It lacks the clarity of the FDICIA standard and it almost assures that intervention will occur too late to protect creditors. This is a serious defect because the larger the losses to be allocated, the more difficult the resolution or bankruptcy process is likely to be.

6. Is the treatment of qualified financial contracts appropriate? Is the safe harbor too broad? Should the resolution agency have more than one day to sort through the contracts it wishes to transfer to a bridge bank or other solvent entity? Should the resolution agency have the power to close-out contracts that are in the money?

7. Is it efficient to require SIBs to prepare rapid resolution plans assuming that the U.S. Bankruptcy Code will be used, while at the same time the FDIC will be preparing a separate resolution plan that might be used under the Title II "Orderly Liquidation Authority" of the Dodd Frank Act?

8. Will the authorities have the courage and clout to demand that large, complex financial institutions divest subsidiaries or reorganize themselves into more transparent, easier to resolve units? For example, the Lehman Brothers group, by no means one of the largest or most complex financial institutions, consisted of 2,985 legal entities that operated in 50 countries linked by inter-affiliate financial transactions and operational interdependencies. Indeed, the lead lawyer in the bankruptcy filing has asserted that most Lehman employees were unaware of which legal entity was their official employer. If such complexity is permitted to continue, can any rapid resolution plan be deemed credible?

9. The Dodd-Frank legislation largely ignores the shadow banking system, yet surely one of the predictable consequences of placing greater regulatory burdens on banks is that more business will shift into the shadow banking system. How will this tendency be countered?

10. What are the legitimate confidentiality concerns that need to be honored regarding disclosure of rapid resolution plans? The fact that all institutions of a particular size, centrality or complexity are required to prepare them should remove the stigma of announcing that such plans exist. But is there any legitimate public purpose served in maintaining an institution's corporate structure as proprietary information that should be withheld from an institution's shareholders and the broader public? The FDIC has defined a public section that consists of an "executive summary" of the resolution plan that describes the business of the covered company or insured depository institution. Most of this information is already in the public domain. What is new is a "high level" description of the entity's resolution strategy, including items such as the range of potential purchasers of the institutions and its material entities and core business lines. All other information -- including the current corporate structure of the group -- will remain confidential. To what extent will securities regulators regard details of a rapid resolution plan as information that must be disclosed to public markets?

11. The rationale for rapid resolution plans is to increase market discipline on SIBs by making it clear to all market participants that credible plans exist to resolve any large, complex financial institution without creating intolerable spillovers. Moreover, the very act of creating and approving a rapid resolution plan should enhance the ability of both institutions and regulatory authorities to deal with a crisis. What are the most likely unintended consequences?

Will requirements for preparing and maintaining rapid resolution plans become excessively complex and cumbersome?

- Will overly prescriptive rapid resolution plans impede the ability of regulators and SIFIs to respond flexibly to an unexpected crisis?

- Are there social gains to complex corporate structures that are not aligned with business structures? Do these outweigh the obvious increase in systemic risk?
- Many subsidiaries exist in tax or regulatory havens (Herring and Carmassi, 2012). While the private benefits of such corporate structures are obvious, is there an important social benefit to permitting such complex structures?
- Some countries require that foreign firms enter as subsidiaries rather than as branches. Does this complicate or simplify the resolution process?
- Are there substantial economies of scale and scope that outweigh the diseconomies of scale and scope that were evident in the most recent crisis?
- Will emphasis on ease of resolution diminish the ability of firms to manage risk, capital and liquidity centrally? Will such structures reduce the flexibility of firms to net positions internally and deal with crises -- or is such flexibility a delusion because important countries will ring-fence various parts of the firm when flexibility is needed most?

12. The Dodd Frank Act stops at the water's edge, but G-SIBs are global in scope. (The exception is with regard to foreign entities with a U.S. presence, which will be covered if their U.S. assets reach the $50 billion threshold.)[30]

Of course, rapid recovery plans are not a panacea. It is much better to resolve problems before they reach the stage at which resolution decisions must be taken. Several other tools including contingent capital obligations (CoCos), strengthened capital requirements and, possibly, heightened supervision may help achieve this end. But it is essential that policy-makers understand that, despite these steps, insolvencies will occur, and unless we wish to sustain a category of institutions that are too complex to fail (which kindles perverse incentives), it is essential to have credible rapid resolution plans. The absence of such tools, in fact, will undermine the effectiveness of many other efforts to prevent a crisis from occurring.

The common critique from trade associations is that supervisors should not oblige banks to manage for failure rather than for success. This ignores the fact that rapid recovery plans represent one end of a very broad spectrum of regulatory and supervisory measures. It is a bit disingenuous in the wake of the crisis of 2007-2009 to maintain that it is unnecessary to consider a state of the world in which resolution decisions are necessary. Doubtless, many institutions would prefer to maintain the free option of receiving large subsidies in the event of a crisis. They are, after all, better off shifting these potential costs to others, but this is surely not a sound foundation for public policy.

[30] The FDIC has worked with the Bank of England (FDIC and Bank of England (2012)) to propose a Single Point of Entry Model for resolving G-SIBs. It is a bold first step, but requires a holding company structure with most of the capital cushion held at the holding company level.

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