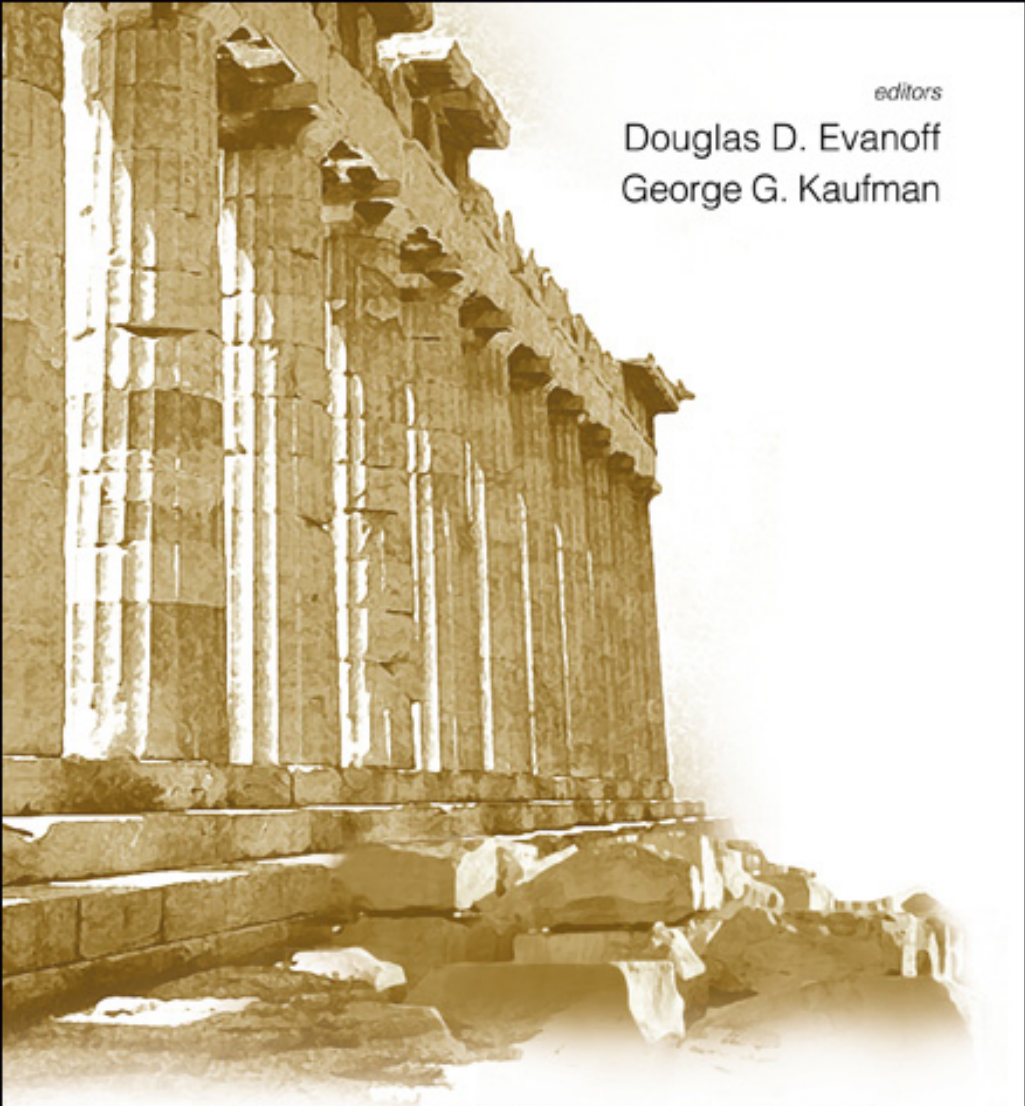

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Resolving Large Bank Insolvencies

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editors

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Preface

This is the seventh annual international conference either sponsored by the Federal Reserve Bank of Chicago or cosponsored by it with an official international organization, such as the International Monetary Fund, the World Bank, and the Bank for International Settlements. It was held on September 30–October 1, 2004. As for previous conferences, it was held at the Federal Reserve Bank in Chicago. The conferences have been truly international as reflected in the wide array of country affiliations of both program participants and audience members. This year, the 150 policymaker, industry, and academic attendees represented more than 25 countries.

As in the past, the conference topic was selected to be an important current financial issue of concern in many countries. This year, it was "resolving large bank insolvencies." Bank failures like illness, death and taxes, are almost a certainty at some time in our future. What is less certain is their cost to and adverse implications for macroeconomies. Past failures have frequently been resolved only at very high cost to society, but they need not be. As with many things, the cost could be reduced through planning ahead in the good times and having a well-developed, credible, and widely publicized plan ready to put into action by policymakers when the need arises. The plan should be widely publicized in advance so that both banks and their customers, as well as regulators, can take it into account in their planning and behavior and that it is not a surprise that is likely to upset people who can then claim that they were treated unfairly.

If no such plan is ready when a large bank approaches insolvency, political pressures are likely to influence the response of regulators. Minimizing immediate, short-run costs are likely to outweigh minimizing further out, longer-run and longer-lasting costs, even if these delayed costs promise to

be substantially greater. Stated differently, today will win out over tomorrow and politics will trump economics.

How best to prevent such unfavorable outcomes was the major topic of this conference. The papers presented review past insolvency resolutions, draw lessons from these resolutions, discuss impediments to efficient resolutions, including cross-country, cross-regulator, and institutional challenges, and recommend how to move forward. The authors are truly experts in their respective areas and express the experiences and views of a large number and variety of countries. It is in the interest of bringing this information to a wider audience and thus encouraging a broader response to the problem that these papers are published in this volume.

Douglas D. Evanoff
George G. Kaufman

Contents

Keynote Addresses

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Being a Responsible Host: Supervising Foreign-Owned Banks

Alan Bollard*
Reserve Bank of New Zealand

This speech addresses a theme that has received increasing attention internationally and at the Reserve Bank of New Zealand of late — the issue of how a host supervisory authority can most effectively maintain a sound banking system and respond to bank failures when the system is dominated by foreign-owned banks.

For any country, the stability of the financial system is critical to a healthy economy — a point that becomes dramatically apparent when systemically important banks fail. This is equally true for a financial system dominated by foreign-owned banks as for one composed mainly of domestically owned banks. In either case, the supervisory authority and central bank — whether home or host — must ensure that they have the capacity to maintain a robust financial system and to respond quickly and effectively to any financial crisis — often within hours. This is a challenge for any supervisor, but it is all the more complicated when it is a foreign-owned bank that gets into difficulty, given different jurisdictions, potentially different statutory objectives between home and host authorities, and a greater degree of jurisdictional separation between taxpayers and depositors than is the case with domestically owned banks.

In a world of increasing global and regional integration, the difficulties faced by a host supervisory authority is an issue of growing importance for many countries throughout the world. My counterparts in Central and Eastern Europe, Scandinavia, and Latin America will readily relate to this theme, given that they also face increasing foreign-bank participation in their financial systems. The challenge, therefore, is to ensure that home and host authorities respond to these changes in ways that enhance the stability

of both of their financial systems, while continuing to derive the benefits that cross-border banking can provide.

1. New Zealand's Banking System is Dominated by Foreign Banks

The Reserve Bank of New Zealand — New Zealand's banking supervision authority — is well practiced at being a host supervisory authority. Our banking system has been dominated by foreign-owned banks for over a decade now. Few, if any, countries have a banking system as foreign-dominated as ours. Let me quote some statistics to illustrate the point.

- All but two of the 16 registered banks in New Zealand are foreign-owned.
- All of the four systemically important banks in New Zealand are Australian owned — holding around 85 percent of banking system assets.
- The four large banks dominate the banking system, with individual market shares ranging from around 15 percent to 35 percent of banking system assets.

Overall, the strong presence of foreign banks has brought many benefits to New Zealand in terms of both soundness and efficiency. It has enhanced risk-management capacity within the banking system, facilitated the entry of new banking products and services, and reduced the financial system's vulnerability to domestic economic shocks.

Against these benefits, of course, there are also risks associated with such strong dominance by foreign banks. The New Zealand financial system is exposed to contagion risk from the parent banking systems — all the more so given the strong industry concentration and the dominant position of banks from just one country. Extensive foreign bank participation in the banking system can also complicate the supervision of banks in the host financial system — particularly if core functionality is outsourced to parent banks. It also complicates the process for dealing with bank crises in ways that adequately meet the needs of the host financial system.

In order to maintain a sound financial system when most of the banks are foreign owned, robust host supervision arrangements are essential; so too are structures for coordinating home and host supervision. But, as I will shortly explain, the coordination of home and host supervisory

arrangements in ways that meet the needs of both countries is both complicated and challenging.

2. Differences in the Interests of Home and Host Supervisors

One of the important issues arising from a banking system dominated by foreign banks is the relationship between the home and host supervisory agencies and central banks. Home and host countries undertake their banking supervision roles and responsibilities within the framework of home–host supervision set out in the Basel Concordat — the internationally agreed framework for the supervision by national authorities of multinational banks. The Concordat emphasizes the general responsibility of home-country authorities to supervise banks' worldwide consolidated activities, as well as the host-country responsibility to supervise foreign-bank establishments in their territories as individual institutions. The Concordat, and its subsequent elaborations, have a strong emphasis on the need for adequate exchange of information, but have not — to date — sought to establish an international framework for the cross-border coordination of interventions responding to bank distress. It will not be easy to establish such a framework.

A host financial system derives benefit from the home supervision of the parent banks. This provides some assurance to the host supervisor that the parent bank's and consolidated group's soundness comes under regular scrutiny by the home authority, including in respect of capital adequacy, risk positions, risk management systems, governance arrangements, and parent oversight of foreign subsidiaries and branches. Equally, the home supervisor benefits from effective supervisory and bank governance arrangements in the host country — especially when the home country's banks have substantial foreign operations.

In New Zealand, we openly acknowledge the benefit that our financial system derives from the role played by the Australian and other regulatory authorities in this regard. However, this does not cause us to be complacent or to place excessive reliance on the home supervisory authorities. We are well aware that, although home and host supervisory authorities and central banks have broadly complementary interests, they can also have divergences — and even conflicts — of interests in some key respects. Indeed, the areas of potential divergence or conflict are likely to become most apparent when the stakes are at their highest — in a bank distress situation.

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The potential divergences and conflicts can arise in a number of ways. For example:

Home and host authorities may have different statutory objectives to meet in the exercise of their supervisory responsibilities. In some countries, depositor protection is a primary goal of supervision. In other countries — such as New Zealand — the soundness and efficiency of the financial system is the primary goal. Such divergences can lead to significant differences in supervisory policies and in the strategy for responding to financial crises.

There can also be conflicts of interest between the home and host authorities in the allocation of capital and risks across a multinational banking group. The home authorities have an interest in retaining as much capital within the home jurisdiction, and particularly within the parent bank, as possible. Conversely, the host authority would like to see a reasonable portion of the group's capital vested in the local subsidiary. A similar dichotomy of interest applies in respect of the spread of risk across the banking group. In times of stress, the allocation of capital and risk within the group can be crucial. Tensions between home and host authorities can quickly become apparent in those circumstances. This is especially so when the bank subsidiary is under-capitalized and the host authorities are requesting the parent bank to inject more capital. The situation is even more complicated when the bank in distress is a branch of a foreign bank.

The home and host authorities may also have different interests in deciding the response to a banking crisis. The home authorities' primary interest and (generally) their primary statutory duty is the maintenance of stability in the home financial system. They have no responsibilities for the stability of the host financial system. To the extent that they are interested in the stability of the host financial system, it is likely to relate to the possible impact on the parent bank's operations in that system and the likely flow-on effects to the home financial system. A host supervisor therefore cannot rely on the home supervisor to act in the interests of the host financial system. Similarly, host countries do not generally owe any formal duties to home countries or their supervisory authorities.

The home and host countries can have very different views on the choice of techniques for responding to bank distress. Clearly, the authorities in each country will have a menu of choices available, ranging from institutional bail-outs to liquidation, with intermediate options available in some circumstances. These choices have to be made on the basis of an assessment of the costs and benefits of alternative approaches within each market, and there

can be no assurance that different countries will — or should — necessarily come to the same conclusion.

Moreover, home and host authorities may have quite different perceptions of when a crisis is systemic. The failure of a bank operating in the home and host countries may represent a major systemic crisis or a threat to the reputation of the financial system in the host country, while being of relatively minor significance in the home country — or vice versa. In the former case, the host authorities would therefore attach great importance to a quick and effective resolution of the crisis, while the home authorities may be less concerned. Again, this could impede the ability to implement a coordinated response to the crisis.

These matters are not straightforward when there is a largely bilateral relationship between home and host countries, of the kind faced by New Zealand. Matters become even more complicated when a parent bank has many operations in different countries. In these circumstances, the prospect of a large number of supervisors being able to agree on coordinated action within a short time-frame is not good. The international record tends to show that supervisors have effectively been placed in a position where they have had to act on their own judgment, in the light of their own particular circumstances, when complex cross-border bank insolvencies have occurred.

3. The Need for Robust Host Supervision Arrangements

For these reasons, and in the absence of any fair and formalized, operationally and legally robust, international framework, we at the Reserve Bank of New Zealand think it would be very imprudent for a host authority to rely on the home authority to protect the host financial system. This does not mean that we are not still considering the issues with an open mind. But at this point, we need to continue to place importance on our ability to supervise the New Zealand banking system and to respond to a banking crisis in ways that enable us to protect New Zealand's interests without placing undue reliance on the actions of the home authorities. That said, we also recognize that the most effective response to a cross-border crisis would desirably involve close cooperation and coordination between the home and host authorities.

We are therefore actively working towards the implementation of enhanced home/host supervisory and crisis response arrangements, while still retaining a strong capacity to independently manage a banking crisis.

Our dual aims are to maintain the capacity to protect the New Zealand financial system on a stand-alone basis, while also building the framework for closer coordination between the host and home authorities. Let me highlight the key features of both aspects of this approach.

Our supervisory tools are similar to those of a home supervisor. While we have adopted a somewhat less intrusive approach than some supervisors, we require all banks, whether foreign-owned or domestically owned, to comply with the same basic requirements, including in respect of minimum capital adequacy, related party exposure limits, comprehensive public disclosure requirements, governance requirements, and so forth. We monitor all banks on a regular basis and consult with the senior management teams of each bank annually, again, regardless of whether they are foreign-owned or domestically owned. We also take a close interest in the parent banks of the systemically important banks in New Zealand, including monitoring their financial condition and meeting with their senior management teams.

In all of these areas, we have sought to dovetail our supervisory arrangements with those of the home supervisors — particularly Australia — in order to keep banks' compliance costs relatively low and to avoid excessive operational inefficiencies for banks. We are a welcoming, but responsible, host. This approach is reflected in a range of areas, including in the approach we have taken to the prudential requirements for banks and in the way we monitor and assess banks. Looking forward, we see scope for further dovetailing of this nature in the context of closer coordination between the New Zealand and Australian authorities.

However, the dominance of foreign banks in the New Zealand banking system has resulted in some additional supervisory measures being taken to ensure that the interests of the New Zealand financial system can be protected. By and large, these policies are common to many countries, particularly countries with substantial foreign bank participation. In New Zealand, they form a key part of being a responsible host supervisor. I would like to highlight two of our most recent requirements:

- That all systemically important banks be incorporated in New Zealand; and
- That foreign-owned banks in New Zealand are not overly reliant on parent bank or other outsourced functionality.

Like many supervisors, we require all systemically important banks to be incorporated in New Zealand, rather than operate as a branch of a

foreign bank. Currently, all but one of the systemically important banks in New Zealand are locally incorporated. We are working with the other bank to determine how it can meet our requirements.

The local incorporation policy has three main objectives.

First, local incorporation is an important element of being able to respond to a financial crisis effectively in New Zealand's interests. It provides a significantly higher degree of certainty over the balance sheet of a bank in New Zealand, enabling a statutory manager to assume control of a failed or distressed bank with greater certainty over legal jurisdiction than would be the case with a branch.

Second, local incorporation enhances the Reserve Bank's ability to supervise the banks on an ongoing basis in the interests of the New Zealand financial system. It enables the imposition of minimum capital adequacy requirements and risk limits, and provides a degree of separation between the subsidiary and the parent, thereby reducing intra-group contagion risk. Not least, local incorporation makes it much more difficult, legally and practically, for assets to be removed from the local operation to the parent bank; any such transaction must be for good value. This is not the case for a branch.

Third, local incorporation establishes a basis for sound bank governance in the host country, including a board of directors with a responsibility to act in the interests of the local bank. This is particularly important in New Zealand, given the strong emphasis we place on the role of corporate governance as the foundation for effective risk management. In our supervision framework, we stress the need for the local board of directors to take ultimate responsibility for overseeing the management of the bank, including its risk management capacity. Of course, we also recognize that, subject to complying with the laws and regulations of the country in question, the parent bank has the right to determine the strategic direction and overall management of its foreign operations — in New Zealand and elsewhere. But we wish to ensure that, within this overall constraint, the local board has much more than a rubber-stamping role.

Another important policy requirement that we are developing to protect the New Zealand financial system relates to the growing practice of outsourcing core bank functionality. Here, I am referring to the tendency for foreign-owned banks to move large parts of their functionality to the parent bank or to third parties — which are often in another country. In New Zealand, this has been occurring on a significant scale. And it has not just been confined to the obvious areas, such as technology systems, accounting functions, and the like. Outsourcing to the parent banks has also included

the movement of risk-management capacity, some treasury functions, and some senior- and mid-level management and technical expertise.

Outsourcing makes it more difficult to supervise a bank effectively on an ongoing basis. This is especially so where core risk-management functionality has been migrated offshore. In these circumstances, there is a limit to what any supervisor can achieve in seeking to promote sound risk-management structures within the local bank. It also has the potential to weaken the role of the local board, thereby compromising the ability to ensure that governance arrangements are adequate to protect the interests of the local bank.

But when the storm clouds gather, the effect of outsourcing can be very serious for a host banking system. In a situation where a parent bank is in acute difficulty, it is likely that its foreign operations will also be in difficulty. If the parent bank is unable or unwilling to provide financial support to the subsidiary, and if the home authorities are unable or unwilling to extend official support to the foreign subsidiaries of the parent bank, then the host authority needs to have sufficient functionality in the bank in its jurisdiction to maintain systemically important functions.

A bank that relies substantially on outsourced services to its parent, or on inadequately outsourced arrangements to unrelated third parties, will not have that capacity. It will be substantially dependent on the outsource provider in order to maintain even quite basic functions. In a situation where the outsource provider is in serious strife, there is no guarantee that the bank will be able to maintain essential functions. In this situation, the host authority has limited scope to manage the crisis in its own jurisdiction.

For these reasons, and in accordance with our legislation, we have initiated an outsourcing policy for application to all systemically important banks and potentially to some of the other banks. In essence, the policy will require banks to maintain sufficient functionality within the jurisdictional reach of its board of directors — and of a statutory manager if the bank has failed — to enable the bank to maintain all essential functions if the parent bank, or any other service provider, fails. We have no difficulty with outsourcing, provided that it is done properly and prudently, and that it meets our required outcomes. We must have the capacity to manage a bank distress or failure in ways that minimize damage to the New Zealand financial system.

Managing financial crises. As with any supervisory authority and central bank, the Reserve Bank of New Zealand attaches great importance to the ongoing preparedness to respond to a financial crisis. We have a broad

range of measures in place and under development to ensure that we have the capacity to resolve a banking crisis in ways that maintain a robust financial system, preserve market disciplines, and minimize moral hazard risks. In this regard, our statutory duty is to protect the soundness and efficiency of the New Zealand financial system, rather then seeking to protect particular institutions or depositors.

The tools required by a host supervisor to respond effectively to a banking crisis are much the same as those required by a home supervisor. However, in the case of a host supervisor, two elements are worth emphasizing:

- First, there is a need for clear legal and operational capacity to assume control of, and to maintain operational capacity within, banks that are in acute distress or insolvent.
- Second, there is a need for balance-sheet certainty for banks operating in the host country.

As I outlined earlier, our supervisory policies are intended to deliver these outcomes.

I wish to make particular reference to one aspect of our crisis management work — the development of what we currently call "bank creditor recapitalization". This is a mechanism that would enable the Reserve Bank to respond to a bank failure — including the failure of a systemically important settlement bank — in a manner that avoids or minimizes the cost to the taxpayer, while still maintaining systemic stability. It comprises a number of elements, including:

- Applying a "haircut" to depositors and other creditors of the failed bank at a level assessed to be sufficient to absorb likely losses;
- Giving depositors access to the non-haircut portion of their deposits within a very short period of the failure occurring, but providing a government guarantee of those deposits so as to encourage depositors to keep their funds at the bank; and
- Facilitating either the recapitalization of the bank or some other resolution option that is consistent with maintaining a sound financial system.

While we are still developing the concept, we see this failure management structure as an important potential option for meeting systemic stability objectives, while preserving — indeed enhancing — market disciplines.

4. Enhanced Cooperation and Coordination Between Home and Host Authorities

Although these measures are all essential, we are mindful that a banking crisis in a largely foreign-owned banking system should preferably include coordination between the home and host supervisors and central banks. This is most likely to occur when there is a well-developed relationship of cooperation between the parent and host authorities — in good times and bad, in sickness and in health.

We are therefore now developing our thinking, and building on the existing relationships we have with the supervisor and central bank in Australia, as to the arrangements required to ensure that there is effective coordination between home and host authorities, both in the day-to-day supervisory process and, especially, in periods of financial distress. We want to ensure that there is a clear understanding between the banking supervisors, the central banks and the finance ministries of both countries as to their respective roles and responsibilities. We want to explore the scope for more defined and potentially more formalized cooperation and coordination so that both sides are better placed to supervise their respective financial systems more efficiently and effectively. And we want to have well-designed structures for responding swiftly and effectively to cross-border financial crises in ways that recognize the respective roles of the relevant government agencies in each country.

What would be the key elements in these arrangements? Ideally, they would include a number of attributes, such as:

- Closer cooperation between the home and host authorities in the design and implementation of supervision policy, possibly including areas of policy harmonization and mutual recognition. The implementation of Basel II provides a good opportunity for this, as do a number of other supervisory policy areas. Indeed, the implementation of Basel II is perhaps the greatest "fair weather" challenge for cooperation and coordination between home and host regulators for many years. Striking a balance between the consistent adoption of Basel II methodology, while retaining the ability to set capital requirements that reflect each country's risks, is essential. This is not to mention the challenges arising from the more regulatory intensive nature of some elements of the Basel II requirements.

- Improved coordination of on-site and off-site supervision in some areas, including the regular candid exchange of information on banks operating in each other's jurisdictions.
- Agreement on the allocation of responsibility for the provision of liquidity support between the home and host central banks in defined circumstances.
- Formal understandings on the respective roles of the home and host supervisors, central banks, and finance ministries in responding to a cross-border bank failure, including protocols for determining when and how a joint home/host bank resolution strategy could be used to resolve a cross-border crisis.
- Facilitating coordination of public communication between the home and host authorities in responding to cross-border financial crisis, where appropriate.

This framework for coordination and cooperation needs to be predetermined in order to be reliable. Memoranda of Understanding between home and host authorities can be useful, but they might not prove to be sufficiently reliable in a crisis situation. Indeed, most Memoranda of Understanding between home and host authorities tend to take a soft-edged approach to the respective obligations of the parties, creating too much uncertainty for them to be useful in a crisis.

Some form of formalized cooperation arrangement between the home and host authorities is therefore likely to be necessary. This needs to strike a balance between creating reasonable certainty of coordination in specified circumstances, while preserving the flexibility for each country's authorities to take independent steps to protect their own interests. It also needs to be structured in ways that recognize that bank ownership — and hence home country supervision — can change. There is therefore a need to avoid being locked into arrangements that might later prove to be unworkable or no longer appropriate. And there is a need for home/host arrangements to maintain a degree of internal consistency in the supervisory frameworks of the respective countries, so as to maintain clarity and to avoid conferring any competitive advantages or disadvantages on particular categories of banks. Creating the right balance in all of this is no easy task.

Even if formalized coordination frameworks can be developed, their utility ultimately depends on how effective they are in a crisis. Rather than wait for a financial crisis to occur to see if the coordination arrangements

work, it would be better to periodically test their effectiveness. Although no form of testing can ever fully simulate a real crisis and the tensions that go with it, we think that periodic crisis simulation exercises involving home and host supervisors, central banks and finance ministries will become an important mechanism in testing coordination arrangements. They could also make a material contribution towards building closer and more cooperative relationships between home and host authorities and central banks.

5. Conclusion

Maintaining a sound and efficient financial system and being able to respond to a crisis effectively is a crucial prerequisite for a country's economic and social welfare. This is true whether the financial system is largely composed of domestic banks or dominated by foreign banks. And it is critical in a small, open, indebted, economy, such as New Zealand's, given the potential vulnerability to international sentiment and cross-border capital flows.

In the absence of any fair and formalized, operationally and legally robust, trans-national regulatory framework, the financial stability buck stops at national laws and the supervisor's and central bank's duties under those laws. The financial stability stakes are too high to pass on such a responsibility lightly. In banking, while the home and host authorities have some complementary interests, they also have areas of potentially diverging and conflicting interests, as well as jurisdictional limits.

The Reserve Bank of New Zealand is committed to doing all it can to maintain a sound and efficient financial system in New Zealand. We believe that it is essential to maintain the frameworks needed to fulfill our responsibilities. This includes a clear legal and practical basis to supervise the financial system and the capacity to respond to a financial crisis effectively on a stand-alone basis if necessary. Equally, we must have a clear legal basis for providing liquidity support when required, on the basis of bank balance sheets and capital positions that are as meaningful and clear as they can be in the circumstances.

But, we also recognize the benefits of mutual recognition and harmonization of regulatory policies where sensible, and the benefits of cooperation and coordination between the home and host supervisory authorities. The efficiency and effectiveness of our banking supervision will be greater,

and the crisis management options wider, the closer the home and host authorities are.

The Reserve Bank of New Zealand is committed to remaining a welcoming, albeit responsible, host. However, the regulatory risks and rewards have never been greater.

Alan Bollard is Governor of the Reserve Bank of New Zealand.

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Dealing with Stress at Large and Complex Financial Institutions

Andrew Crockett*
JP Morgan Chase International

1. Contemplating a Systemic Failure

Thinking about the consequences of a failure at a large banking institution is the financial equivalent of thinking the unthinkable. The disorderly failure of such an institution would be massively disruptive. The direct losses to shareholders, creditors, uninsured depositors, insurance funds and employees would be enormous. But they would be only the tip of a very large iceberg.

Large financial organizations, especially those with substantial banking activity, stand at the center of the payment system. The flow of transactions through such institutions on a daily basis is a large multiple of their capital. In the event of a sudden failure, all of these payments would be frozen, causing a huge erosion of liquidity in the system, and leading to failed payments for a wide range of transactions.

Parties exposed to these transactions would find their own solvency put at risk. Even where payments could subsequently be made, the delays would be enormously disruptive, and costly litigation would undoubtedly ensue. Other financial institutions would be afflicted with direct and indirect contagion. Fear and uncertainty would cause a withdrawal from credit exposures. It is not fanciful to imagine that all this would have a significant impact on economic activity in the short run, and could result in an impairment of financial intermediation for a protracted period.

A number of recent developments have, moreover, served to reinforce the systemic importance of large financial institutions. First, the biggest institutions have become even bigger, mainly as a result of ongoing

consolidation in the financial industry. In 1993, the largest five global banks had a combined market capitalization of some $105 billion. Ten years later, the comparable figure was approximately $800 billion.

Second, large and complex financial institutions (hereafter LCFIs) have become more interdependent through their operations in the capital markets. Developments in risk-management techniques require increasing reliance on derivative instruments, nearly all of which involve networks of multiple claims among financial institutions. Bank for International Settlements estimates suggest that the market value of derivatives contracts outstanding reached almost $7 trillion at the end of 2003, having more than doubled in the previous four years. (Notional outstandings are many times greater, but this is a misleading measure of gross exposures.)

Third, the technology of data gathering, processing, and transmitting has created additional vulnerabilities, and reinforced the importance of those institutions that are at the heart of the payment system. The events of September 11, 2001, showed how operational problems could ramify through the system. Such problems would also surface in the situation of an unanticipated default.

For all these reasons, reducing the possibility of the disruptive failure of an LCFI is a central preoccupation of public policy. The good news is that the likelihood of such an eventuality is remote. But this does not mean that preparations should not be made. And the bad news is that preparing is not easy.

There are basically two ways of ensuring that no large financial institution would ever have to be wound up. Neither is particularly attractive. One is to require LCFIs to carry such a large capital cushion as to virtually eliminate failure risk. This, however, would be to distort the risk-bearing propensities that would exist in a competitive system. The result would probably be to divert risk out of the banking system (or at least out of systemically significant banks) and into institutions that were not constrained in the same way. This would lead to inefficiencies, and, moreover, would not necessarily reduce risk in the system as a whole. For risk would simply migrate elsewhere and could be potentially just as troublesome. A clear example of the law of unintended consequences.

The second way of ensuring the survival of LCFIs would be to adopt a policy of "too-big-to-fail", in which governments would undertake to stand behind institutions whose failure would otherwise have systemic consequences. This, too, would severely distort the pricing of risk. If large institutions and their creditors and counterparties could act as though their

contractual relationships were protected by a governmental safety net, this would generate all the well-known problems of moral hazard. Credit risks would be mispriced, and the competitive climate would be weakened. Resource allocation would be distorted and ultimately economic performance would suffer.

The challenge to public policy, therefore, is to balance prudence with competitive freedom, and to measure the costs of moral hazard against the costs of systemic disruption. The aim must be to create an environment in which risk can be appropriately priced, yet the external consequences of the failure of an LCFI can be suitably limited and contained. How to do this involves judgments that can never be absolute.

I will distinguish three distinct aspects to such an approach in my remarks this evening. The first is the creation of a supervisory regime that encourages the accurate pricing of risk and the holding of an adequate cushion of capital. The second is the development of techniques to redress problems when a bank's financial position comes under strain. And third is the establishment of procedures for the orderly winding up of an institution when it can no longer function prudently.

2. Preventing Stress: The Role of Risk-Based Supervision

I will begin with prevention, and the role of supervision.

It is an axiom of financial supervision that all financial institutions should demonstrate a capacity to prudently monitor and manage the risks they incur, and hold adequate capital to protect themselves against unexpected losses. Within this broad general statement, however, there is plenty of room for judgment and interpretation. How does a bank demonstrate the capacity to appropriately manage its risks? How much capital is sufficient? How far should supervisors enter into risk monitoring activities at the institutions they supervise?

In approaching these questions, two considerations need to be borne in mind. First, well-informed market participants are usually better able to measure and manage risk than a supervisory agency. Financial intermediaries have the incentive and the specialized expertise to develop high quality risk monitoring systems. They also have strong incentives to develop efficient risk mitigation techniques, relying on diversification, collateralization, securitization, and hedging. The more they are encouraged to enhance their

own risk-management capabilities (as opposed to relying on supervisory rules) the better.

The second consideration is that the optimal failure risk is not zero. Any enterprise that adds value in a market-based system does so, in part, by accepting risk. Thus, even prudently managed companies may encounter circumstances in which they incur unexpected losses which, in extreme cases, may threaten their continued viability. The economy at large benefits by the freedom to develop new business models and processes, not all of which will turn out to be successful.

Starting from these two premises, the supervisor has two crucial functions. The first is to ensure that markets have sufficient information to judge the risks run by supervised financial institutions. Such transparency helps encourage better risk management and thus improves the pricing of risk. And the second is to require capital holding that strikes the right balance between the costs of failure and the cost of avoiding all failures. This allows the pricing of risk to take account of externalities that cause divergences between the social and private costs of bank failures.

It is easy to state these supervisory objectives in general terms, much more difficult to put them into practice. An immediate problem is that most market participants do not have sufficient information to form a judgment on banks' prudential policies. And even if they had the information, they are poorly placed to interpret it. Risk-management systems are complex and proprietary. It is hard for outsiders to judge how much confidence they can have in economic capital requirements calculated by banks. Even specialized intermediaries, such as rating agencies, do not yet have the data, the incentives, or the expertise to serve as effective watchdogs over banking prudence.

It may be more than a question of information and expertise, however. It is disheartening to observe how little market participants make use of additional information when banks seek to provide it.

The result is that bank supervision has to be more intrusive than might ideally be the case. Supervisors cannot rely solely on transparency and market forces to result in best practice risk management or the optimum level of capital holding. They must therefore seek other ways to satisfy themselves that risk-management systems are robust and that banks actually hold an adequate level of capital.

The recently concluded Basel II agreement (which will enter into force at the beginning of 2008) aims to do this in a way that is much more

risk-sensitive than its predecessor. Basel II has, as everyone in this audience will be aware, three pillars. The first is a minimum required level of capital. Capital requirements under Basel II, despite the complaints of some shrill observers, are, I believe, a great improvement over Basel I. There are many more risk categories, which allows more granular risk distinctions.

Moreover, banks are allowed to use their own internal risk ratings, subject to suitable safeguards. Certain credit risk mitigants are more appropriately recognized. And operational risk, a particularly important category of risk, is explicitly taken into account. All this represents valuable progress as compared with Basel I. We at JP Morgan have found that the capital requirement of Basel II will track our internal calculations of economic capital much more closely than did those of Basel I.

This is not to say, however, that the minimum capital calculation of Basel II is perfect, or that further evolution is not in store. There is scope to enlarge the use of banks' internal risk calculations. Looking further ahead these will become increasingly comprehensive as correlations among different categories of risk can be more reliably estimated.

The holy grail of risk measurement, still some years away, is the integration into a single model of all risks and their cross-correlations. In such a world, the calculation of value at risk and the associated capital requirement could be the responsibility of each supervised institution. The task of the supervisor would then be to verify the robustness of the model, and make any adjustment to capital to take account of the externalities that make the social costs of a bank failure exceed the private costs.

Some would go further than this and delegate even these supervisory tasks to market discipline. By using techniques such as precommitted capital and mandatory subordinated debt financing, the information available to the market, and the capacity of the market to convey useful signals, would be substantially improved. It is not part of my theme this evening to discuss these proposals. I will just say that I find them interesting and potentially fruitful, but unlikely to be of practical utility for several more years yet.

For the time being, supervisors will rely on pillars 2 and 3 of the new Basel accord to introduce into capital calculations the flexibility that ratios cannot provide. Pillar 2 provides for supervisory discretion, which I expect will be used to look at the adequacy of those aspects of risk management that cannot be captured by pillar 1's minimum ratios. These include the quality of management and internal information and control systems, as well as the degree of diversification or concentration in a bank's portfolio. This is a step

in the right direction — that of assessing the quality of systems, rather than adherence to specific ratios. Pillar 3 will advance the process of disclosing to the market the information needed to make informed risk judgments.

This brings me to the second aspect of the supervisors' task, which is to judge how much capital banks should hold against the risks they run. This is a matter of balancing the costs of bank failures against the costs of avoiding them. It is always possible to devise rules that mandate more capital and greater caution in lending. To push this too far, however, would vitiate the purpose of banking activity. The function of banks is to take considered well-judged risks. If banks are too cautious, they will fail to optimize their function as intermediaries between lenders and borrowers. Worse, they will lose business to less regulated intermediaries, who may operate in a riskier fashion.

Thus, supervisors will strive to reduce the risk of bank failure to the point where the losses that would occur over time as a result of periodic bank failures is approximately equal to the loss of intermediary efficiency that would occur by additional prudential requirements placed on banks.

It is not easy to articulate practical guidelines that help supervisors make this tradeoff. But two points are relevant. First, the social costs of the failure of a banking institution may be different from (and typically larger than) the private costs. The supervisor may therefore find it necessary to insist on a larger capital cushion than the management of at least some banks would otherwise hold.

Second, large banking institutions, which stand at the heart of the financial system, may have greater failure externalities than smaller banks. Thus, after normalizing for quality of risk management, it may well be justified to require large and complex financial institutions to hold more capital, relative to risk, than smaller institutions, whose failure would have fewer spillover consequences.

3. Dealing with Stress

I noted earlier that the optimum probability of bank failure is not zero. From time to time, even in a normally functioning system, banks will find themselves facing losses that erode their market standing. An important element of supervisory strategy is how to deal with such a situation. The objective is to either bring a bank back to health, or to secure its orderly exit, while minimizing moral hazard.

Two useful concepts in this regard have been developed and implemented in the United States. One is that of "prompt corrective action" and the other is the closely related one of "structured early intervention". (The distinction between the two concepts lies in the relative emphasis given to speed, incrementalism, and automaticity of responses.)

The concepts reflect the fact that it is generally less costly to begin the process of restoring a bank to health when it still has the confidence of its counterparties and a substantial remaining cushion of capital.

The reason is simple. Counterparties know that a bank's assets will be worth much less in a "fire sale" liquidation that they are to an ongoing business. If capital declines towards the point at which creditors and counterparties would face losses in a liquidation, they will naturally try to protect their interests by withdrawing exposures. This will precipitate the event they are trying to protect themselves against.

Of course, supervisory authorities are reluctant to take drastic (and costly) measures in a precipitate way. This is where the doctrine of prompt corrective action comes in. Bankruptcy risk can be guarded against through a process of graduated intervention, which becomes more intrusive the more the capital cushion is eroded. Such graduated intervention can begin well before a bank's capital falls to the regulatory minimum. Initial measures might include little more than intensified oversight. Thereafter, supervisors may place restraints on undertaking certain types of business, limits on balance-sheet expansion, requirements to divest certain types of assets, and so on.

This approach seems commonsensical. It makes supervisory intervention proportional to the perceived risk to customers and other stakeholders. And it avoids dramatic choices between closing a bank and allowing it to remain in business with inadequate capital. Still, it is not easy to implement, especially in circumstances where a bank still has capital above the regulatory minimum. It is important, therefore, that the legal framework that establishes supervisory responsibilities gives supervisors the right to pursue this kind of graduated intervention.

Moreover, a distinction needs to be drawn between smaller banks, a large part of whose resources are deposits protected by insurance, and larger institutions, which are active in capital markets and rely much more on wholesale funding. Smaller banks are less likely to face a funding crunch. For them, the graduated measures of structured intervention are likely to prove sufficient.

Larger banks, however, being reliant on wholesale funding, are much more vulnerable to a sudden erosion in confidence. This can occur as a result of unexpected reduction in profitability or in the wake of an event impacting reputation. If some of their funding arrangements have "triggers" that are activated as a result of a given rating downgrade, they may experience a sudden loss of resources when triggers occur.

Such institutions need to have plans to deal with a weakening in their market position before it gets to the stage of being franchise-threatening. Most large institutions have objectives for their credit rating. It is essential to maintain a margin above this rating, so as to provide time for corrective action before rating triggers take effect. It is also essential to have practical plans to restore capital and credit ratings after an adverse shock. This may include balance-sheet shrinkage or the sale of lines of business. The responsibility of supervisors is to make sure that such plans are in place, are sufficient to address the kinds of problems that can occur, and are activated in a timely way.

4. Managing the Failure of Banking Institutions

I turn finally to the question of managing a banking failure. I will not spend much time on how to deal with winding down a non-systemic banking institution. Such episodes can cause important problems for their customers and so for the communities they serve. But the failure of smaller institutions generally has limited spillover costs and is usually efficiently handled by insurance arrangements and/or by folding the business of the failed institution into that of a healthy partner.

The failure of a systemically important financial institution is another matter, however. Such events, by definition, have spillover costs that extend well beyond the customers of the institution in difficulty. When such a failure becomes a possibility, therefore, important issues of public policy arise.

The ideal solution is to arrange for a weakened institution to be recapitalized by its existing shareholders or to be voluntarily taken over by a healthy institution. However, once the stage is reached at which failure is a realistic possibility, it is likely to be hard to arrange such a private sector solution. In its absence, action by the public sector has to be considered. Such action can range from the provision of liquidity support, where a bank is solvent, to various forms of financial and nonfinancial assistance to run down a business in the least damaging way. Of course, public

intervention introduces the danger of moral hazard, so must be carefully handled.

It is not possible to prescribe in advance how the policy authorities should act. This depends too much on the particular circumstances. But it is possible to outline some of the obstacles to the smooth exit of a failing institution. This will, in a sense, define the public policy challenges in preparing financial systems to deal with this kind of threat.

A first obstacle in dealing with a financial crisis is lack of information. Both supervisors and potential rescuers from the private sector need to have information about a troubled entity in order to judge how to react. Such information can be separated into two types. One concerns the structure of the banking group, including the relationship between the various legal entities that comprise the group, their supervisory reporting lines, and legal responsibilities and constraints. The second concerns the group's financial position, including the current valuation of all contracts to which it is party. This may sound simple, but given the complexity of various trading and hedging strategies, may be very hard to assemble.

It is far from clear that all large financial institutions could produce the information that would be needed for outsiders to make judgments on how to value them in times of financial stress. It is also not clear whether supervisors have the authority to share all relevant information, either with private entities or even with other supervisors.

Under the auspices of the Financial Stability Forum, "fact books" have been assembled for most major institutions that give relevant information about group structure, legal relationships, internal reporting lines, and supervisory linkages. Such information would be a useful start if it became necessary to manage a wind-down process. But it is probably far short of what would be necessary to enable a potential private sector rescue to take place.

Another obstacle lies in the market dynamics that take over when the solvency of an institution is called into question. Even if rumors did not complicate matters (which they usually do) counterparties of a troubled institution will seek to protect themselves as soon as they become aware of difficulties. This they can do in a variety of ways, but nearly all of them involve increasing the cost of, and reducing the access to, funding by the institution under threat. This accelerates and compounds difficulties. Unfortunately, we have little idea of how market dynamics would play out in a real-life situation.

One or two privately sponsored exercises have attempted to simulate market dynamics, but nothing comprehensive or detailed has been undertaken by the official community. This is a shame. Such simulations, while incapable of predicting exactly how a crisis would unfold, can at least reveal crucial points of weakness in official responses. For example, responsible authorities may be prevented, by custom or statute, from undertaking certain actions that would preserve value or reduce contagion. Only by knowing such obstacles beforehand can action be taken to remove them or minimize their consequences.

A third obstacle is the divergence between the objectives of different authorities. At the most general level, there may be disagreement about the relative importance to be attached to maintaining systemic stability, as against avoiding moral hazard. There may also be a conflict created by differing bankruptcy regimes in different countries. In countries that apply the "multiple entity" regime, the assets of the branch of a foreign bank are "ring-fenced" in a bankruptcy, with assets of the branch being used to repay domestic creditors before being released for the use of the domiciliary liquidator. In other countries, a bankrupt institution is treated as a "single entity" and world wide assets are placed in a common pool.

Not all these potential sources of conflict can be resolved through supervisory cooperation. But a greater awareness of their existence and possible consequences would help to achieve a greater consistency among varying objectives.

Related to this is the last obstacle I will mention, that of implementation processes. There is as yet no fully satisfactory template for the sharing of responsibilities among the multiple supervisors of a large and complex financial institution. In a crisis, it is highly desirable that a single authority should take the lead in coordinating responses among supervisory authorities (and perhaps governments and central banks as well). Unfortunately, we are quite some way from this point. Supervisory cooperation is complicated by problems of communication, legal authority, and sometimes even by bureaucratic jealousies. It would be no easy task to allocate lead responsibility to a single authority. But more effort needs to be made to get as close to this as current structures allow.

5. Conclusion

I have tried in this keynote address to tie together the three components of dealing with stress at a large financial institution. They are interrelated.

The first is to ensure that the risk management of such institutions is sound. This means supervisors have to strike the right balance between prudent requirements and competitive freedom. High quality risk-based supervision will reduce episodes of significant stress to minor proportions.

Still, we should not expect, or desire, that stress will never occur. There needs therefore to be a mechanism to handle stress, and to foster remedial actions that can return an institution to health (perhaps with reduced size) without requiring complex official intervention.

In rare cases, even this may not be enough. Some strategy is therefore needed for handling cases in which a large banking franchise cannot be wound down without extraordinary official intervention. This is where present arrangements are least satisfactory. The problem is not so much of certain institutions being too-big-to-fail, but too big, or too complex, or too internationally diverse to rescue.

It is of some comfort to know that this kind of crisis is highly unusual, and decades may pass without one. But if it does strike, it would be better if we were more prepared than I believe is presently the case. The implementation of Basel II may provide the opportunity to try out collaborative mechanisms in this domain. Basel II calls for supervisory cooperation of a high order. Let us resolve to use the collaboration and transparency this calls for to build a more robust crisis response mechanism.

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Changes in the Structure of the U.S. Financial System and Implications for Systemic Risk

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My compliments to Michael Moskow for putting together this conference and for bringing together this formidable group of talent on systemic banking crises. There are those who regard this type of enterprise — that of strengthening the regime for managing financial failures — as misdirected. Some think focusing on bank resolution is like devoting resources to redesigning the morgue rather than improving the hospital. Some think that by preparing to deal with crises you make them more likely. I think the wiser judgment is the contrary. In this area at least, if you want peace or stability, it's better to prepare for war or instability.

I think this is particularly important for us in the United States. Although we have a rich history of banking crises in our past, and have watched other countries confront such crises more recently, it has been some time since we've experienced the prospect or the reality of a systemically significant bank failure in this country. It is important that knowledge among practitioners of this art of bank resolution does not fade with time and is not dulled by the comfort of the relative stability and financial resilience we have been fortunate enough to enjoy over the past decade and more.

I want to reflect tonight on the changes in the structure of the U.S. financial system of the last 20 years or so, and what implications these have for the nature of systemic risk. For those of us who are responsible for thinking about the overall stability of the financial system, the questions we face are, of course, broader than the potential insolvency of a large bank and the most appropriate resolution methodology. They include not just how to make the system better able to withstand the failure of a major bank or financial enterprise built around a bank, but also how to better withstand the failure of a major nonbank financial intermediary or a systemic liquidity

crisis that may or may not arise from a solvency problem at a large supervised financial institution.

The central bank of the United States was legislated into existence in the wake of the banking crises of the early twentieth century. And the framework that evolved in the decades that followed was directed specifically at dealing with the special risks posed to banks and by banks to the economy as a whole.

1. Changing Market Structure

Let me highlight a few of the changes in the financial structure that are germane to the mandate of the Federal Reserve. They are:

- The greater systemic importance of a smaller number of large bank-centered financial institutions;
- The greater role played by nonbank financial institutions;
- The growth of the government sponsored enterprises (GSE);
- Greater operational demands on the core of the clearing and settlement structure;
- An increase in the complexity of risk management and compliance challenges; and
- The extent of global financial integration.

These are not all that new, and not all are unique to the United States, but taken together they are significant.

Most conspicuously, we have seen the emergence of a small number of very large, complex, bank-centered financial institutions that now account for a substantial share of the assets and liabilities of the U.S. banking system. The top five domestic bank holding companies now hold about 45 percent of banking assets, almost twice the share as they did 20 years ago.

The earnings capacity of these very large banking institutions, the absolute size of their capital cushions, and the diversity of their activities, geographic and functional, should make them less vulnerable to specific shocks and better able to absorb larger shocks than has been true in the past. In other words, the core of the U.S. banking system should be more stable in the face of a broader range and greater magnitude of shocks. However, the increased size and scope of these entities necessarily exposes them to a wider array of potential shocks and risks and means that the failure of one of them could have a broader impact than in the past and be considerably more difficult

to resolve. The implications of such a failure would almost certainly fall outside of the range of experience captured in conventional models.

At the same time, despite their size and scale, banks now account for a smaller share of financial intermediation in the United States than was true in the past. Depository institutions now hold about one-fifth of all assets held by financial institutions, or less than half of what they did in 1984. This crude comparison understates the importance of banks in the credit origination process and wholesale financial markets, but the broad picture it paints of the increased role of nonbank financial intermediaries is still noteworthy. To put it differently, financial intermediaries that are not subject to consolidated risk-based capital frameworks and the full complement of supervisory constraints applied to banks and bank holding companies, now account for most of the assets of financial institutions in the United States.

There has also been substantial convergence in the types of financial transactions bank-centered and nonbank affiliated financial intermediaries perform. This translates into a more competitive and more innovative financial system, one that is more flexible and resilient, with weakness in one part of the system more likely to be offset by a capacity for expansion elsewhere. And, because their overall risk profiles are likely to differ from banks, the greater importance of nonbank financial intermediaries, and of the capital markets more generally, offsets some of the potential concern associated with consolidation in the banking system.

Within the universe of nonbank financial intermediaries, there are other material changes worth noting. Let me highlight three. First, the role of the major investment banks in the United States as market makers and providers of liquidity in a broad range of foreign exchange, securities, and derivatives markets has continued to grow over the past decade, as has the international importance of these firms. These institutions are now key participants in the domestic and international clearance and settlement processes associated with these activities.

Second, a sustained period of rapid growth in the major mortgage GSEs has left us with two very large financial institutions, whose balance-sheet and associated off-balance-sheet positions today account for a much larger share of the U.S. mortgage market than was the case a decade ago. This means that the credit and market risks associated with the home mortgage business in the U.S. are now in some respects more concentrated. It means that the actions taken by the GSEs to manage interest rate risk can have a substantial impact on interest rate volatility. And, it means that the exposures

of major banks and investment banks to these GSEs is larger than in the past, measured relative to capital, and large relative to other major counterparties.

Together, these changes mean there are a larger number of nonbank financial intermediaries operating outside the supervisory safety and soundness framework established for banking organizations, that are sufficiently large or integral to the financial system that their failure or anticipated failure could have major implications for the functioning of the markets in which they operate and their financial institution counterparties.

Third, hedge funds now play a more substantial role in the U.S. financial system. They are a significant source of liquidity in some markets. They play an important role in making our financial markets more efficient. And they are likely in some circumstances to help markets equilibrate more quickly in conditions of stress, as was the case in the summer of 2003, when they helped meet a substantial increase in mortgage-related hedging demand from banks and the GSEs. Assets managed by hedge funds have grown very rapidly, more than doubling since 1998 to current estimates in the range of one trillion dollars. Gross credit exposure and potential future credit exposure to hedge funds as a group are probably larger today relative to the capital of banks and investment banks, although also likely more diversified. Overall leverage seems lower relative to 1998, and may not look that high relative to banks and investment banks, but leverage is hard to measure and the quality of the data is not very good. While hedge funds are large enough to provide meaningful efficiency and liquidity benefits to some key markets, they are also large enough that the failure of a major hedge fund or number of funds could have a significant impact directly and indirectly on the major banks and investment banks in the United States.

Within the clearance and settlement infrastructure, economies of scale have led to high levels of concentration in some areas. Two institutions together now handle the vast majority of clearing business for U.S. government securities and the associated triparty repo market in which over $1 trillion turns over twice each day. The dramatic increase in the volume of transactions handled by the core parts of the payments infrastructure places substantially greater demands on the operations of those institutions. Moreover, many of the major payment and settlement utilities operate across national boundaries, raising complicated questions for the appropriate allocation of oversight responsibility.

Alongside these changes in the relative size of institutions and in market structure, financial innovation has led to a dramatic increase in the complexity of the risk management challenge. The frontier of financial innovation inevitably advances somewhat ahead of improvements in the risk management and clearing infrastructure. The models used to assess risk in the more novel areas of finance are, by definition, less grounded in experience and less valuable in anticipating how prices and correlations change in conditions of stress. Consensus on the appropriate accounting treatment is less well established. With the dramatic increase in the scope of operations of the major financial institutions, the challenge of pulling together an integrated risk management framework that captures exposures across the entirety of the firm is much greater.

The potential for conflicts of interest and opportunities for fraud are greater, placing significant burdens on internal compliance regimes. The changes in regulation and technology that have increased the opportunities for risk transfer mean that more risk may end up in parts of the financial system where supervision and disclosure is weaker and in parts of the economy less well able to manage it.

Finally, we have seen substantial growth in the integration of national financial systems. Indeed, a number of foreign and foreign-owned banking organizations are among the largest financial institutions in the U.S., with operations here that run into the hundreds of billions of dollars, and in some cases representing the majority of their global assets. The major U.S. banks and investment banks are more global in the scope of their operations, and their affiliates are a major presence in many of the countries in which they operate, in some cases with a larger share of financial activity than they have in the U.S. market. Payments and clearing arrangements are increasingly transnational in scope. But, the legal and supervisory frameworks for financial activity are still national, and are likely to remain so for the foreseeable future. And despite the development of a much more intensive and extensive network of cooperation among supervisory and regulatory and enforcement authorities, and movement toward an ever-higher standard of convergence in key elements of the regulatory structure across jurisdictions, the regime is inevitably uneven, with different standards across jurisdictions and therefore continuing opportunities for regulatory arbitrage.

2. Implications

These broad developments alter the hierarchy of systemic concerns for the U.S. authorities. The greater systemic importance of a smaller number of large bank-centered financial institutions, the greater role played by non-bank financial institutions, the growth in the GSEs, the greater operational demands on the more concentrated core of the clearance and settlement infrastructure, the dramatic increase in the complexity of the risk management and compliance challenge, and the extent of global financial integration — these developments change the nature of the potential sources of stress to the financial system. They change how stress is transmitted. And they change the impact of tools we use to mitigate risk ex ante and to contain the broader financial and macroeconomic fall-out of financial distress.

These developments can have both positive and negative impacts. In many respects, they help to reduce risk. In some ways, they increase risk. On balance the positive aspects dominate the less positive. Shocks may act more quickly, but they can be more easily diffused and absorbed. Institutions and markets seem better positioned to handle a substantial degree of stress. Shocks may be less likely to result in the type of trend amplifying, self-reinforcing dynamic for sustained periods of time that can threaten the stability of the financial system.

But it is important to recognize that we do not know a lot about the underlying dynamics of financial crises in the context of the evolving financial system I have described. It is also worth reflecting on the fact that the favorable judgment of U.S. financial resilience at present is rooted in a period of lower overall volatility in macroeconomic outcomes, with lower inflation and less variability in inflation, and shorter and shallower recessions. Financial innovation has brought about a dramatic increase in the opportunities for diversification and risk transfer and in the sophistication of risk management, but it is unlikely to have brought an end to the periodic tendency of markets to experience waves of mania and panic. The systemically significant financial institutions are larger and stronger than in the past, but they are not invulnerable, and the impact of a failure would be greater. And it would be imprudent to expect that the lower overall magnitude of recent macroeconomic shocks that has contributed to lower volatility in growth and inflation outcomes will be with us indefinitely.

What are the implications of these changes for how we think about managing systemic risk in the United States? Let me touch on five broad

areas, though these cover only part of the landscape of the financial stability agenda.

First, it is important that the standards applied to the largest financial institutions at the core of our financial system are calibrated to reflect their systemic relevance. Relative to the standards appropriate for a smaller financial institution with a similar risk profile, capital should be targeted to achieve a greater proportional ability to absorb shocks and thereby attain a lower ex ante probability of failure. This makes it important that management of these large firms maintain an ample capital cushion over and above the high regulatory thresholds. Similarly, the funding and liquidity management framework needs to provide a larger buffer against potential shocks. The internal risk management regime — for credit and market risk, operational risk, compliance risk — needs to meet a more exacting standard. The requirements for operational resilience for technology systems are necessarily more demanding. Because of the broader implications of a failure for the financial system and for the economy as a whole, the supervisory framework for the largest systemically significant banking organizations, as well as the firms themselves, needs to produce a higher level of financial soundness than might be indicated by measures of economic capital or expected by shareholders and creditors of the institution.

This is important for banks and financial institutions built around banks because of their access to the safety net and their special role in the payments system. Our approach at the Fed seeks to achieve this outcome for the major institutions for which we are the consolidated supervisor. But the basic argument for applying exacting standards for risk based capital, for liquidity management, and for operational resilience applies to a broader range of supervised and regulated financial institutions whose operations pose significant systemic implications for the financial system.

This is particularly compelling in the case of the major GSEs, where the regulatory framework, capital regime and sophistication of the internal risk management framework need to be upgraded to a standard more commensurate with their risk profile and the risks they present to the system.

It is as compelling in the case of the institutions — a number of them specialized financial utilities — that make up the core of the payments infrastructure. Here, because of their overall importance to the functioning of our financial system, we are working to encourage improvement in operational resilience, to ensure they meet the recently updated international standards

for risk management and internal financial resources, and to strengthen the oversight framework.

It is important to note that the Securities and Exchange Commission (SEC) has itself outlined a framework that would provide a form of consolidated supervision of the major investment banks with a risk-based capital framework based on Basel II. It's not clear at this point how the SEC's regime will work in practice, but it seems to offer the prospect of some evolution in the regulatory framework for investment banks in the direction of convergence with those that apply to bank holding companies. That is, the proposed new GSE regime will add a consolidated approach to risk based capital and an intensified focus on the risk management regime to the traditional SEC focus on enforcement of laws directed at investor protection and market integrity.

A second point is that it is important that those who run financial institutions calibrate the strength of the internal risk management architecture to the more complicated nature of the risks they confront. Even with the major improvements in capital, earnings capacity, and in the sophistication of the risk management framework, there remain many aspects of the changing financial environment which pose ongoing challenges for management.

The degree of concentration at the core of the financial system means that financial institutions have to think more carefully about the implications of the failure of a major counterparty or clearing organization. The increase in the combined weight of the highly leveraged financial institutions as a group highlights the importance of both strong counterparty risk management disciplines in managing direct credit exposure, and understanding the impact a disorderly exit would have on other positions held by the firm. The uncertainty about how markets respond in conditions of acute stress — uncertainty in terms of how correlations behave, how much liquidity will be available, the risk profile of counterparties, etc., combined with the inherent uncertainty about the probability of a seemingly remote event, and the scale of losses associated with such an event — all argue for a more prudent cushion against risk than would be necessary in a less complex and more certain state of the world.

Third, our approach to financial stability relies a lot on market discipline and, as a result, depends significantly on the quality of accounting and public disclosure. We see some progress in the extent to which firms provide a clear picture of their underlying risk profiles, but there is room for improvement. Accounting standards have notably struggled with the challenges of

incorporating innovations in financial instruments, especially when those instruments are used to offset the risks inherent in more traditional activities whose fluctuations in value have not typically been recorded in earnings or in balance sheet valuations. It is hard to see how we can be comfortable that we have achieved a reasonable resting place on these issues. In the long run, it is critical for the cause of market discipline that accounting and disclosure of financial instruments be consistent with the ongoing direction of innovation in risk management.

Finally, the broad changes in market structure place a much higher premium on cooperation among supervisors, market regulators, and central banks, both nationally and internationally.

Unlike other countries who have moved to integrate supervisory responsibility for banks, investment banks, and insurance companies, the U.S. has preserved a model with multiple bank supervisory agencies and separate functional regulation of entities that are banks, securities firms, and insurance companies. And unlike those that have separated supervisory authority from the monetary policy and lender of last resort functions, the U.S. has kept them integrated within the central bank. Across the major economies, therefore, we face somewhat different cooperation challenges within our markets. We believe the U.S. model has worked quite well, and these differences in the design of the overall supervisory framework and its relationship to the central bank are likely to persist. But we share an important interest in working together across borders to help ensure that we have a framework for cooperation that matches the increased integration of national financial markets. This is important for the supervision of international banks as well as for other global financial institutions. It is important for the payment and settlement infrastructure. And it is important for how we operate together in crisis.

The efforts of the Basel banking supervisors are particularly important in this context. While their efforts have long emphasized the value of international supervisory cooperation, the improved Basel II framework raises the bar even further, putting the need for supervisory coordination squarely on the table if Basel II is to be implemented effectively for a global bank.

3. Conclusion

Let me conclude by emphasizing the obvious importance of the quality of macroeconomic policy management to the stability of the financial system.

It probably is possible for a country with an exceptionally virtuous fiscal and monetary policy framework to experience a systemic financial crisis. But most financial crises involve a shock whose origins lie in the realm of macroeconomic policy error, often magnified by the toxic combination of poorly designed financial deregulation and an overly generous financial safety net. Probably the most important contribution policy makers can make to financial stability is to avoid large monetary policy mistakes or sustained fiscal and external imbalances that increase the risk of large macroeconomic shocks, and to try to ensure that policy reacts with sufficient speed and force in the face of those shocks we are unable to avoid.

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Financial Stability—Protecting Solvency

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The Resolution of Systemic Banking System Crises

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"*For every complex problem, there is a solution which is simple, neat, and wrong.*"

H. L. Mencken

1. Introduction

Systemic banking problems exist in a multitude of different forms. Banking systems can be chronically weak, reflecting entrenched unsafe and unsound banking practices or structural weaknesses in the institutional framework of a country. Banking problems can affect only a subset of the banking system, with flight to quality from weak to strong banks. Widespread banking problems can emerge because of external shocks or economic slowdowns that affect the economy as a whole or particular sectors of an economy. Systemic crises can be triggered by sudden loss of creditor confidence, either because of economic or political developments.

This paper addresses one issue in this broader context: What are the crisis resolution tools available once a widespread crisis has broken out and creditor confidence in the banking system has evaporated? What is the policy response once creditor runs cause banking system illiquidity and, possibly, banking system insolvency? Under these circumstances, the authorities' goal is to reestablish macroeconomic stability and financial intermediation using a combination of macroeconomic and microeconomic tools.

In this environment, financial difficulties become intertwined with political and social problems. Delays in action can generate uncertainty about the state of the financial system, rumors, and growing panic. This uncertainty

brings out political rivalries and may lead to social chaos. The social and political deterioration, in turn, affects economic decision-making. Crisis management under these conditions becomes both difficult and complex. Deciding on policy options is often made more difficult by an unclear picture of the true financial conditions of banks and by limitations in the legal and institutional framework. Political instability can add an additional layer of confusion and can limit the range of resolution options.

The fund is often in the unenviable position of being required to act under conditions of extreme uncertainty and time pressure. The fund is typically called in only once the crisis has erupted and conditions are rapidly deteriorating. Fund programs (including their bank restructuring component) have to be developed and implemented quickly. The premium is on rapid containment and effective implementation of a broad strategy. Staff involved in crisis management need to combine deep country-specific knowledge and an understanding of the lessons from past crises. Effective teams, therefore, are composed of local authorities, international experts, and, where useful, private sector financial consultants.

Crisis management can be organized into three broad stages. The initial priority is to contain the banking crisis. Deposit runs must be contained before the authorities can turn to structural reforms. Once achieved, the authorities must turn to two additional components of a crisis management strategy: restructuring the banking system and managing assets from intervened and closed banks.

This paper has three objectives. First, the paper will define systemic crises and describe the tools frequently used to contain and resolve the crisis. Second, the paper will describe the pitfalls frequently encountered in applying those tools. It will be argued that crisis management tools can be extremely powerful and effective but they also carry risks that, if not considered in the strategic design, can distort the resolution process and jeopardize the final results. Finally, the paper will outline some of the lessons learned concerning crisis prevention and resolution.

2. Managing Systemic Banking Crises

A systemic crisis is identified by its threat to the stability of the banking system. Systemic crises are sufficiently severe to affect adversely the payments system and, in consequence, the real economy through reductions in credit flows, or the destruction of asset values. A typical feature of a systemic crisis is the difficulty in distinguishing between solvent and insolvent banks.

Accordingly, creditors, including depositors, run from all banks and/or from the currency, threatening the stability of the entire banking system. The run is fuelled by fears that the means of payment will be unobtainable at any price, and in a fractional reserve banking system this leads to a scramble for high-powered money, foreign currency, and a withdrawal of external credit lines.

At the outset of a crisis, macroeconomic policies will need to be adjusted to restore confidence in the currency and the banking system. Systemic financial crises affect most sectors of the economy and require macroeconomic policy adjustments. The appropriate policy mix will depend on the nature of macroeconomic imbalances and the state of the banking system. While this paper concentrates on banking system restructuring, such restructuring policies must be consistent with supporting macroeconomic policies. Moreover, measures to contain the crisis and restructure banks may have macroeconomic consequences that need to be taken into account in the design of a bank resolution strategy.

Treatment of a systemic banking crisis, where creditors are running from all banks in the system, contrasts in important ways with the treatment of individual bank failures in stable periods. Policies considered appropriate in stable periods may aggravate uncertainties in a systemic crisis, worsening private sector confidence and slowing recovery. In stable periods, for example, deposits have only limited protection, emergency liquidity assistance is given under very restricted conditions, and insolvent banks are resolved. In a systemic crisis, however, policies aim at (1) protecting the payment system; (2) limiting the loss of depositor confidence; (3) developing and implementing a strategy to restore solvency to the banking system; and (4) preventing further macroeconomic deterioration.

A variety of tools have been used to achieve these objectives. These tools include emergency liquidity support, mechanisms for strengthening creditor confidence, and bank strengthening and resolution techniques. While they have proven to be effective under some conditions, they are also subject to limitations. Understanding the conditions under which these tools can be used is critical to the effective management of systemic crises. In the following sections, the uses and limitations of these tools are discussed.

3. Crisis Containment

The immediate priority of the authorities must be to contain the banking crisis. Adequate structural policies cannot be implemented in the face of

depositor panic, macroeconomic deterioration, or an imminent threat of interruption in essential financial services. Experience points to the importance of emergency liquidity support and the potential for using blanket guarantees as part of the policies to address these problems. When these tools are ineffective, the authorities may be forced to turn to more intrusive, administrative measures.

Containment measures buy time but are not by themselves a solution. To have a lasting result, containment measures must be combined with strong macroeconomic adjustment policies and comprehensive bank restructuring strategies. Containment measures alone cannot restore market confidence when the macroeconomic situation continues to deteriorate, and the political and social situation is unsettled.

As described below in more detail, moral hazard and weakened market discipline are intrinsic to all containment measures. Moral hazard arises because unsafe and unsound institutions are not disciplined by creditors when the provisions of the country's safety net are strong and banks have an incentive for excessive risk-taking. Hence in designing the policy framework for containment measures, particular design features must be included to limit the potential distortions to incentive. The decision facing policymakers is how to balance the benefits of immediate stabilization of the banking system against the costs imposed by distortions to market incentives.

4. Emergency Liquidity Assistance

Immediate emergency liquidity support is an essential element of crisis containment. In the early stages of a financial collapse, depositors are running from all banks in the system. As described above, the inability to distinguish good from bad banks, together with the fear that bank liquidity will disappear, cause even good banks to fail. Failure to ensure liquidity to banks will only accelerate the deterioration and collapse of the banking system.

Banks that were obviously insolvent before the emergence of the crisis must be resolved rather than supported; however, distinguishing between solvent and insolvent banks once the crisis emerges is difficult. In a systemic crisis, authorities cannot easily distinguish between solvent and insolvent banks. Time is needed to evaluate the impact of the economic changes on the banks' viability (see below). Under such circumstances, failure to provide liquidity can exacerbate the crisis rather than stabilize private sector expectations.

An example of the importance of providing adequate liquidity in the early phases of a banking crisis was evident in most crisis cases. The central banks in all four East Asian countries provided liquidity to allow the withdrawal of deposits. Most central banks combined liquidity support with significant and successful efforts at sterilization.[1] Concern about the macroeconomic impact of emergency liquidity lending led one European country to withhold such support. Rather than stabilizing the situation, however, deposit withdrawals accelerated in the face of uncertainties about the liquidity position of the banking system. Once the central bank reopened the emergency window (combined with appropriate open market policies to absorb the excess liquidity) depositor confidence stabilized and the government was able to turn to the medium-term task of bank restructuring.

Notwithstanding the importance of providing liquidity support, the instrument carries serious risks.

- The increase in monetary aggregates resulting from the use of emergency liquidity support can put pressures on both prices and the exchange rate.
- Banks that eventually become insolvent may be the most frequent users of central bank liquidity support, exposing the central bank to significant losses.
- The usual terms of emergency lending, such as penalty rates, short maturity, and acceptable collateral, may need to be relaxed during a systemic crisis to accommodate the implementation of a bank restructuring strategy. However, such action reduces the safeguards of the central bank and may introduce moral hazard if the new terms discourage banks from seeking alternative sources of liquidity.
- Liquidity support to weak banks is prone to abuse, and might in particular be relied upon to increase the bank's assets instead of reducing its depositor liabilities.
- Dollarized economies may not have the luxury of emergency liquidity support. Liquidity support results in a reduction of net international reserves that may not be replenished through open market operations.

[1]Lindgren *et al.* (1999), p. 18.

The liquidity support mechanism must be designed in a way that takes these risks into account.

- The monetary authorities must sterilize monetary pressures. Macroeconomic policies should be adjusted to prevent any prolonged "overshooting" of domestic interest rates.
- Liquidity triggers should be introduced to reduce the likelihood that liquidity assistance is provided to insolvent banks. As liquidity assistance increases as a percent of bank capital, increasingly severe supervisory measures should triggered. Banks are first subject to special on site inspections, followed by placement of supervisors on the Boards of Directors. At a point determined by law, liquidity triggers can permit supervisory intervention in the bank, thus overcoming other deficiencies in the bankruptcy regime.
- Enhanced supervision of banks receiving emergency support is necessary to reduce moral hazard and ensure that central bank liquidity is used as intended. Attention needs to be paid to corporate governance in these banks, particular if problems are the result of poor banking rather than pure contagion.
- Central banks in highly dollarized economies have established (1) higher liquidity requirements than customary in non-dollarized economies; and (2) contingent loans from international banks.

5. Blanket Guarantees

Blanket guarantees have proven useful in ending banking panics. Faced with accelerating deposit runs, many countries have found blanket guarantees effective in restoring private sector confidence in the financial system. Four of the Asian countries relied on this instrument in the late 1990s, as did Turkey in its more recent banking crisis. A blanket guarantee gave the authorities time to diagnose fully the condition of the banking system, find agreement on the appropriate strategy, and then intervene and resolve unviable banks without risks of contagion.

But restoration of confidence comes at a cost, which has varied considerably among countries. When credible and effective, the immediate costs of blanket guarantees are minimal as, once the runs stop, the guarantee is not called. However, a guarantee also commits the authorities to restoring the solvency of the banking system. The costs of that guarantee depend

on a number of factors. Key determinants are (1) the state of the financial system (its capital shortfall); and (2) the effectiveness of the authorities' overall banking strategy. Recent analysis of some countries suggest that delays in addressing the deterioration in the banking system once the blanket guarantee is in place explain a significant portion of total resolution costs. Moreover, the overall costs may reflect recapitalization needs of large public banks — an obligation of the government even in the absence of a blanket guarantee. Finally, countries that have been unsuccessful in the recovery of assets taken over as part of the resolution process have faced significantly higher crisis costs. Asset recovery is a powerful tool for reducing crisis costs. Delays or inefficiencies create lost opportunities for addressing the limitations in other resolution tools.

While concern about the costs of guarantees is valid, the difficulty policymakers face is evaluating the counterfactual. The authorities must weigh the costs arising from the potential failure of a higher number of banks in the absence of a guarantee against the cost of resolving individual banks under a blanket guarantee. Several of the countries that implemented blanket guarantees did so in the face of extreme social pressure and collapsing financial institutions. Announcement of the blanket guarantee halted the outflows and gave authorities time to reassess the causes of the collapse and identify a strategy. Had the blanket guarantees not been implemented, the countries could have faced even deeper collapse of the financial system and even greater political and social chaos (Table 1).

When deciding on the appropriateness of a blanket guarantee, the following factors should be considered:

- A blanket guarantee must be credible. The private sector must believe that the government is in a position to honor the guarantee.
- The blanket guarantee must provide only the minimum protection needed, as excessive coverage only increases moral hazard. Groups often not covered include shareholders, subordinated debt holders connected depositors, and depositors in offshore subsidiaries.
- The worse the financial conditions of the banking system, the higher will be the cost of the blanket guarantee and an adequate fiscal effort is required.
- The authorities must have adequate legal powers and the tools and the determination to restructure banks and move quickly to restore the system's solvency.

Table 1. Fiscal costs of selected banking crises (in percent of GDP)

	Crisis Period	Gross Outlay	Recovery	Net Cost	Assets[a]
Chile	1981–1983	52.7	19.2	33.5	47.0
Ecuador	1998–2001	21.7	0	21.7	41.3
Finland	1991–1993	12.8	1.5	11.2	109.4
Indonesia	1997–present	56.8	4.6	52.3	68.1
Korea	1997–present	31.2	8	23.1	72.4
Malaysia	1997–2001	7.2	3.2	4.0	130.6
Mexico	1994–1995	…	…	19.3	40.0
Norway	1987–1989	2.5	…	…	91.9
Russia	1998	…	…	0.0	24.9
Sweden	1991	4.4	4.4	0.0	102.4
Thailand	1997–present	43.8	9	34.8	117.1
Turkey	2000–present	31.8	1.3	30.5	71.0
United States	1984–1991	3.7	1.6	2.1	51.4
Venezuela	1994–1995	15.0	2.5	12.4	28.3

Source: Hoelscher, and Quintyn (2003).
Note: "…" indicates that data are not available.
[a]Assets of deposit money banks in the year before the first crisis year.

- The authorities must have adequate controls to prevent fraud and other misuse of the blanket guarantee.

Both emergency liquidity support and blanket guarantees have proven to be controversial. Concerns about the cost implications of both have led to suggestions that such instruments not be used in crisis management. The alternative proposed is to impose haircuts on the creditors of insolvent banks in the hope that confidence will eventually return and the deposit runs stabilize.[2] Were runs to continue in otherwise solvent banks, reflecting a generalized loss of confidence, this policy option would allow depositors to continue withdrawing funds until a number of these banks would become illiquid and be closed.[3] This strategy aims at leaving only solid banks in the banking system and limits the resolution costs to the government.

[2]Haircuts are defined as nominal reductions in the deposit; non-par value (NPV) reductions through maturity extensions, or interest rate reductions are not termed a "haircut".
[3]As an example, this approach is proposed in Kane and Klingebiel (2004).

There are serious limitations to this alternative resolution approach. First, as stated above, systemic banking crises are different from bank failures because of the difficulties in distinguishing between viable and nonviable banks.[4] As a result, depositors flee from all banks in the system.[5] Allowing all banks facing runs to fail implies accepting unnecessary and irreversible damage to some healthy sections of the financial system. Second, the economic and social costs of this alternative have not been evaluated. While the counterfactual arguments are difficult to quantify, eliminating an excessively large segment of the financial sector will result in significant disruptions in the distribution of financial services that will hurt the real sector and thus compromise the economic recovery. Third, government authorities have been reluctant to try such an alternative because of the political and social implications.

Imposing nominal losses (haircuts) on creditors during systemic crises is particularly disruptive to the financial system. Imposition of reductions in deposit balances is more costly to the depositor and more intrusive than modifying contract terms. Restoration of confidence, therefore, becomes more problematic. Moreover, depositors with residual balances in the bank may immediate withdraw remaining balances in the bank to prevent further confiscation, thus aggravating the banking crisis. The political costs of deposit haircuts are often seen as prohibitive. For these reasons, this policy has been used in only a few, extreme cases — Argentina (1989), Estonia (1992), Japan (1946), and the United States (1933).[6] Two of the cases (Japan and the United States) occurred when deposit insurance systems were not in place and the more recent cases (Estonia and Argentina) were part of a fundamental restructuring of not just the banking system but the entire economic framework for the country. For example, Argentina imposed depositor haircuts in 1989 following a prolonged period of hyperinflation and both

[4]Under normal times, failed banks should be resolved and depositors protected only up to the maximum in the deposit insurance system. Imposing losses under such circumstance will not cause contagion as other depositors in the system will know the condition of their banks.

[5]In the Argentinean case, for example, deposit withdrawals were suffered by all banks in the system, including the strong international banks.

[6]Baer and Klingebiel (1995). They also studied Malaysia (1986) where insolvencies emerged in financial cooperatives. Cooperatives represented about 3 percent of total deposit taking institutions. Depositors in insolvent cooperatives received 50 percent in cash and the remaining 50 percent in securities. While representing an NPV reduction, nominal haircuts were not imposed.

a political and social collapse. The stabilization package reversed decades of populist macroeconomic policies, stabilizing prices and the exchange rate, revamping relations between the national and regional governments, and restructuring public sector finances. Under these circumstances, the negative impact of deposit haircuts may have been overshadowed by a positive impact arising from the wide ranging structural reforms.

6. Administrative Measures

Plans for stabilizing systemic crises can go awry. The country may not meet the necessary conditions for efficient use of the stabilization tools, mentioned above. Macroeconomic developments can slip, worsening the crisis and preventing stabilization of private sector expectations. High levels of dollarization can so limit the effectiveness of traditional resolution tools that they are not viable options. Political or social developments can impede prompt crisis resolution.

Under such conditions, administrative measures may be the only alternative available to contain the generalized collapse of the financial system. These measures change the contractual terms of bank deposits, and can be referred to collectively as "deposits freezes". In designing these measures, three basic options are available: restrictions on deposit withdrawals, an extension of deposit maturities, and securitization of deposits. Such measures have been used sparingly in recent times. However, Argentina, Ecuador, and Uruguay have all relied on some form of this containment tool.

Administrative measures have serious limitations and should be used with caution. Such measures are disruptive to the payment system and to economic activity. Moreover, depositors will react negatively to all administrative measures. The measures, therefore, should be viewed as a final, desperate measure to stop a run on banks if all other measures fail. They should also be designed to mitigate as far as possible their negative impacts.

- All deposit freezes are disruptive to the economy as they limit access to the means of payments. When properly designed, securitization is the least disruptive in this sense, as deposits are converted into negotiable instruments that can be redeemed for liquidity in case of

need, albeit at a discount.[7] More generally, administrative measures should always allow for a small amount of funds to be withdrawn to facilitate financial transactions.

- Deposit restrictions tend to lose effectiveness quickly as market participants learn ways of circumventing them. Thus, if restrictions are imposed, they should be in place for limited time-periods and be used to buy the authorities time to work out a permanent solution.
- Political and social pressures have resulted in exemptions and the abuse of exemptions.
- Unwinding deposit restrictions can be problematic. While a premature removal of deposit restrictions exposes the banking system to the risk of a new run, an excessively drawn out process can harm confidence in the banking system.

7. Bank Restructuring

The main objective of the restructuring strategy is to restore individual banks and the system to profitability and solvency. The strategy should identify measures to strengthen viable banks, improve the operating environment for all banks, and resolve unviable banks. Bank restructuring is a multi-year process, often requiring the establishment or revision of laws and institutions; the development of strategies to liquidate, merge, sell, or recapitalize banks; and the restructuring and recovery of bank assets, operations, and procedures.

The bank restructuring strategy begins with a diagnosis of the financial condition of individual banks. The size and distribution of bank losses must be identified. As supervisory data may be outdated and not reflect the full economic impact of the crisis, supervisors may attempt to update available information based on uniform valuation criteria. The supervisors will also examine information on banks' ownership structures (public or private, foreign or domestic, concentrated or dispersed) to help determine the scope for upfront support from existing or potential new private owners.

Diagnosis of banking sector conditions in a crisis is typically hampered by data limitations. A frequently used measure of solvency is the

[7]This, however, can have adverse redistributional effects if the neediest depositors are forced to liquidate the securities at a discount, while the most affluent ones can afford to hold the bonds to maturity.

risk-weighted Basel capital assets ratio (CAR). However, when data limitations delay the evaluation of banks' capital levels, supervisors may need to rely on other sources of information to determine bank viability. Independent auditors have been useful in developing an impartial view of the current conditions of the bank, based on uniform criteria. Such audits may be particularly useful when insider lending is a particular issue. The medium-term viability of a bank, however, requires an understanding of the bank's medium-term strategy.

Banks can provide input in the diagnosis process by presenting business plans showing a bank's medium term viability. A bank can be considered viable if (1) it can remain profitable and earn a competitive return over the medium term; and (2) the shareholders are committed and able to support it. Supervisors may require that banks produce forward-looking business plans using common economic assumptions and that include time bound, measurable targets for monitoring purposes.

Banks determined to be nonviable and insolvent must be removed from the system. Depositor protection will facilitate this clean up, as banks can be closed without fears of contagion. Many countries have been able to move aggressively in removing failed banks, once the blanket guarantee was in place.[8]

The supervisors classify banks remaining in the system and develop appropriate resolution strategies. Typically, supervisors would differentiate between banks that are (1) viable and meeting their legal CAR and other regulatory requirements; and (2) viable but undercapitalized. In the latter classification, an additional assessment will be needed to determine whether the existing shareholders can recapitalize their bank within an acceptable period or if the use of public funding should be considered. Shareholders of undercapitalized banks must agree to a monitored recapitalization and restructuring plan with time bound targets. Failure to meet the targets would be cause for intervention and resolution of the bank. The plan should also include sufficient restrictions on bank operations as to establish incentives for shareholders to over perform in their restructuring.

[8]For example, Korea removed licenses of 19 banks; Indonesia removed the licenses of over 90 banks, Thailand closed 58 finance companies and intervened 5 banks; and Turkey removed licenses from 22 banks.

Restructuring strategies for viable banks in a systemic crisis can be broadly divided into private sector solutions and public sector assisted solutions.

- *Private sector solutions.* Shareholders should always have the responsibility to recapitalize and restructure their bank. If the shareholders are unable to recapitalize fully their bank immediately but they are fit and proper and the bank is deemed viable, consideration could be given to allowing solvent but undercapitalized banks to remain in the system under strict conditions.[9] The bank's recapitalization could be phased in, with tight monitoring and requirements, including the suspension of dividend distributions until the required level of capital has been restored. If the original shareholders are unable to recapitalize, other private owners should be sought. In this regard, limitations on foreign investors could be removed, thus increasing the availability of capital for the banking system and possibly strengthening the banking skills in the system.
- *Public sector-assisted solutions.* Failure of private sector solutions and bank insolvency does not necessarily result in bank liquidation. Circumstances can exist where public sector action may be warranted to limit the costs to the real economy of too large a number of banking failures. Public sector assistance can use a variety of techniques: (1) joint recapitalization schemes; (2) resolution through purchase and assumption (P&A) transactions or other sales methods, when public funds are used to back transferred liabilities or guarantee asset values; and (3) nationalization (with a view to future reprivatization).

This restructuring phase is fraught with difficulties and potential setbacks. The efficiency with which the authorities implement these steps will determine both the overall cost of the bank restructuring efforts and the extent to which a vibrant and efficient banking system emerges from the

[9]Undercapitalized banks are banks operating below the legal minimum capital adequacy ratio (CAR). Insolvency is often defined as operating with a CAR of zero or less. In some countries with prompt corrective action regimes, the law may oblige supervisors to intervene a bank when its CAR falls below a certain threshold (between 2 percent and 4 percent in some countries).

crisis. However, experience points to a number of implementation problems.

- *Delays*. Failure to move expeditiously in restructuring will only allow the financial condition of the banks to deteriorate further and increase resolution costs. Banks rarely, if ever, grow out of serious financial difficulties.
- *Excessive forbearance*. Crisis resolution should not aim at protecting all banks. Viable banks should be closely monitored and nonviable banks should be removed from the system. The judgment on the viability of a bank is difficult but must be made based on the best information available.
- *Loss-sharing of shareholders*. In all cases, shareholders must be responsible for the accumulated losses of their banks. Otherwise, shareholders have the wrong incentives in managing their bank.
- *Comprehensive treatment of banks.* The resolution of banks must address all their outstanding problems. Partial resolution (while "praying for redemption") rarely works. The supervisors must be convinced of the inherent strength of the banks that remain in the banking system.
- *Inappropriate resolution tools.* Supervisors have a range of resolution tools such as liquidation, sale as a whole or in parts (including through P&A transactions), and nationalization. Authorities must ensure that the market conditions are appropriate for the tools used. For example, reliance on P&A transactions in an environment of shallow private markets can distort the resolution process.
- *Lack of political support*. Bank resolution necessarily implies redistribution of resources within the economy. Shareholders are expected to be first in line to absorb losses up to the full amount of their stake, but any additional losses might need to be absorbed by other stakeholders, such as holders of subordinated debt, depositors, other creditors, and the government (ultimately, the taxpayers). Differences within the government on how this burden will be shared can be exploited resulting in higher fiscal costs and a less efficient banking system.
- *Poor communications.* Lack of an appropriate communications strategy can limit the effectiveness of a resolution strategy. Private sector support is an important factor in implementing bank restructuring. Stability of private expectations gives a period of peace and calm; understanding of the government's objectives can generate important support.

8. Asset Management and Corporate Debt Restructuring

Asset management and corporate debt restructuring are the final component of crisis management. Corporate and financial sector restructuring are inextricably intertwined, being two sides of the same issue. A key aspect of this process is the orderly transfer of ownership and management of weak assets. Strengthening this process may include both legal and institutional reforms. For this reason, resolution of the banking system issues is ideally carried out in conjunction with resolution of corporate sector issues.

The objective in establishing an asset management company (AMC) is to remove the nonperforming loans (NPLs) from the books of the banks, allowing banks to return to their normal business, and maximize the recovery value. Asset management is complex and one of the important benefits of establishing an AMC is the managerial. Managing nonperforming assets is different from managing a lending institution. Techniques for managing assets may include restructuring of loan terms, disposition through auctions or other sales methods (which transfers management decision to the purchaser), conversion into equity stakes, and liquidations through court or administrative procedures.

There are a number of institutional options for managing impaired assets. Banks can manage them directly, or sell them to a specialized AMC, either privately or publicly owned. Specialized institutions are necessary when managing NPLs interferes with the daily running of the bank or when specialized skills are needed. While each institutional setup has advantages and disadvantages, experience suggests that, in general, privately owned asset management companies can respond quickly and efficiently while government-owned centralized AMCs (CAMCs) may be relatively more efficient when the size of the problem is large, special powers for asset resolution are needed or the required skills are scarce.[10]

Empirical assessments of the effectiveness of AMCs have suggested that the most successful ones have had narrow mandates.[11] AMCs can have either narrow or expanded mandates — the former take over and liquidate assets from closed institutions; the latter purchases assets from going concerns with a view to expediting corporate restructuring. AMCs have had only limited success in corporate restructuring. Political pressures, limitations of market discipline, and conflicting objectives have hampered the

[10]Ingves, Seelig, and He (2004).
[11]Klingebiel (2000) and Woo (2002).

expanded role of CAMCs. Moreover, expanded-mandate CAMCs have been used to recapitalize financial institutions by buying nonperforming assets at above market value. This recapitalization option is less transparent than more direct methods, converts the AMC into a loss-making operation to be covered by additional fiscal expenses, and provides the government with less leverage in the recapitalized institutions.[12]

In spite of considerable work on establishing and managing AMCs, success in resolving NPLs has been limited. A number of problems can arise:

- *Weak market demand*. Market demand for distressed assets may be weak, depending on the depth of the local market, openness to foreign investors, and the type of assets.
- *Weak property rights*. With unclear property rights and an inability of courts to enforce collateral, banks have little incentives to purchase NPLs or restructure existing NPLs.[13]
- *Unrealistic expectations about the recovery rate.*

9. Conclusions

The management of systemic crises is fraught with difficulties and potential setbacks. The tools for crisis containment and bank restructuring are powerful but, when misused, can set back the process of reestablishing financial sector stability. Accordingly, both the benefits and the potential pitfalls of crisis management tools must be well understood and carefully adapted to local conditions.

Bank resolution should be as efficient as possible. Bank resolution strategies should be comprehensive and complete. Moreover, the faster the recognition and resolution of banking distress, the less costly will be the resolution. Strong political support is necessary to ensure the full implementation of the strategies designed. Particular efforts should be made to ensuring that the legal system is adequate for the strategy adopted. Experience suggests that the biggest threats to successful restructuring of the banking system include failure to complete the restructuring, excessive

[12]Lindgren *et al.* (1999).
[13]Sheng (2003).

forbearance, failure to ensure loss sharing of shareholders, inconsistent treatment of banks, and lack of political support for the process.

References

Baer, Herbert, and Daniela Klingebiel, 1995, "Systemic risk when depositors bear losses: Five case studies," in *Research in Financial Services: Private and Public Policy*, Vol. 7, George Kaufman (ed.), Stanford, CT: JAI Press, pp. 195–302.

Fung, Ben, Jason George, Stefan Hohl, and Guonan Ma, 2004, "Public asset management companies in East Asia: A comparative study," Bank of International Settlements, occasional paper, No. 3, February.

Hoelscher, David, and Marc Quintyn, 2004, *Managing Systemic Banking Crises,* Washington: International Monetary Fund.

Hoggarth, Glenn, and Jack Reidhill, 2003, "Resolution of banking crises: A review," *Financial Stability Review*, December, pp. 109–123.

Ingves, Stefan, Steven Seelig and Dong He, 2004, "Issues in the establishment of asset management companies," International Monetary Fund, policy discussion paper, No. 04/03.

Kane, Edward J., and Daniela Klingebiel, 2004, "Alternatives to blanket guarantees for containing a systemic crisis," *Journal of Financial Stability*, forthcoming.

Klingebiel, Daniela, 2000, "The use of asset management companies in the resolution of banking crises: cross-country experience," World Bank, policy research paper, No. 2284.

Lindgren, Carl-Johan, Gillian Garcia, and Matthew Saal, 1996, *Bank Soundness and Macroeconomic Policy,* Washington: International Monetary Fund.

Lindgren, Carl-Johan, Tomas Baliño, Charles Enoch, Anne-Marie Gulde, Marc Quintyn, and Leslie Teo, 1999, *Financial Sector Crisis and Restructuring: Lessons from Asia*, Washington: International Monetary Fund.

Sheng, Andrew, 2003, "Reflections on financial sector restructuring," World Bank/IMF/SEACEN regional seminar.

Woo, David, 2000, "Two approaches to resolving nonperforming assets during financial crises," International Monetary Fund, working paper, No. 00/33.

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The Deposit Insurer's Role in Maintaining Financial Stability

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1. Introduction

Dealing effectively with systemic financial crises and the resolution of large bank insolvencies has always been an important subject for those working in the financial system safety net.[1] But, it is becoming even more critical in a world of ever greater consolidation and globalization in financial services.

The focus of this paper will be to examine the deposit insurer's role in maintaining financial stability and protecting depositors in the face of systemic financial crises or large bank insolvencies. The paper will address these issues from a practitioner perspective and use examples drawn from Canadian and international experiences with the use of deposit insurance.

2. Deposit Insurance Systems

To begin with, it should be stated that every country has some form of deposit insurance system — whether they acknowledge it or not. Some systems are explicit; the rest implicit. The growing number of explicit deposit insurance systems — 85 at last count — attests to their value and importance in any modern financial system.

Deposit insurance systems are difficult to compare. They have varied mandates and powers which depend on their stated public policy objectives. And, these mandates and powers will determine the extent to which a deposit

[1]A financial system safety net typically includes the functions of prudential regulation and supervision, lender of last resort facilities and some form of deposit insurance.

insurer can deal with the resolution of a troubled bank. Moreover, deposit insurers can only be effective if they are operationally independent and part of a well-functioning financial system safety net, supported by strong prudential regulation and supervision, effective laws that are enforced, and sound accounting and disclosure regimes.

There are three basic categories of deposit insurers around the globe: "payboxes", "least-cost" systems, and "risk-minimizers".

The Canada Deposit Insurance Corporation ("CDIC") is known as a "risk minimizer". It sets conditions of membership, controls entry of new members, assesses deposit insurance premiums, and takes necessary insurance action — such as risk assessment and management, imposition of financial sanctions, termination of policy, and early intervention. It also sets its own standards of sound business and financial practice. The standards require that CDIC members operate in a sound and prudent manner and manage effectively the risks to which they are exposed. These risk-minimizing powers form a large key to CDIC's success.[2]

Limited paybox deposit insurers, on the other hand, play little role in resolving bank failures.[3] This task usually falls to the government and central bank.

The difference between a least-cost and a risk-minimizing deposit insurer is that a least-cost mandate refers to finding the least-cost solution after a bank is in trouble: A least-cost deposit insurer is usually only called upon to act after the supervisor has exhausted its arsenal of powers.

A risk-minimizing mandate, on the other hand, calls upon a deposit insurer to assess and monitor the risk posed by providing deposit insurance, to minimize its exposure to loss on an ongoing basis, and to be prepared to

[2]The CDIC was established in 1967 by an Act of Parliament. The corporation reports to Parliament through the Minister of Finance. CDIC is governed by a Board of Directors which includes all the major financial system safety net players — as well as independent private-sector directors. CDIC's objects are to provide insurance against the loss of part or all of deposits, to be instrumental in the promotion of standards of sound business and financial practices for member institutions, and to promote and otherwise contribute to the stability of the financial system in Canada. These objects are to be pursued for the benefit of depositors and in such a manner as to minimize the exposure of the corporation to loss.

Since its inception in 1967, CDIC has dealt with 43 member institution failures and protected $23 billion in deposits. Stability has been maintained and no "runs" have occurred. But, resolving failures has been costly in Canada amounting to almost $5 billion over the past three decades. Virtually all of these costs have been borne by the industry through premium collections — and not by taxpayers.

[3]Throughout the paper the term "bank" is used to refer to all financial institutions which accept deposits from the public.

act prior to a bank getting into trouble. A risk-minimizing mandate requires there be strong collaborative relationships among safety net participants, free flow of information, and a number of checks and balances between the supervisor and deposit insurer.

To ensure there is close cooperation and exchange of information, there need to be specific provisions in legislation to support such arrangements. Furthermore, both the supervisor and deposit insurer should work closely to mitigate any unnecessary duplication of efforts.

3. Deposit Insurers' Role in a Systemic Crisis

The term "systemic crisis" is often used to describe different things. What may be systemic to one country may not be to another. With that in mind, we define the term systemic to describe a situation involving a major shock or a meltdown of a financial system. This would not typically include the insolvency of a very large bank unless its failure would lead to a systemic crisis.

Given that deposit insurers do not operate in a vacuum, what role can they play in a systemic crisis? The practical answer is very little. Resolving a systemic crisis is the central task of a government. Deposit insurers are not equipped to deal with the magnitude of such catastrophes but can form part of the solution depending on the nature of the problem and the insurer's mandate and powers.

When systemic crises do occur, governments often respond with blanket guarantees. Though blanket guarantees come plagued with moral hazard concerns, they are a viable option for a government facing a complete financial system meltdown. Their ability to buy time to work out problems and to maintain confidence in the system while it is being stabilized more than outweigh any problems related to moral hazard.

As situations stabilize, however, some countries have called upon their deposit insurers to play a vital role in restructuring their banking systems and in handling nonperforming loans. In other countries, deposit insurers are established as blanket guarantees are removed, while asset management companies are created to handle nonperforming loans.

4. How can a Deposit Insurer Help Mitigate the Risk of a Large Bank Failure?

Perhaps the most successful role a deposit insurer can play in mitigating a large bank failure is to take proactive steps to assure that a bank

is "too-good-to-fail". A deposit insurer can work with other safety-net participants to provide incentives for banks to manage their business prudently and in accordance with sound corporate governance and risk management procedures. This can include the imposition of financial sanctions when these procedures are not followed. To this end, CDIC enforces its standards of sound business and financial practice, which can adversely affect a member's standing in our differential premium system.

Every institution should demonstrate that it has good corporate governance and sound risk management within an effective control environment. This responsibility ultimately rests with the board of directors and senior management of a bank. They should also be held personally liable when a bank fails and the failure can be attributed to mismanagement. After all, these people are the "directing minds" of the institution and the trustees of depositors' money. There is no excuse for malfeasance on their part. In Canada, if a bank fails and CDIC is satisfied that there is a cause of action, the Corporation will not hesitate to litigate.

Another important role of a deposit insurer is to instill confidence and promote stability in the financial system. The deposit insurer should conduct public awareness and educational campaigns in good times to ensure that the public understands the benefits — and limitations — of the deposit insurance system. This will serve well in bad times and mitigate bank runs.

5. Early Warning and Prompt Corrective Action

Despite the best efforts of safety net participants, banks can and do fail. Thus, it is necessary to have in place an institutional and legal framework governing early warning, intervention, and the taking of prompt corrective action. This framework should consist of clearly defined roles and checks and balances among the safety-net participants. It must also be clearly understood by individual banks.

In Canada, a formal "Guide to Intervention for Federal Financial Institutions" has been published to deal with these matters. It summarizes the circumstances under which intervention measures may be expected, and it describes the coordination mechanisms in place between the relevant federal supervisory authorities. The system uses four stages (1 = early warning, 2 = risk to financial viability, 3 = future financial viability in serious doubt, and 4 = insolvency is imminent). The guide outlines what banks

can normally expect when encountering difficulties and serious problems. However, it is important to note that this intervention process combines both a rules based approach and discretionary elements and is not a rigid regime under which every bank or every situation is necessarily addressed with a predetermined set of actions.

The recent Asia-Pacific Economic Cooperation ("APEC") Policy Dialogue on Deposit Insurance, which was held in Kuala Lumpur in February 2004, recommended that policymakers introduce trigger mechanisms for prompt corrective action when dealing with troubled institutions as these measures reduce costs to depositors and the deposit insurer, contribute to financial system stability and help reduce the likelihood of an isolated bank failure turning into a financial crisis.[4]

The question remains, however: What should those trigger mechanisms be? While most countries tend to focus on capital insolvency, waiting for a bank to become hopelessly insolvent is one of the best ways to ensure for costly and disruptive failures. For that reason we suggest that a "nonviability" determination be the trigger for intervention. This can include such factors as concerns over the bank's ability to meet capital requirements on an ongoing basis; a deterioration in the quality or value of assets; liquidity problems; or severe declines in earnings. Unlike other trigger mechanisms, this type of approach provides greater flexibility to act promptly, and if necessary, initiate closure or other proceedings.

Like an intervention guide, trigger mechanisms must also be clearly defined, transparent and credible, and banks need to understand the circumstances under which intervention will occur.

6. Failure Resolution

Failure resolution is a process involving valuing the assets of a failed bank, finding acquirers for all or part of the assets, liquidating the assets and reimbursing depositors. Effective failure resolution mechanisms help deal with troubled banks early and facilitate orderly resolution options which minimize disruptions and costs. A key challenge in this process — particularly with respect to large bank failures — is balancing the need to maintain financial stability with the need to minimize moral hazard and losses to the insurer and other parties.

[4]Asia-Pacific Economic Cooperation (2004).

There are three basic approaches to failure resolution: closed bank transactions; open bank assistance; and the use of bridge banks.[5]

(1) Closed bank resolution

Closed bank resolutions generally involve purchase and assumption transactions and depositor payouts. These transactions have the advantage of some degree of finality — that is, of generally not allowing the problems in the bank to occur again. They also tend to be more transparent and straightforward than the other alternatives: this holds particularly true for a deposit payout and liquidation.

However, when it comes to large bank insolvencies; closed bank assistance can be very problematic. A depositor payout may be too costly for the insurer and too disruptive of the financial system. A purchase and assumption transaction may be difficult to arrange due to the size and complexity of the failing bank and the availability — or lack thereof — of potential acquirers.

(2) Open bank assistance

In an open bank resolution the deposit insurer (or other safety net participant) provides financial assistance to the failed bank while it remains open. This can include capital injection, loans, asset purchases or other assistance. Private investors could also provide additional capital to restore the bank to solvency. The advantage of these approaches is that they keep the bank operating and can help avert a widening of financial instability.

But, open bank assistance can erode market discipline and lead to moral hazard problems. This is because it can protect insured and uninsured depositors, other creditors and the directors and managers responsible for the problems in the first place. Moreover, at the end of the day the resolution may not work and end up costing the insurer and financial system even more.

(3) Bridge bank

A bridge bank is similar to a purchase and assumption but the deposit insurer acts temporarily as the acquirer, taking over operations of the failed bank and maintaining banking services to customers. This is particularly useful in cases where the failure is large and complex. But, like open bank assistance there are hazards. Running institutions takes time, expertise and financial resources. And, the final resolution can be delayed for long periods — which can add to costs.

[5]Bennett (2000).

In its past, CDIC has made use of three primary methods of failure resolution: formal liquidations, in which CDIC pays depositors' claims and "stands in their shoes" as assets are normally liquidated; purchase and assumption agreements, in which CDIC assists another member institution in acquiring the failed bank; and deficiency coverage agreements, in which a third party acquires the impaired assets of a member with CDIC guaranteeing those assets to a specified limit.

The decision over which resolution method to take is made in light of CDIC's loss minimization mandate. The CDIC also has the authority to provide financial assistance such as making or guaranteeing loans, with or without security for members; acquiring assets; and making or guaranteeing deposits.

One of the most useful tools CDIC has in its arsenal — especially when considering the resolution of large insolvencies — are CDIC's Financial Institutions Restructuring Provisions or "FIRP" powers. CDIC can apply for an order vesting the shares of an institution in CDIC allowing us to take control of a bank. FIRP provides a temporary solution until a more permanent one can be found. It allows the Corporation to effect a transaction with a third party and to argue, if necessary, about the value of the institution to shareholders later. There are many advantages to FIRP. First, it may be worthwhile to keep a failing member operating for a brief period until a prospective acquirer can finalize its assessment of the institution's condition in order to make a reasonable offer. Second, if it continues to operate in the normal course, the member can retain much value and there is less disruption to its depositors and other customers. Third, the moral hazard that arises as a result of prolonging the operations of a non-viable member institution is to a great extent eliminated because of the expeditiousness of the FIRP process — 90 days.

Finally, FIRP expands CDIC flexibility, especially when obtaining voluntary concessions from a holding company, other shareholders or subordinated debtholders becomes a difficult and protracted process.

7. The Need for Contingency Planning

Given the fact that failures are costly and can be unexpected, safety net participants should develop contingency plans and undertake simulations in order to assess their capacity to deal with large failures. Because the financial landscape is constantly evolving, enhancing systems and practices and providing training to employees is exceedingly important

for deposit insurers. What could cause a bank to fail? What situations could occur to create a "perfect storm"? What options might be available to respond to such possibilities? These questions need to be answered. Deposit insurers must be ready and able to deal with failures before they occur.

8. Legal and International Issues

Crucial to a successful failure resolution is the presence of legal and insolvency regimes that permit early bank resolution and, if necessary, closure. Dealing with cross-border insolvencies requires strong international information-sharing agreements and ultimately the harmonization of legal frameworks to deal with bank failures. The latter task is by no means insurmountable, for it would require the harmonization of bankruptcy or insolvency laws only for international financial institutions, not for all firms in general.

It is also important to note that in many countries individuals working for deposit insurers and other safety net participants are held personally liable for the decisions they make in the normal course of carrying out their duties — even when those decisions are taken in good faith. For obvious reasons, this type of regime can inhibit the "will to act" and stymie any attempts to take the sorts of prompt corrective measures necessary to deal with a large troubled bank.

All the risk-minimization techniques and early intervention powers in the world will be of no use if individuals do not have the proper incentives to apply them. The importance of this principle was recognized in the outcome of the APEC Policy Dialogue on Deposit Insurance which recommended that legal protection be provided for individuals working for deposit insurers and other safety-net participants.

Finally, the International Association of Deposit Insurers ("IADI") is currently developing guidance on the resolution of bank failures — large and small — from the perspective of deposit insurers. That research will complement some of the excellent studies in this area being undertaking under the Bank for International Settlements umbrella, at the International Monetary Fund, the World Bank, and other international organizations. Dealing with bank failures will be an important topic at IADI's upcoming third annual conference, taking place from October 26–27, 2004, in Brunnen, Switzerland.

9. Conclusion

In closing, it should be emphasized that deposit insurance alone cannot resolve a financial crisis. What deposit insurance systems can do, however, is contribute to financial stability and to the orderly resolution of failures when mandated to do so and when working with other safety-net participants.

The importance of risk mitigation, early warning systems and prompt corrective action in dealing with troubled banks should also be recognized. To mitigate risk, strong incentives must be provided by the safety net to promote sound governance and risk management practices at all banks.

The early detection, intervention and closure of problem banks help reduce costs to the insurer and the financial system. Procedures for doing so must be transparent, well defined and understood by safety net participants and the financial industry. Early trigger mechanisms for intervention and failure resolution need to be instituted, and they must be well defined, transparent and credible.

Moreover, in order to ensure that there are strong incentives for effective prompt corrective action on the part of authorities, individuals working for deposit insurers and other safety-net participants should receive legal protection for actions taken in good faith.

With respect to failure resolution, an effective failure resolution process must take care to minimize disruptions and costs. At the same time, no bank is "too-big-to-fail". Boards and management must not emerge unscathed from any resolution process and must bear their fair share of the losses. And, the capability of deposit insurers to undertake effective failure resolutions can be significantly enhanced by following a strategy of proactive readiness and undertaking contingency planning for potential failures in the event they do occur.

Finally, deposit insurers and other safety-net participants around the world need to continue to work together to share information and experiences in dealing with bank insolvencies.

References

Asia-Pacific Economic Cooperation, 2004, "APEC policy dialogue on deposit insurance: Key policy conclusions paper," 25 June, available at www.iadi.org/html/App/SiteContent/APEC%20Policy%20Dialogue%20Paper%20-%20Final%20V9PDF.pdf

Bennett, Rosalind L., 2000, "Failure resolution and asset liquidation: Results of an international survey of deposit insurers," *FDIC Banking Review*, Autumn.

Canada Deposit Insurance Corporation, 2003a, *Annual Report 2003*, Ottawa, ON, available at www.cdic.ca/bin/cdicar_e.pdf

———, 2003b, "International survey of deposit insurance systems," Ottawa, ON, survey.

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The IMF–World Bank Financial Sector Assessment Program: A View from the Inside

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The International Monetary Fund–World Bank (IMF–WB) Financial Sector Assessment Program, or FSAP, evolved as a response to the Asian financial crisis of the late 1990s. The FSAP program was designed to strengthen the IMF's capacity to perform financial sector surveillance, to identify emerging financial sector vulnerabilities, and help identify financial sector development needs that could be addressed through the IMF–WB technical assistance programs. Internal IMF–WB documents have articulated FSAP program goals that include "help[ing] countries enhance their resilience to crisis and foster[ing] growth by promoting financial stability and financial sector diversity".[1]

Formally launched in May 1999 as a pilot program with 12 country participants, the FSAP was accepted as a regular IMF–WB function in 2002. By spring 2005, more than 100 FSAPs and FSAP updates will be completed or underway. Participating countries include many that are home to global financial centers (United Kingdom, Germany, Switzerland, Japan, Hong Kong, Singapore, and Luxemburg), many countries with advanced financial sectors (The Netherlands, Italy, Sweden, Finland, Norway, France, Canada, Ireland, New Zealand, Austria, and Iceland) as well as many countries with transitional and developing financial sectors.

When the FSAP program was approved in 2001, the IMF–WB operational goal was to complete about 24 FSAPs a year. Experiences following the pilot program showed that this goal was overly optimistic, and subsequent to a 2003 program review, the targeted number of FSAPs was reduced

[1]Financial Sector Assessment Program — Update. September 11, 2002.

to 17 countries per year. At this pace, it was envisioned that every member country could receive a full financial sector assessment about once every ten years.

Participation in the FSAP program is voluntary, but in some cases the IMF has exerted pressures to encourage the participation of member countries. The FSAP is in large part a surveillance program, and some have suggested that participation in the FSAP could be made mandatory under the IMF's Article IV powers. Developing countries, as a general rule, have been forthcoming as volunteers for the FSAP in part because of the program's promise of follow-on technical assistance for supervision and financial sector development. As the FSAP developed from its original 1999 pilot program, the IMF was keen on expanding the program to include member countries that incorporate the world's primary financial centers. Notable holdouts in the voluntary process (as of September 2004) include the United States, China, and Australia.

A country that participates in the FSAP is the recipient of a financial system stability assessment (FSSA). The FSSA process involves a significant commitment of time and staff resources for the preparation of self-assessments and questioners as well as the review of materials prepared by the IMF and WB. FSSAs typically are scheduled in a period between a member country's Article IV missions.[2] Most FSSAs require a participating country to host two major missions. These missions include IMF and WB staff as well as financial sector experts that are either borrowed from member country central banks and supervisory organizations or hired on as IMF–WB temporary contract employees.[3] Some FSSAs, notably those for the United Kingdom, Japan, Italy, and France, were implemented over a larger number of missions that were smaller in size and focused on only a subset of the FSSA's areas of interests. Other FSSAs have been accomplished in a single mission, notably New Zealand and Saudi Arabia. Following the preparation of the FSSA, the mission leader typically will participate in the next IMF Article IV mission to presented and discuss the missions' findings.

[2]While most FSAPs have been completed with a single Article IV cycle, some have taken longer have spanned multiple cycles (Japan and Singapore are two examples).

[3]FSAP financial sector experts that are hired on contract typically are recognized experts who are retired from member country central banks and supervisory organizations or international organizations.

The output of an FSSA exercise includes official IMF and WB reports that are presented to national authorities. The IMF document is called a "financial system stability assessment" (FSSA), and all FSSAs are discussed by the IMF board of directors as a part of the Article IV review process. FSSA documents are not automatically made public. Countries may choose to publish their FSSA reports and ask for the deletion of sensitive materials according to the protocols that apply to Article IV reports. Members are not obligated to make FSSA or Article IV reports public. Through September 2004, 48 of the completed FSSA reports have been published by the IMF.

Among the FSSAs that have been undertaken, many share characteristics that can be classified into one of a few stylized types. Some developed countries seemingly undertake an FSSA with a goal to promote and reinforce a specific financial sector domestic agenda. Other countries seem to have undertaken an FSSA to achieve a "high grade" as signal that will reinforce investor perceptions of stability. Other developed countries have undertaken an FSSA as a response to peer pressures. While experiences differ, many developing countries embrace the FSAP as a mechanism for transferring knowledge regarding international best practices for financial sector legal, regulatory, and supervisory standards.

The FSSA report includes two basic dimensions. One dimension is a financial sector stability assessment of the member country. This segment ideally will include an analysis of the underlying trends and vulnerabilities in the macro economy and a discussion of the implications of these tends for the financial sector. Ultimately the report should make an assessment regarding the balance of financial sector risk exposures that are present and the offsetting quality of supervision, crisis management, and regulatory infrastructure that are in place to safeguard financial sector stability. The report should identify any acute supervisory weakness or economic vulnerability that could disrupt the smooth functioning of the financial sector. The report will also include a set of prioritized recommendations that are designed to improve and maintain the health and resiliency of the financial sector.

A second dimension of the FSAP report is a detailed assessment of selected aspects of a country's legal, crisis management, supervisory, and regulatory practices. Financial sector practices are compared with "best practice" as articulated by various international standard-setting bodies and

cooperative supervisory associations. While each FSAP will include a different set of assessments among all the possible codes and standards that can be evaluated, FSAP assessments most commonly include the Basel Core Principles for Effective Banking Supervision, the Committee on Payment and Settlement Systems–International Organization of Securities Commissions (CPSS–IOSCO) Recommendations for Securities Settlement Systems, and the IMF Code of Good Practices on Transparency in Monetary and Financial Policies. Other codes and standards that are also frequently assessed include: the IOSCO Objectives and Principles of Securities Regulation; the International Association of Insurance Supervisors (IAIS) Insurance Core Principles; Core Principles for Systemically Important Payment Systems; and the Financial Action Task Force (FATF) Recommendations for Anti-Money Laundering and Combating the Financing of Terrorism.[4] Although far less common, some FSSAs also include assessments of: the Organization for Economic Cooperation and Development (OECD) Corporate Governance Principles, The World Bank Principles for Effective Insolvency and Creditors Rights, and the International Accounting and Auditing Standards.

As is evidenced in part by the length of the list of possible codes and standards that might be included in an FSSA, the international standard-setting business has been a growth industry. My personal FSAP experience suggests that not all codes and standards assessments are of equal value regarding their ability to identify vulnerabilities and associated remedies that safeguard financial sector stability. From a stability perspective, an assessment of the Basel Core Principles for Effective Banking Supervision is the most relevant. Because banking systems are the fundamental part of all financial sectors, the Basel Core Principle assessment is crucial for forming an overall opinion on a countries financial sector health. Outside of countries that host major international financial centers, payments system specifics, while important, are unlikely to be identified as an acute source of potential instability. Similarly, few countries have the deep and active securities markets for which the IOSCO codes were designed. The IOSCO assessment methodology has grown in size and complexity and now includes very detailed analysis of legal and organization issues that

[4]Following the events of September 11, 2001, the assessment of the FATF Anti-Money Laundering Standard became mandatory.

are benchmarks for financial sector development but seemingly have little immediate relevance for financial sector stability.

The proliferation of the number and complexity of internal standards and code assessment methodologies was mirrored by an increase in the number of standards and codes that were assessed in FSSAs following the 1999 pilot FSAP program. Standards assessments are very time-consuming for both the participating country and the IMF–WB staff, and FSAP costs increased commensurately. Following the 2003 IMF–WB internal FSAP program review, guidelines recommend that future FSSAs be limited to three codes and standard assessments.

The FSAP codes and standards assessments are usually conduced by subject matter experts borrowed from member country central banks and supervisory organizations. Among the codes and standards, only the Basel core principles assessment mandates that the assessment be conducted by two experts. The use of member country experts interjects a peer review component into the FSSA process. This peer review feature is a very positive aspect of the FSAP, as member countries gain valuable knowledge on international best practices not only by having an FSSA, but also by sending their staff to participate as mission experts on other countries FSSAs.

Prior to receiving an FSSA mission, participating countries are asked to conduct a self-assessment of the codes and standards that will be reviewed. These self assessments are shared with the FSSA mission experts. The FSSA assessment of codes and standards builds on a country's self assessment. Subject area experts evaluate a country's legal and regulatory frameworks against recognized best practice standards according to standardized evaluation methodologies. Assessments also evaluate a country's supervision and enforcement history against the country's stated legal standards as well as internationally recognized best practice standards.

Overall, the FSAP record of performance is strong concerning the assessment of legal and regulatory frameworks. This part of the process, while time intensive, is straight-forward for the most part, as a countries written regulations and legal codes and traditions can be readily assessed. Performance is somewhat weaker regarding assessments of actual supervisory practices. The ability of FSSA experts to study supervisory case history is limited, and by their nature, many supervisory enforcement actions are kept confidential. The quality of the supervisory practice assessment is heavily dependent on the cooperation and candor of a country's supervisory community and in the investigate talents and detective instincts of the

assessing experts. These final components are subject to significant variation across FSSAs. Subject experts, moreover, are typically short-term contract IMF–WB employees who are allotted only a limited (and not overly generous) amount of time to complete lengthy assessment documentation. Defense of an allegation of lax supervisory practice is time consuming and often contentious. Assessments that include views that are not shared by a country's supervisory authorities require many time-consuming rounds of draft assessment commentary and rebuttal. Short-term contract employees do not face incentives that encourage the pursuit and defense of tough supervisory practice assessments.

The reports on participating countries' assessments of codes and standards are perhaps the most valuable part of the FSAP process. Not only does the peer review feature of this process foster an improved international understanding of differences in financial regulatory philosophies and practices, but the process itself can be a very useful input and stimulus for orchestrating domestic regulatory reform. Among other findings and assessments, FSSA reports have, for example, supported changes in financial system legal frameworks; the creation of new supervisory authorities; changes in the governance structures of existing supervisory agencies; increased supervisory powers; and increased resources for existing financial sector agencies. In many countries, an IMF–WB recommendation can be a powerful stimulus to promote the passage and implementation of financial sector reforms.

The stability assessment component of the FSSA is based on a framework with two primary modes of analysis. One component, the so-called financial stability indicators, or FSIs, is a list of financial sector diagnostic statistics. The second FSSA mode of assessment is a stress test analysis of selected features of the financial sector environment or on a selected set of institutions in the financial sector. The expectations that have placed on the FSAP stability analysis are optimistic. The FSSAs have in some cases significantly overstated financial sector vulnerabilities and in other cases that have been unable to identify important risks that subsequently have lead to financial crisis.

FSI analysis is essentially the discussion of a list of financial sector diagnostic indicators that include *inter alia*, data on bank capitalization ratios, profitability, nonperforming loans, banking sector loan concentrations, as well as measures of banking sector exposures to foreign exchange, interest rate risk, and credit risks from various financial sectors. While the IMF

staff has produced a number of papers that represent the FSAP FSI as a methodology for assessing financial sector stability, in reality the compilation of FSIs is an *ad hoc* exercise. There is little or no research, either within the IMF–WB or externally, that truly outlines a scientific methodology for linking FSAP FSIs analysis to reliable assessments of the health financial sector. The quality of an FSSA stability assessment depends largely on the quality of economic intuitions and instincts of the FSSA mission team.

There is no doubt that FSSA missions have the need to compile financial sector statistics as a means for conveying information on the health of the financial sector. What is perhaps less clear (externally at least) is that there is no standardized IMF–WB methodology for assessing financial sector health using FSIs. In many FSSAs, the link between FSIs and financial sector health is either completely obvious (and the country circumstance already well known) or completely lacking regarding FSIs that are reported in an FSSA.

While many FSSAs include common measures of banking sector health and performance, the list of compiled FSIs is not standard across FSSAs. Indeed the FSIs that are reported depend largely on the financial sector data that is made available by national authorities. Even if the set of FSI statistics collected were to become standardized, difference in national laws, accounting, or other practices may render many FSIs non-comparable across country experiences or to international averages. To take two specific examples, differences in legal loan write-off rules can complicate the interpretation of bank non performing loan measures. Differences in national treatment of the accounting for goodwill may distort comparisons of bank profitability measures. Other idiosyncratic national features can complicate the interpretation of FSI statistics. The upshot is that even a standard set of FSIs need not have a standard interpretation. Again, the quality of the FSSA will depend of the FSSA team's ability to identify material variances in practices and standards and adjust the economic analysis accordingly. One particular area that has been problematic in some FSSAs has been a failure to appreciate nuances in and the enforcement of national accounting standards.

One case were accounting issues became particularly problematic was the FSSA for the Dominican Republic. The Dominican Republic's FSSA was completed in May 2002 without the identification of any serious financial sector risks or vulnerabilities. In March 2003, it was revealed that the country's third largest bank had kept a double set of books for 14 years. The bank had diverted a large volume of its resources into gifts and

nonperforming loans to government officials. The bank was insolvent and resolved in July 2003. Bank liabilities were paid in full and taxpayers were forced to cover losses in excess of 15 percent of gross domestic product. These large losses and dissatisfaction with government policies triggered a loss of investor confidence. Inflation soared to 43 percent in 2003 and the peso lost more than half of its value against the U.S. dollar. The financial sector crisis triggered the first recession in the Dominican Republic since 1990, and through mid-year 2004, central bank 14-day certificates of deposit were still carrying an interest rate of 60 percent. The fact that an FSSA was unable to detect such a massive fraud is troubling. When fraud is perpetrated on a massive scale, a scale large enough to bring on a financial crisis and subsequent recession, one might imagine that it should leave some trail or hint of its existence in the history of the banking sector's performance or in the monetary aggregates and an FSSA could identify such a trail.

Stress testing analysis is the second component of the financial stability analysis. Stress tests are used to identify potential vulnerabilities in selected institutions or financial sectors. Stress tests often are designed with the cooperation of the national authorities with a goal to quantify the systemwide exposures that may result from a significant change in financial market fundamentals. The scenarios are usually specified as partial equilibrium "what if" type exercises where estimates of the balance sheet consequences of a financial event are quantified using data from a number of institutions or with aggregate data. Stress tests usually focus on the banking system, but some FSSA stress tests include the insurance sector. The potential exposures that arise in stress scenarios may be estimated by IMF–WB staff, national authorities, or in some cases by individual institutions themselves.

Similar to the FSI component of the financial sector analysis, there is no standardized methodology for the construction, estimation, and interpretation of FSSA stress tests. While stress tests are often thought of as a diagnostic tool of discovery, there is little reason to believe that FSSA stress tests have unique value for identifying latent financial sector vulnerabilities. The vulnerabilities that are investigated in FSSA stress test scenarios typically are either already obvious in the data or they have been identified by the authorities or through mission specialists' analysis of the financial sector. In reality, the FSAP stress test serves as a tool for quantifying the magnitude of a risk that is already evident. The production of an estimate of the potential losses that may arise in an agreed upon stress scenario, however crude the estimates, is merely a useful device for focusing regulatory

attention on a specific set of issues or exposures. Rarely if ever has an FSSA stress test been the method that identified a financial sector vulnerability.

The view that FSAP stress testing has little independent value as a tool of discovery is certainly not a view that was widely held at the start of FSAP program. Many IMF–WB staff held wildly optimistic expectations for the FSSA stress test. For many, the stress test was envisioned a macro version of a bank value at risk model. Like the FSIs, FSSA stress-testing has been promoted as if it were an integral part of a well-formulated methodology for identification of financial sector vulnerabilities.

Stress-test estimates typically are based on balance sheet data for the banking sector. Exposures that may arise from off-balance-sheet and derivative positions are rarely quantifiable. Data on these positions are either unavailable, or if they are available, the data are in a form that does not allow estimates of potential stress losses (for example, only notional data, or the net market-to-market values on derivative aggregates). Data limitations make it virtually impossible to assess the full implication of a stress-test scenario. Stress tests are also partial equilibrium exercises that focus on one aspect of the financial sector in isolation. Often, this approach has led to a distorted view of risk and ongoing sources of banking sector profitability that are not highlighted in a stress scenario are ignored. For these reasons among others, it is probably better to think of an FSSA stress test as a way of crudely quantifying a known potential source of financial sector risk.

Notwithstanding significant weaknesses in the FSI and stress testing analytical tools of the FSAP, the FSSA process does create significant surveillance information that is not collected in the Article IV process. The value-added in the FSSA arises primarily from the professional assessments made by a mission's financial sector experts including many who are experts borrowed from member country central banks and supervisory agencies. In competent hands, the FSIs and stress-test exercises are tools that are useful for telling a story and supporting conclusions that have been deduced from a holistic review of the financial sector. The FSIs and stress tests do not, however, constitute a standalone methodology for detecting vulnerabilities. The quality of the FSSA stability assessment is determined by the quality of the judgments that are made by financial sector experts reviewing a member country.

While time and resource intensive, FSSAs have value-added in part through the information dissemination benefits that arise through the process of peer evaluation of regulatory and supervisory codes and standards,

from the support that they can provide for domestic reform agenda that are consistent with FSAP findings, and perhaps to a lesser degree, from the value-added they provide in the identification of financial sector vulnerabilities. While the FSAP has some important benefits, it also has potential costs that could create serous economic consequences for a member country. To date, there are not any obvious cases in which the FSAP process has created serious costs or distortions in member countries.

One potential FSAP cost is in part generated by the incentive structure within the IMF. This structure rewards guarded assessments that emphasize the potential for negative economic outcomes. There is little or no internal reward for being the first to identify an impending economic boom, but there may be significant career consequences for failing to identify an impending financial crisis or recession. Such an incentive structure promotes a downward bias in the average FSSA assessment. Moreover, once a country receives a negative assessment, it can be exceptionally difficult to get agreement within the IMF to reverse a negative assessment.[5] While such a bias may be of little consequence for a large widely-followed developed country, it potentially may have negative consequences for smaller nations whose domestic conditions are less widely followed by private sector analysts.

An example of culture-induced negative bias in assessments is the 2001 Iceland FSSA report which warned of acute financial sector vulnerability. Iceland had recorded exceptionally strong credit growth for a number of years and the consumer sector was highly indebted by traditional measures including a large component of foreign exchange borrowing. Iceland was experiencing rising inflation and pressures were evident in the currency market. Financial sector supervision was in need of a modern legislative framework and increased powers and funding. The FSSA's conclusion was, essentially, we've seen these conditions before in other countries and we conclude that they are a recipe for financial sector disaster. The stress test estimated that large losses would accrue in the banking sector should the currency depreciate. Particularly at risk were foreign exchange denominated borrowings. The FSSA recommended a number of reforms that were in large part consistent the central bank's existing reform agenda.

[5]Within the IMF, the Policy Development and Review (PDR) department is unique in that it has an independent voice at IMF board discussions. PDR seemingly faces no downside risk or cost when it objects to another department's report that attempts to reverse a prior negative IMF assessment.

Following the 2001 FSAA, financial sector pressures in Iceland increased and the doomsday scenario envisioned in the FSSA materialized. The currency was devalued. The change in the terms of trade led to reduced imports, export growth, and a large current account surplus. While a recession in the domestic consumption sector led to increased unemployment and an increase in bank nonperforming loans, all but a few small savings banks remained profitable throughout the stress period. While the FSSA correctly anticipated the stress scenario, it badly misestimated the consequences of the resulting financial market correction.

Following Iceland's financial sector adjustment, in part because of the FSSA report's dire predictions, Iceland was reevaluated in one of the first FSSA updates. Notwithstanding FSSA findings of a profitable and well functioning financial system, and credit upgrades by major credit rating agencies, many staff of the IMF were reluctant to recognize the strength and resilience of Iceland's financial sector and remove the earlier negative assessment of Iceland's financial sector condition.

Other potential costs of the FSSA are costs associated with the potential for the dispensation of misguided policy analysis. This issue is particularly problematic for developing member countries; these countries must adhere to IMF recommendations as a condition for receiving assistance. In the case of an east African country FSSA, the IMF–WB mission's preliminary findings identified significant vulnerabilities in the banking sector. The vulnerability assessment and associated policy recommendations however were revised before the FSSA was completed.

The FSSA at issue initially alleged that a restatement of loan loss reserves consistent with international practices would lead to undercapitalization in a large part of the banking sector. The FSSA recommended that the country's largest bank that included more than half the system's deposits be resolved. The bank, jointly owned by the government and a European bank of moderate size and capitalization, was assessed to be seriously undercapitalized and exhibiting a pattern business practices that suggested that it was headed toward larger losses should resolution be postponed. The European partner bank had resisted repeated recommendations that it inject additional capital into the bank in part because the European bank disputed the IMF's findings on loan quality and reserves, and in part because the government was unable to fund a pro rata share of the recommended capital injection.

When the IMF area department officials were informed of the preliminary assessment and the recommendation that the countries largest bank be resolved, they immediately asked for second opinion. A senior IMF banking sector expert was dispatched to form an independent assessment and review the FSSA mission's findings and this expert reached an alternative conclusion. He found that the country's largest bank was well managed and viable, and he recommended that it remain open. While the bank was less than optimally capitalized, its undercapitalization was unrelated to its ongoing business practices. The capital shortfall instead owed to a dispute involving government misrepresentations about the quality of the bank's loan portfolio that dated back to the time when the European bank originally purchased its shares from the government. After much internal discussion within the IMF, the second IMF expert's opinion prevailed and the new assessment and associated recommendations were adopted by the FSSA. The costs associated with such a large bank's unnecessary resolution were averted and the bank remained open and its capital position improved markedly over the following quarters.

References

International Monetary Fund, 2004, "Financial sector assessment program (FSAP): issues paper prepared by the independent evaluation office," Washington, DC, October.

———, 2003a, "Iceland: Financial system stability assessment update, including report on the observance and standards and codes on the following topics: Banking supervision, insurance regulation, payment systems, and monetary and financial policy transparency," country report, No. 03/271, August.

———, 2003b, "Financial soundness indicators — Background paper," Washington, DC, May.

———, 2003c, "Analytical tools of the FSAP," Washington, DC, February.

———, 2003d, "Financial sector assessment program — Review, lessons, and issues going forward," Washington, DC, February.

———, 2001a, "Iceland: Financial system stability assessment," country report, No. 01/85, Washington, DC, June.

———, 2001b, "Financial soundness indicators: Policy paper," Washington, DC, June.

———, 2000a, "Financial sector assessment program (FSAP): Lessons from the pilot and issues going forward," Washington, DC, November.

———, 2000b, "Macroprudential indicators of financial system soundness," occasional paper, No. 192, April.

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Financial Stability and Bank Solvency

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1. Introduction

Financial stability has long been a cornerstone of public policy in general and central banking policy in particular. Indeed, it predates monetary stability as an objective of central banks in most countries, including in the United States and the United Kingdom. The past few years have, if anything, seen a deepening and a strengthening of the public policy focus on financial stability matters. There is no sign of a let-up. Indeed, one school of thought has it that, in an environment of monetary stability, such financial stability events could come thicker and faster in the future than they have in the past (Crockett, 2000).

Despite this increased public policy focus, many of the key tenets of a framework for financial stability remain relatively vague. How is financial stability best defined and measured? What are the causes and welfare consequences of different manifestations of instability? And what instruments are best placed to mitigate these costs? Answers to these questions have, to date, largely eluded policymakers and academics.

Unlike monetary stability, financial stability has no off-the-shelf definition. Myriad definitions have been proposed in the literature (see, for example, Houben, Kakes and Schinasi, 2004). A great many of these definitions view financial stability through the prism of financial crises. Indeed,

some interpret financial instability even more narrowly, as a large-scale unanticipated collapse of the banking system which reduces the stock of money (for example, Friedman and Schwartz, 1963).

In this paper we take a somewhat broader definition. Financial stability can be thought to be, on the one hand, about enabling individuals to smooth consumption across time (for example, by saving and borrowing) or across states of nature (for example, through insurance contracts); and, on the other, about efficient financing of investment projects with saved resources. At root, it is about the saving–investment nexus (Haldane, 2004).

On this definition, financial *in*stability could be defined as any deviation from the optimal saving–investment plan of an economy deriving from imperfections in the financial sector. The advantage of this definition is that it is generic. It nests financial crises and specifically banking crises as a special case of financial instability; a drawing, if you like, from the tail of the financial instability distribution. Or put differently, a systemic banking crisis is a severe disturbance to the intermediated saving–investment nexus.

The relationship between systemic banking crises and financial stability more generally is clearly multi-dimensional. There are transmission channels working in both directions. Widespread banking insolvency may be sourced in general system-wide shocks to asset prices or real activity — a link from financial instability to banking crises; while systemic insolvency will itself typically have important implications for asset prices and real activity — a link from banking crises back to wider financial stability. We call this complex and interacting set of relationships the "solvency–stability" nexus; it is a subset of the saving–investment nexus.

This paper aims to explore this solvency–stability nexus, focusing in particular on the role of public policy in mitigating the welfare costs of financial instability. In Section 2 we consider some of the empirical evidence on links in the solvency–stability chain, most of it drawn from cross-country experience. Section 3 considers some of these same links using a calibrated, micro-founded model of the macro-economy. Section 4 provides a taxonomy of the various public policy instruments potentially available to the authorities to deal with instabilities; and it considers, in particular, different tools for resolving banking crises and the cross-country empirical evidence we have on the efficacy of those tools. Section 5 provides a general conceptual framework for assessing the welfare costs and benefits of

different degrees of public sector intervention in resolving banking crises. Finally, Section 6 concludes with a forward-looking discussion of some of the open issues on the banking resolution front which have yet to be tackled comprehensively.

2. Empirical Evidence on the Solvency–Stability Nexus

The solvency–stability nexus embodies two distinct set of relationships, from stability to bank solvency and vice-versa. To date, these two relationships have tended to be considered separately, at least from an empirical perspective, using distinct methodological approaches. Both sets of approach have to tackle the difficult identification problem of isolating the effects of an (at least weakly) exogenous shock to either asset price/activity or to the banking sector.

Empirical work on the relationship from broader macroeconomic instability to banking stresses has evolved rapidly over recent years; it is described in some detail below. This work focuses on the effects of drawings from the tail of the distribution of macro outturns to banking profits and capital. In general, these "stress tests" have tended to unearth a high degree of robustness of banking sectors over recent years, at least in developed countries, other than Japan.

Empirical work on the relationship from banking stress to the economy, which is also described below, uses as its identification criterion drawings from a distribution of banking stress — that is to say, systemic banking crisis. In general, these "event studies" have tended to uncover a large output cost of banking crises — or at least large output losses are associated with these crises — in both developed and developing countries.

2.1. *From financial instability to the banking system*

Assessing the impact on banks of possible changes in the external environment is something that banks themselves carry out as part of their scenario planning. Increasingly, it is also being considered by supervisors as part of their regular supervisory processes. Recent policy initiatives have given an added impetus to such stress-testing exercises. For example, stress tests are now routinely carried out as part of the International Monetary Fund's (IMF) financial sector assessment programs (FSAPs). These are health-checks on

the financial sector, which the IMF carries out on member countries as part of its surveillance activities. Stress-testing will also be an important element of Pillar 2 of the new Basel Accord. For example, macro stress-testing should help give an indication of whether a recession will result in a shortfall in banks' risk-weighted capital. This is relevant to the debate on the procyclicality of the new Basel Accord (see, for example, Kashyap and Stein, 2003).

To quantify the impact of a deterioration in the macroeconomic/financial environment on banks' solvency, a number of issues need to be considered. Single factor sensitivity tests or macroeconomic scenarios need to be devised. The former assess the impact on banks of changing one particular factor, assuming the rest of the economic environment remains unchanged. These tests are used most frequently to assess the vulnerability of banks to market risk — for example, a step increase in interest rates, a change in the slope of the yield curve, or an exchange rate depreciation.

Macroeconomic scenarios instead assess the impact on banks of a combination of changes in macroeconomic and financial variables. Scenarios are required that are low probability ("tail") events. In choosing these events, there is inevitably a tradeoff. Set the probability too high — and thus the size of shocks too low — and nothing would be learnt about how the banking system would fare in a period of stress. Set the probability too low and a complete collapse of the banking system will result, even though there would be almost no possibility of this event occurring.

Banks and financial authorities adopt a variety of approaches to devising scenarios. One approach is to develop a hypothetical adverse scenario, such as the impact of an extremely large rise in world oil prices. Another approach is to take a historical scenario — such as the early 1990s recession in the UK — and apply it to banks' current portfolios. A third approach is to devise scenarios from a quantitative model. This approach has the advantage of being able to isolate the original shock and ensure that its impact on the rest of the economy is consistently traced through according to the parameters of the model.

The impact of such scenarios on the banking system as a whole can either be built-up from banks' individual portfolios (a "bottom-up" approach) or from the average balance sheet positions of the banking system as a whole ("a top-down" approach). As part of the UK's FSAP, a hybrid approach was adopted. Specific macroeconomic scenarios were derived using an extension of the Bank of England's medium-term

macroeconometric model.[1] The outputs from these scenarios were supplied to ten large UK banks as inputs to their own assessments (the "bottom-up" approach). These results were compared with the Bank's own analysis of the impact of the scenarios on UK banks using aggregate reduced-form relationships linking changes in macroeconomic variables to banks' aggregate loan loss provisions (a "top-down" approach).

One of the stylized facts from these types of stress tests, which have been carried out in a number of developed economies, is that a scenario usually needs to involve a large decline in output to cause a significant increase in banks' write-offs. This is consistent with historical patterns, as major fluctuations in write-offs and provisions in banking systems have tended to mirror the economic cycle. Another feature is that it is difficult to devise plausible scenarios that threaten the solvency of banking systems at the present time — or, indeed, even threaten individual large banks within the system. In the stress tests carried out as part of the UK FSAP, for example, the estimated potential losses in no case exceeded UK banks' annual profits or represented a large fraction of banks' capital.

Clearly, some caution needs to be attached to these estimates. There may be sharp discontinuities in economic behavior and relationships in crisis periods both in how the initial shock affects the macroeconomy and, in turn, how the macroeconomy affects banks' balance sheets.

These estimates are also sensitive to the assumed monetary policy response. For example, in the stress tests carried out for the UK FSAP, the impact of a decline in aggregate demand was attenuated by the assumed loosening in monetary policy required to prevent price inflation falling below target. This policy response served to limit the adverse impact on the stability of the banking system. In addition, stress tests do not usually take into consideration the response of banks and their creditors, including other banks, to a balance-sheet deterioration. For example, although individual bank actions might be designed to reduce potential losses, their collective responses might intensify economic stress — for example, through a credit crunch. If the shock were big enough to cause the failure of a large bank,

[1]The initial shocks assumed in each scenario were a 35 percent decline in world and UK equity prices; a 12 percent decline in UK house and commercial property prices; a 1.5 percentage point unanticipated increase in UK average earnings; and a 15 percent unanticipated depreciation in the trade-weighted sterling exchange rate. For more details, see Hoggarth and Whitley (2003).

this might have a direct impact on the capital, or even solvency, of other (counterparty) banks.[2] It might also be the case that banks hold capital as insurance against much more extreme events than are usually considered in these types of scenarios.[3]

2.2. *From banking sector weakness to the macroeconomy*

Over the past quarter of a century, unlike the preceding twenty-five years, there have been a number of episodes of systemic banking problems around the world. For example Caprio and Klingebiel (2003) document 117 episodes of systemic crises and 51 cases of borderline or non-systemic crises in developed and emerging market countries since the late 1970s. "Systemic" is defined as pertaining to cases where all or most of the capital in the banking system has been exhausted.

Most cross-country comparisons quantifying the adverse impact on the economy of banking crises measure the fiscal resolution cost to the government. These include the various types of expenditure involved in rehabilitating the banking system, including both bank recapitalization and payments made to depositors (either implicitly or explicitly) through government-backed deposit insurance schemes. Estimates of these costs are shown in Table 1 below for 33 recent systemic banking crises. On average these costs are large — cumulatively, around 15 percent of annual gross domestic product (GDP). They are higher in emerging-market economies, especially when accompanied by a currency crisis.[4] For example, the cumulative resolution cost of the Indonesian crisis which began in 1997 was around 50 percent of GDP, while the recent Turkish crisis has so far cost the authorities around 30 percent of GDP.

These fiscal costs of bank resolution may simply measure a transfer of income from current and future taxpayers to bank "stakeholders", rather

[2]See Elsinger, Lehar, and Summer (2003) and Wells (2002).

[3]The UK shocks were calibrated to be in the order of a 1 in 200 event (that is 99.5 percent confidence) whereas our discussions with major UK banks suggest they hold capital to withstand 99.98 percent (3999/4000) events.

[4]A currency crisis is defined here, as in Frankel and Rose (1996), as a nominal depreciation in the domestic currency (against the U.S. dollar) of 25 percent combined with a 10 percent increase in the rate of depreciation in any year of the banking crisis period. The latter condition is designed to exclude from currency crises high inflation countries with large *trend* rates of depreciation.

Table 1. Fiscal costs and output losses in thirty three systemic banking crises 1977–2002[a]

	Number of Crises	Length of Crisis (Years), Average	Non-Performing Loans (Percent of Total Loans)[b], Average	Bank Credit/ Annual GDP (Percent)[c], Average	GNP per Head (U.S.$000s, PPP Basis) at the Start of the Crisis, Average	Cumulative Fiscal Costs of Banking Resolution (Percent of GDP)[d], Average	Output Losses 1[e] (Percent of GDP), Median	Output Losses 2[e] (Percent of GDP), Median
All countries	33	4.3	26.7	44.2	6.6	15.0	7.1	23.1
Banking crisis alone	10	4.6	23.7	44.9	7.3	7.8	2.4	15.7
Banking and currency crisis[f]	23	4.2	28.2	43.9	6.3	17.4	11.6	32.2

Sources: Caprio and Klingebiel, 2003; Hoelscher and Quintyn, 2003; Hoggarth and Saporta, 2001; Honohan and Klingebiel, 2003; OECD, 2002; and IMF, World Bank, and Bank calculations.

[a]A systemic crisis is defined as when all, or nearly all, the capital in the banking system is eroded. The crises are Finland (1991–1993), Japan (1992–), Norway (1988–1992), South Korea (1997–2000), Spain (1977–1985), Sweden (1991), Argentina (1980–1982), Argentina (1995), Brazil (1994–1996), Bulgaria (1996–1997), Chile (1981–1983), Colombia (1982–1987), Côte d'Ivoire (1998–1991), Czech Republic (1989–1991), Ecuador (1996–2001), Ghana (1982–1989), Hungary (1991–1995), Indonesia (1997–), Malaysia (1997–2000), Mexico (1994–1995), Paraguay (1995–1999), Philippines (1981–1987), Philippines (1998–2000), Poland (1992–1995), Senegal (1988–1991), Slovenia (1992–1994), Sri Lanka (1989–1993), Thailand (1983–1987), Thailand (1997–2000), Turkey (1982–1985), Turkey (2000–), Uruguay (1981–1984), Venezuela (1994–1995).

[b]Estimated at peak. Data available for 19 countries only. Comparisons should be treated with caution since measures are dependent on country specific definition of non-performing loans and often non-performing loans are under-recorded.

[c]At the beginning of the crisis. Credit to the private sector from deposit money banks (IFS code 22d) as a share of annual nominal GDP (IFS code 99b).

[d]Bank recapitalization, government payouts to liability holders and public sector purchases of nonperforming loans.

[e]Output losses1 is the cumulative deviation in the *growth* of output during the crisis period from its pre-crisis ten-year trend. Crisis ends when GDP growth returns to pre-crisis trend or if not occurred estimated up until 2002. Output losses 2 is the cumulative deviation in the *level* of output during the crisis from its ten-year pre-crisis trend. Crisis end based on qualitative judgment of country experts, see Hoggarth and Saporta (2001). Data exclude Côte d'Ivoire. Because of data limitations, a three-year and six-year pre-crisis trend was used for Czech Republic and Slovenia respectively.

[f]A currency crisis is defined as a nominal depreciation in the domestic currency (against the U.S. dollar) of 25 percent combined with a 10 percent increase in the rate of depreciation in any year of the banking crisis period.

than measuring the cost to overall economic welfare.[5] Governments are presumably willing to incur these fiscal costs to *limit* broader welfare costs. Conversely, the government may incur only small fiscal costs yet the adverse economic effects of a banking crisis could be severe. For example, a banking crisis was an important feature of the Great Depression of 1929–1933 and yet fiscal costs were negligible since there was little capital support for the failing banks and no deposit insurance.

[5]However, raising (non-lump sum) taxes may have a large distortionary impact on economic welfare.

One rough proxy for the broader welfare costs associated with banking crises is the loss of GDP during the crisis period compared with a measure of trend or potential output. On this measure, cross-country estimates suggest that output losses during banking crises have been large — over 10 percent of GDP, see for example Bordo, Eichengreen, Klingebiel, and Martinez-Peria (2001) and Hoggarth, Reis, and Saporta (2002).

Such estimates are also reported in Table 1 for a sample of 33 recent systemic crises. The measure "output losses 1" is the sum of deviations in GDP growth from the pre-crisis ten-year trend, whereas measure "output losses 2" is the sum of output levels lost in the crisis period compared with the previous ten-year trend.[6] The cumulative output loss during periods of systemic banking crises are also usually very large when a twin banking and currency crisis occurs. The latter may intensify banking system fragility if banks, or their customers, have large net foreign currency exposures.

These output measures give a useful benchmark for the magnitude of economy-wide losses associated with banking crises. But they do not explain the precise cause of the loss. One potential channel is through banks not fulfilling their intermediary function in the aftermath of a crisis. For example, in a sample of 36 developed and emerging-market banking crises, Demirgüç-Kunt, Detragiache, and Gupta (2000) find that real bank credit fell markedly in the first three years after the crisis, despite some recovery in real output. This highlights the difficulty of getting banks to intermediate in the aftermath of a crisis, partly reflecting the persistence of low borrower creditworthiness and lack of good collateral.[7] Some banks may also have switched their portfolio into more liquid and safer assets. In Indonesia, for example, at end-September 2003 (the latest data), and despite some recovery since the crisis, loans still accounted for only 30 percent of total banking system assets — less than the value of their government recapitalization bonds (33 percent). Caution is needed in interpreting credit data during crises.[8] But overall, in the aftermath of the most recent systemic crises, bank lending remained depressed for several years afterwards, which is likely to have contributed to the fall in output.

[6]For a discussion of the issues in measuring the output costs of banking crises see Hoggarth and Saporta (2001).

[7]There is a difficult identification problem of knowing the extent to which the decline in the amount of credit and its share of total assets reflects either (1) a desire for banks to reduce lending, (2) a constraint, such as insufficient capital, on the ability of banks to lend, or (3) a fall in loan demand by banks' customers.

[8]One problem in interpretation is that credit data include write-offs of bad loans.

3. Model-Based Evidence on the Financial Stability–Solvency Nexus

The estimates in Section 2 were drawn largely from reduced-form or quasi reduced-form empirical models. In particular, banking behavior was either suppressed or latent. The empirical estimates also considered separately the two relationships embedded within the solvency–stability nexus.

In this section, we describe an approach which is founded on microeconomic behavior by all agents, including banks. This means that bank behavior is endogenous, with banks making profit-maximizing choices including about future expected returns on the loans they extend. This approach also allows us to study the two sets of relationship between solvency and stability in an integrated framework rather than separately. As such, this model-based approach is some ways better placed to assess welfare-theoretic and public policy questions. At the same time, quantitative calibrations of this model throw up their own puzzles and peculiarities.

3.1. *The model by Chen*

Banking sector intermediation exists to mitigate informational asymmetry problems — financial frictions — between borrowers and lenders (Freixas and Rochet, 1997). So to model the economic impact of bank behavior we need, at a minimum, a dynamic model of the economy with embedded financial frictions. Ideally, the model would embed a banking sector with multiple, heterogeneous banks connected to each other through an interbank market — thus enabling an analysis of contagion through direct interbank links — and would allow for borrower, bank default and insolvency.

Unfortunately, the literature on dynamic general equilibrium models with micro-founded financial intermediation is still nascent. One important exception is Chen (2001) which embeds a representative financial intermediary in a standard model of the macro-economy.[9] The model has been recently modified and applied by Aikman and Vlieghe (2004). Haldane, Hall, Saporta and Tanaka (2004) have also used the model to evaluate the welfare implications of financial frictions.

[9]Although, unsurprisingly given the state of technology, the model falls short of the "ideal" model described above.

At the heart of Chen's model is a double moral hazard problem in the spirit of Holmstrom and Tirole (1997) — an information asymmetry between entrepreneurs and banks on the one hand, and between banks and depositors, on the other. Entrepreneurs gain private benefits from embarking on bad projects (for example, they might initiate a corporate takeover that is unprofitable but gives them the pleasure of expanding their "empire" — see Jensen, 1986). Banks deter such behavior through monitoring. But monitoring is costly for banks, and depositors cannot verify whether banks are doing this job correctly when using their deposits to fund projects. So both entrepreneurs and banks are potentially subject to a moral hazard problem — entrepreneurial incentives to undertake bad projects and banks' incentives to "shirk" from monitoring.

Aggregate output is maximized if households lend all of their money to entrepreneurs via the financial intermediaries. But given asymmetric information, households are willing to deposit their money in a bank only when they can be sure that the bank has adequate incentives to monitor the entrepreneurs. These frictions mean that not all of the economy's capital is channeled to the productive sector. Entrepreneurs face a credit constraint. Equilibrium output depends on the magnitude of this credit constraint, which, in turn, depends on the size of the frictions. For example, when monitoring is very costly, banks have little incentive to monitor their borrowers, so households are unwilling to hold bank deposits. This reduces bank lending to entrepreneurs, thereby lowering steady state output.[10]

3.2. *From macro shocks to output loss via the financial sector*

The framework by Chen allows us to investigate how shocks to the macroeconomy can be magnified by the financial sector. This is ultimately the aim of the "stress-test" approach outlined in the previous section. But unlike the stress tests, a model-based approach allows us to explore the full nexus between macro-shock/banking-sector-health/output loss.

Figure 1 (reproduced from Aikman and Vlieghe, 2004) shows how the key variables in the model respond to a persistent negative shock to productivity. The productivity shock lowers output, bank capital and *ex post* entrepreneurial returns immediately. In the absence of frictions that generate credit constraints, the Modigliani–Miller (1958) theorem holds

[10]Haldane *et al.* (2004) show that the impact on output of even moderate monitoring costs (as a percentage of output) can be very significant.

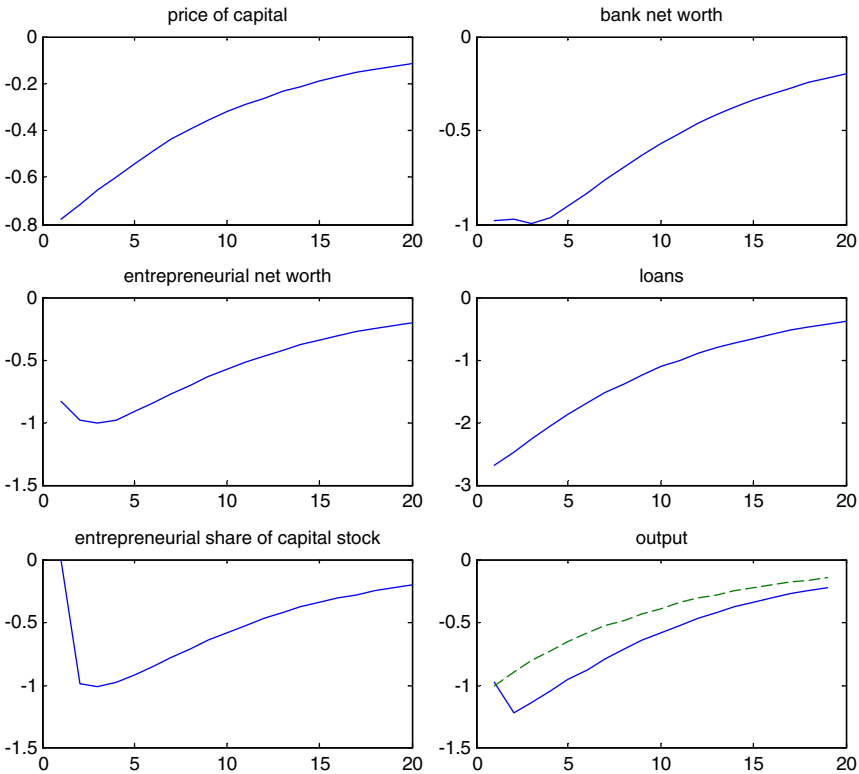

Figure 1. Response to productivity shock

Note: Responses to a 1 percent fall in the level of productivity, with an autocorrelation of 0.9 (that is, 90 percent of the shock persists into the next period and so on). Units along the vertical axis are percentage deviations from the initial level of each variable. The solid line in the bottom right panel represents the response of aggregate output when credit constraints are binding; the dashed line represents the output response when credit constraints are non-binding. The time scale along the horizontal axis represents quarters. And the shock occurs after one quarter.

and the effect on output stops there (the dashed line in the bottom right panel of Figure 1). Banks are entirely passive in this scenario and have no impact on output dynamics.

In the presence of frictions, this is no longer the case (compare the dashed line with the solid line in the bottom right panel of Figure 1). Financial effects — working through two channels — magnify the effect on output of the initial productivity shock significantly. The first channel is often

referred to as the "bank capital channel"; it works as follows. The first-round effect of the productivity shock on bank capital and entrepreneurial returns means that bank owners have less of their own money at stake (that is, less equity capital on the liability side of banks' balance sheets) and face fewer profitable opportunities (that is, lower expected returns on the asset side of their balance sheets). Both effects increase the riskiness of banks in the eyes of depositors. Fewer deposits and less capital imply a contraction in the supply of bank loans which in turn has a second-round negative effect on output.

There is also a second channel at work too — the so-called "entrepreneurial-net-worth channel". With less net worth and lower expected returns, banks view entrepreneurs as having less at stake in ensuring good project outcomes. They therefore cut back lending even further. As a result, entrepreneurs are able to buy less capital for use in the following period, which lowers expected future returns from capital. This depresses entrepreneurial net worth further, amplifying further the impact of the macro-shock.

3.3. *From banking sector problems to output*

The model by Chen also allows us to explore the other aspect of the solvency–stability nexus. In particular, we can trace the behavioral response of the economy to a large exogenous shock to bank capital and measure accurately its impact on output — the equivalent of a systemic banking crisis. Figure 2 (also reproduced from Aikman and Vlieghe) shows the effect of such a shock on key variables in the model.

As with the productivity shock, the effect on output is magnified relative to the frictionless economy (comparing the dashed with the solid line in the bottom right panel of Figure 2). But the quantitative effect on output is more modest and less persistent (compare the scale of the vertical axes in the bottom right panels of Figures 1 and 2). Aikman and Vlieghe provide an illuminating discussion of why this is the case. In a nutshell, the difference is due to the fact that exogenous shocks to bank capital have no first-round effect on the expected profitability of banks. Indeed, after the shock has hit the economy, depositors expect banks to earn a higher return on capital than before, which in turn is perceived to help improve bankers' incentives to monitor entrepreneurs. As a result, the impact on bank loan supply following the shock to net worth is less persistent than is the case with a productivity shock (compare the middle right panels in Figures 1 and 2).

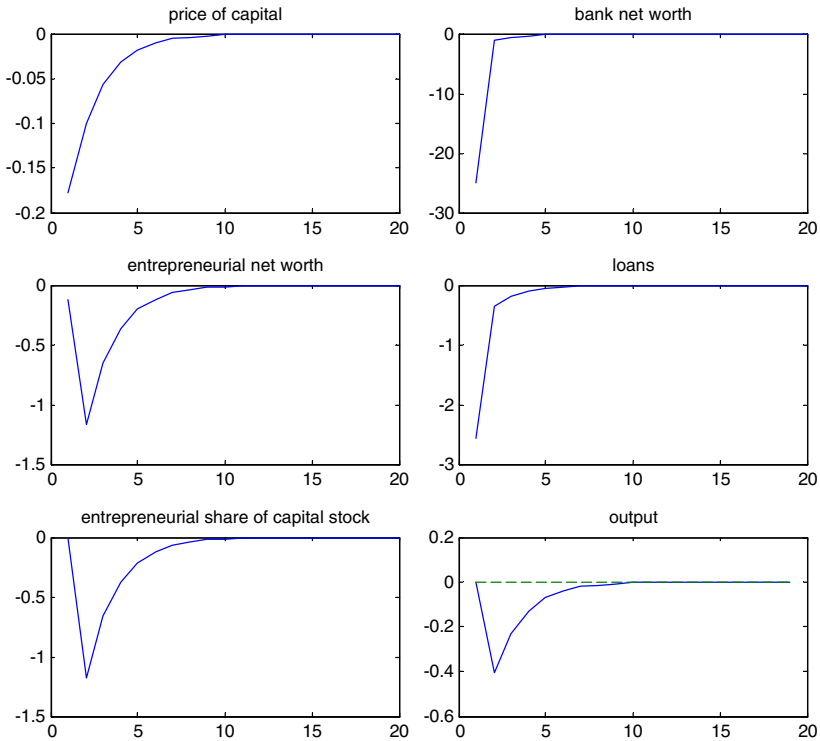

Figure 2. Response to a shock to bank capital

Note: The figures show the percentage deviations from long run equilibrium for each variable following a once-and-for-all shock that reduces bank capital by 25 percent (that is, were loans to remain constant, the capital-to-asset ratio of the banking sector would fall from 8 percent — the assumed long run value — to 6 percent). The solid line in the bottom right panel represents the response of aggregate output when credit constraints are binding; the dashed line represents the output response when credit constraints are non-binding. The time scale along the horizontal axis represents quarters. And the shock occurs in quarter one.

3.4. *Discussion*

The identification problems that plague the reduced-form and quasi-reduced form approaches described in Section 2 are reduced with a model-based approach. Applications of the model by Chen illustrate this. The "bank capital channel" can be clearly identified and its impact — which, in turn, depends on the source of the shock — can be accurately quantified.

Although illuminating, the model-based results do, however, throw up some puzzles, especially when compared with the reduced-form results. In particular, the model-based approach appears to suggest that the adverse impact of a direct shock to the banking sector is more modest than if the initial shock emanated from the real economy. The literature that has adopted the reduced-form has reached the opposite conclusion.

The comparison between the two approaches should not be taken literally for (at least) three reasons. First, the reduced-form approach cannot distinguish the source of the shock — that is, whether the shock to bank capital is direct (for example, due to losses on credit exposures with foreigners) or emanates from a shock elsewhere in the real economy. Second, the reduced-form estimates on the output costs of banking crises study "tail" outcomes — banking crises. Although Aikman and Vlieghe calibrate the shock to bank capital to be large — a once-and-for-all shock that reduces capital by 25 percent — it is unlikely that this is strictly comparable to the events analyzed in the reduced-form banking crises literature. Table 1 suggests that, on average, non-performing loans as a percentage of total loans during banking crises are around 25 percent. Given that typical net worth to loan ratios for banks in the UK are around one-tenth, this suggests that observed shocks to bank assets during banking crises might be significantly larger than the shock simulated above. Third, in the model by Chen the default rate of entrepreneurs who borrow from banks is set exogenously. There is no mechanism through which a reduction in the supply of loans — a credit crunch — can influence lender default rates which, in turn, can further reduce loan supply.

Despite these caveats, it would be worthwhile continuing to fine-tune model-based estimates of the solvency–stability nexus, to disentangle the true scale of the interactions between the banking sector and the real economy. Debate still rages on the scale of these interconnections and micro-founded models provide a better basis for seeking an eventual quantitative consensus.

4. Financial Stability Instruments

4.1. *A taxonomy of instruments*

Sections 2 and 3 helped establish that the stability–solvency nexus is behaviorally complex and that spillovers between the two may be quantitatively

non-trivial. That takes us very naturally to the question of what role public policy might play in mitigating these spillovers and their attendant welfare costs.

When thinking about the instruments of financial stability policy, it is useful to consider a three-way classification (Large, 2004): surveillance; infrastructure; and crisis management. These tools serve potentially different roles at different points along the financial stability transmission process. Some tools are also better equipped for dealing with different of the links embedded within the solvency–stability relationship.

Consider first, for example, the link from broader financial instabilities, or macro shocks, to banking crises. The two tools best equipped to deal with those spillovers are surveillance and infrastructure. Surveillance serves as a form of long-range radar on incipient instabilities. Its role is to spot shocks before they occur — or at least before their deleterious effects begin to take hold. Detection of, and transparency about, those shocks may itself help engineer an orderly, preemptive response by private market participants (see Gai and Shin, 2003). This, in turn, should lower the probability of a full blown banking crisis. In essence, that is the rationale behind central banks publishing *Financial Stability Reports*.[11] At the same time, transparency about risks may be a double-edged sword, as the revelation of bad news could itself risk triggering a banking crisis. For that reason, effective surveillance is probably necessary, but is unlikely to be sufficient, to minimize the adverse spillover effects of macro instability to banking crises.

The second instrument, financial infrastructure, comprises a rather different set of tools. These do not forestall shocks, but rather prevent them generating systemic failure if and when a shock occurs. For example, target ratios for capital or for liquid assets across banks can help cushion the effects of shocks, thereby helping avert system-wide banking crises. International initiatives by the Basel Committee on Banking Supervision, both on liquidity provision and on target capital ratios, are intended to meet this need.

The third tool in the box is crisis management. The usefulness of this tool is greatest when dealing with the second link in the solvency–stability chain — from bank insolvency to broader financial and macro stability.

[11]Including the UK (since 1996), Sweden (1997), Hungary (2000), Norway (2000), Austria (2001), Spain (2001), Belgium (2002), Denmark (2002), France (2002), Canada (2003), Finland (2003), and Australia (2004), together with the International Monetary Fund and the Bank for International Settlements.

Effective banking resolution can help minimize disruption to asset prices and real and financial activity. But what approach is best suited to minimizing such disruption? And in what circumstances?

4.2. *Methods of resolving a banking crisis*

There is a range of options for resolving insolvent banks. At one extreme, a bank can be kept open through an injection of capital. At the other, a bank can be closed, its assets sold and depositors and possibly other creditors paid off. Between these extremes, a bank's license may be removed but with the bank sold off to another bank, in full or part, to preserve the bank's activities. The extent of involvement by the authorities may also vary. It may be limited to encouraging or organizing private sector support, or extended to official financial support, in the limit through government takeover.

When a bank is financially distressed, it is widely accepted that there should be a preference for private sector solutions. These are likely to place existing capital holders in a first-loss position and impose no direct costs on the taxpayer. If an unassisted private sector solution cannot be found, a decision next needs to be made about whether to liquidate the bank or provide some form of government assistance. In exceptional circumstances, if there is a systemic threat, governments might consider a takeover or guarantee of the failed bank.

Plainly, the choice of policy options in a banking crisis is sensitive to the type and size of shock affecting the financial system, in particular whether failures are thought likely to have systemic effects. If the situation is non-systemic, the focus of the resolution is likely to be on the individual failed bank's balance sheet. For example, the failed bank could be merged with a healthy bank or liquidated.

In a systemic situation, however, the immediate aim of the authorities is usually to restore stability of the system as a whole. Guarantees are likely to be necessary to liability holders of the failed bank(s), and perhaps to the financial system as a whole, to avoid or reduce depositor panic. In these circumstances, the aim is first to stabilize the liabilities of the banking system and thereafter to consider restructuring the assets of the failing banks.

It is possible to put these informal ideas about banking resolution into a structured framework. In essence, systemic crises can be analyzed along two dimensions: (1) the breadth of the shock that hits the financial system (for example, is the impact of the initial shock confined to one or two

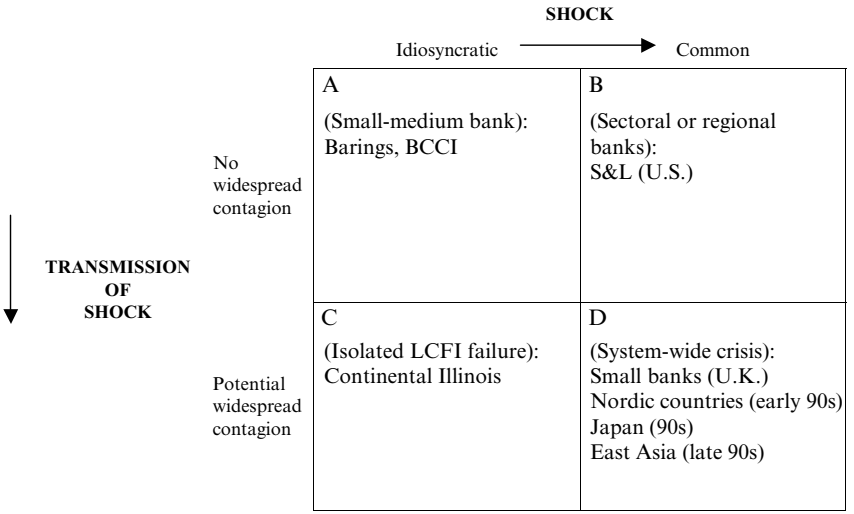

Figure 3. Types of shocks to the financial system

banks or does it affect many banks?); and (2) the extent to which the initial bank failure(s) then affects the rest of the financial system. Such contagion or spillover effects could reduce the value of other banks' assets through direct exposures to the failed bank, or indirectly, by depressing the price of marketable assets held by other banks. In addition, on the liability side, an initial bank failure could trigger a withdrawal of deposits from other banks thought to face problems similar to the failed bank. A stylized representation of this framework is shown in Figure 3.

Quadrant A comprises of an idiosyncratic shock to one bank where the contagion effects for the system are thought to be small, such as the failure of a small or medium-sized bank because of management failure or fraud (for example, Barings). Quadrant B shows situations where there are common shocks hitting a number of banks, but where the spillover effects are likely to be small. This would apply when a group of banks have limited interlinkages with the rest of the financial system, such as a specific shock to a region (for example, New England in the early 1990s) or sector (for example, the U.S. savings and loans crisis in the 1980s). Quadrant C shows situations where the shock is specific but the linkages are thought to be strong. This might involve a large complex financial institution (LCFI). Quadrant D depicts a situation where several banks suffer a common shock

that could affect the whole system (for example, the Nordic countries in the early 1990s or Japan through the 1990s).

If an idiosyncratic shock causes the failure of a small or medium-sized bank — quadrant A — the policy response itself, or the bank's reaction to the policy action, should have a minimal direct short-term impact on the rest of the financial system. Its borrowers, for example, should be able to switch to other lenders. Other similar banks thought to be weak could lose deposits, but there is likely to be a flight to quality within the financial system rather than a reduction in the aggregate deposits of the system.

The pictures changes if one very large bank fails (quadrant C), or a number of banks fail at the same time (quadrant D). If the LCFI failure is due to a specific factor, such as fraud, the systemic threat will depend on the size and type of direct linkages that the failed bank has with the rest of the financial system. But a more general shock could threaten unconnected banks. In case C — the failure of one large bank — the focus is to maintain the activities of the problem bank or, failing this, to unwind it in an orderly fashion, so as to limit the impact on other financial institutions and markets.[12]

In case D — a system-wide crisis — the key immediate aim of the authorities is usually to stabilize the financial system as a whole (at minimum fiscal and moral hazard cost) and only then to focus on restructuring the failed banks. Most recent systemic crises have typically been caused by an adverse macroeconomic shock weakening the whole financial system, rather than resulting from the impact of contagion following the failure of just one individual bank (see Borio, 2003).

This restricts the policy options. In a systemic crisis, no well-capitalized domestic private banks may be available to buy the failed banks, leaving takeovers by foreign banks or the government as the only option. In recent systemic crises, some countries have relaxed rules on foreign entry to allow takeovers by foreign banks — such as in Finland and Mexico — while others have relied more on government ownership. For example, following the banking crisis in Norway, and more recently in South Korea, the government became owner of more than half of the banking system.

It may also be more difficult to penalize stakeholders in a system-wide crisis. In principle, existing shareholders' capital can, and should, be written down during system-wide crises. But evaluating the underlying value of

[12]In the United States, for example, the FDIC would probably set up a bridge bank immediately following the failure of a (deposit-taking) LCFI (Bovenzi, 2002).

impaired assets may be harder than during normal market conditions. Estimates of cash flow, interest rates and underlying business conditions will be uncertain, as will the value of collateral. This may lead to an understatement of losses, thus imposing costs on taxpayers rather than on existing shareholders. Such understatements occurred recently in Mexico and Indonesia.

In most systemic banking crises during the 1990s, central banks provided liquidity support to problem banks, to offset withdrawals by depositors and other creditors. Central banks have often made losses on this lending to banks that turned out to be insolvent. Blanket guarantees to depositors and other creditors have also often been provided, albeit sometimes temporarily. Confidence in the banking system has in most cases revived quickly. But in highly dollarized banking systems, the lender of last resort (LOLR) has been limited by the level of international reserves and offering guarantees to holders of foreign currency deposits may not in these circumstances be credible. More generally, the credibility of a blanket guarantee may be undermined if the government has a large debt burden.[13] In the recent Argentinean crisis (2001–2002), for example, a blanket guarantee to liability holders was not given. Such guarantees would not have been credible given that the source of the crisis was the unsustainability of the fiscal position. Instead, to prevent bank runs, a temporary deposit freeze was imposed.

To what extent does empirical evidence bear out these conclusions when dealing with systemic crises? Table 2 shows the relationship between (open-ended) liquidity support and government guarantees and the output losses incurred during 33 recent systemic banking crises. Open-ended liquidity support is defined as support provided for more than twelve months which is greater than the aggregate capital of the financial system; while blanket guarantees are either explicit ones or where state banks account for more than 75 percent of the banking system's assets (Honohan and Klingebiel, 2003).

After controlling for the importance of bank intermediation in the economy (measured by bank credit/GDP), open-ended liquidity support is associated with *larger* declines in output during a banking crisis.[14] This still appears true after allowing for other factors that may affect output losses, such as whether a currency crisis also occurs (Table 2, Equation 1). But there is no evidence, either positive or negative, of an association between deposit guarantees and the output losses of crises (Table 2, Equation 2).

[13]See Hoelscher and Quintyn (2003) for a discussion of resolution policies in economies with highly dollarized banking systems and large government debt burdens.
[14]Output losses are measured on the basis of the two methods discussed earlier.

Table 2. Impact of liquidity support and government guarantees on output losses

1. YLOSSES1[a]				
	A. Liquidity Support (LOLR)		B. Blanket Guarantee (GUAR)	
	(1)		(2)	
LOLR[b]	4.5	(1.2)		
GUAR[c]			0.7	(0.2)
CRGDP[d]	0.34	(5.6)	0.35	(5.6)
CUR[e]	9.4	(2.3)	10.5	(2.6)
R^{-2}	0.56		0.54	
DW	2.0		1.9	
Number of observations	32		32	
2. YLOSSES2[f]				
	A. Liquidity Support (LOLR)		B. Blanket Guarantee (GUAR)	
	(1)		(2)	
LOLR[b]	28.2	(1.9)		
GUAR[c]			−12.4	(0.8)
CRGDP[d]	0.99	(4.3)	1.1	(4.5)
R^{-2}	0.42		0.36	
DW	2.7		2.4	
Number of observations	32		32	

Sources: (Honohan and Klingebiel, 2003), IMF and Bank calculations.
Note:
t-statistics in parentheses.
[a]YLOSSES1: Cumulative deviation in the *growth* of output during the crisis period from its ten-year pre-crisis trend.
[b]LOLR: one where liquidity support provided for more than twelve months that is greater than the aggregate capital of the banking system, 0 otherwise.
[c]GUAR: one where explicit government guarantee or implicit one (where state banks account for 75 percent or more of banking system assets), 0 otherwise.
[d]CRGDP: Bank credit to the private sector/annual GDP (percent) at the outset of the crisis.
[e]CUR: one where currency crisis, 0 otherwise. Currency crisis is a nominal depreciation (against the U.S. dollar) of 25 percent combined with a 10 percent increase in the rate of depreciation in any year of the banking crisis period.
[f]YLOSSES2: Cumulative deviation in the *level* of output during the crisis period from its ten-year pre-crisis trend.

Provision of open-ended liquidity support may testify to some countries' reluctance to allow banks to fail (see Bordo *et al.*, 2001). Support was in some cases given to insolvent banks, not just those that were fundamentally sound but illiquid. This may have increased moral hazard, enabled some banks to gamble for resurrection and facilitated continuing financing for loss-making borrowers. The upshot may have been a more protracted period of output loss. But these conclusions are necessary tentative and the results event-specific. And there may be other channels at work. In the next section, we sketch a general framework which might be used to help assess the optimum size and shape of government intervention in a banking crisis.

5. A Framework for Assessing Public Intervention in Bank Resolution

There are few issues more controversial than whether policymakers should shoulder the losses of failing financial institutions in full, in part or not at all. The debate is highlighted by two important recent papers: Gorton and Huang (2004) show that there are circumstances in which *full* coverage is appropriate, while Allen and Gale (2004), in a not dissimilar framework, argue that financial crises may be naturally-occurring, contingent phenomena in a constrained-efficient equilibrium that need *not* call for any response by the authorities at all. The aim of this section is to provide a simple framework within which the *optimal* degree of coverage can be determined.

There are several arguments both in favor and against public guarantees upon, or insurance of, claims on banks. Of those in favor, four stand out:

- Depositors are risk averse, and often quite unaware of troubles facing banks. They would suffer a direct loss of welfare unless covered;
- Individuals who lose deposits in failing banks may be unable to borrow or liquidate other assets, forcing them to cut consumption sharply;
- The absence of cover could deprive the economy of some of the benefits of financial intermediation;
- Depositors in other, probably solvent, banks may take fright, precipitating a systemic crisis.

In most countries the public authorities provide deposit insurance suggesting these arguments have force. At the same time these objectives could

be met in different ways. For example, the first argument might be met in part by making losses on deposits in failed banks tax deductible, though that would only provide partial insurance. The second problem might be solved by offering bank crisis victims *loans,* not grants, but this might fail to meet the first argument. The third argument rests on the idea that as bank deposits come to appear safer, more ex ante profitable investment opportunities will be exploited through additional bank lending. It is unclear that deposit insurance is the ideal vehicle for remedying such a problem if it exists. The fourth argument carries perhaps the greatest weight. A big run on banks wrongly thought insolvent could turn into a set of self-fulfilling expectations.

There are two main counter-arguments to the provision of government guarantee of deposits:

- Moral hazard which affects both banks and their depositors;
- The fiscal and wider macro costs of generous guarantees may be large.

The first argument stresses that guarantees are equivalent to the public sector issuing a put option on banks' assets. If monitoring efforts are unobservable and privately costly, and taking up this put option is treated as free at the margin, those running banks may change behavior, in such a way that banking crises become graver and more likely. Depositors will also be tempted to take less care about where they lodge their funds, with safer banks cross-subsidizing weaker ones as a result. So if today's crisis is resolved with unexpected leniency, relevant parties may alter their actions and make it likelier that the crisis is repeated.

While this moral hazard argument has received considerable attention, the second, about its wider macroeconomic and fiscal consequences, has not. It seems perhaps to have been accepted that the conferment of public guarantees, or bailouts for insolvent deposit insurers, involves only modest amounts of additional government debt, or maybe that, for Ricardian equivalence reasons perhaps, the consequences of any additional public borrowing can be ignored.

As discussed in Section 2, the additional public sector borrowing that accompanies severe financial crises is far from trivial. The direct fiscal costs of recent crisis resolution in Indonesia, Mexico, and Thailand, for example, are of the order of 20 percent or more of annual GDP. Amortizing new debt on this scale at a real rate of interest of 5 percent over, say, 20 years (which is equivalent to assuming the annual recurrence probability of a similar crisis

is 5 percent), implies a need to raise an additional 1.5 percent of GDP or so each year in tax revenues, if governments cannot or do not reduce their other outlays.

If the country in question taxes all income, including profits, at a flat rate, with no deduction for investment, its output and capital stock depend negatively upon that tax rate.[15] The rate of tax will have to rise to service the additional debt, assuming that the country is taxing below the point of maximum yield. If a crisis is unexpected and/or resolved at an unexpectedly large fiscal cost, long-run output will probably have to fall. And the drop is larger if the way a current crisis is resolved makes agents expect an increased frequency and gravity of future crises. This might account for the stylized facts presented earlier whereby output stays depressed for several years after a banking crisis, the more so when accompanied by state guarantees.

The steady state link between tax receipts (R) and the income tax rate, s, would then be a Laffer curve, first rising with s, and then, after a maximum, say at s^*, sloping down.[16] And with s at either of its extreme values, 0 or 1, R vanishes.[17] If the production function is Cobb–Douglas, $s^* = 1 - \gamma$, where γ is the competitive profit share. This creates a long run link between output per head, $f(k)$, and s.[18]

The third link between R and the degree to which financial crisis losses are absorbed by the state. Let the authorities bear the fraction ξ of such losses ($1 \geq \xi \geq 0$), and let the probability of a crisis in any year be $[N\chi(\xi)]^{-1}$, with $\chi' < 0$: greater generosity increases the incidence of crisis, given moral hazard effects. Moral hazard may also affect the gravity of losses, z, in a financial crisis too, so $z = z(\xi)$.

We need to distinguish between a *primary* crisis of z, and a *systemic* crisis. Denote a crisis by $z(1+p(1-\xi))$, where $p \geq 0$ is a parameter capturing "systemicity". Let the primary crisis of total size z affect a

[15]So we assume that this country, like most, does not follow the advice of Lucas (1990) or Kaldor (1956) to exempt profits or deduct net investment from the tax base.

[16]For sufficiently low s, R is increasing in s, but beyond s^*, the curve starts to slope down.

[17]The assumptions behind this Laffer curve include: a given discount rate for utility, β, in continuous time; exogenous population, technology and labor supply, with infinitely lived and homogeneous individuals; perfect competition, with output per head an increasing, concave function of capital per head, k; a steady state with stationary consumption; and all income taxed at the rate s.

[18]Perfect competition and stationarity, meanwhile, will imply $f'(k) = \beta/(1-s)$, so that $q \equiv f(k) = f(f'^{-1}(\beta/(1-s)))$. Under Inada conditions, $f(k)$ vanishes at $s = 1$, and this explains why $R = 0(= sf(k))$ here too. As s falls below this, output rises, and the relation is concave if capital's share of income is less than one half.

fraction τ of the population and assume a systemic crisis affects everyone else. The extra fiscal revenue needed annually to meet crisis resolution costs is $\Delta R = \xi h(\xi) z(\xi)(1+p(1-\xi))$, where $h(\xi) = \beta\{1-(1+\beta)^{-N\chi(\xi)}\}^{-1}$ is the cost of amortizing an additional \$1 over $N\chi(\xi)$ years at a net-of-tax rate of β. So, $R = R(\xi)$, with R' typically (if not invariably) positive. Greater official liberality in covering financial crisis losses goes hand-in-hand with a higher tax rate, a higher pre-tax interest rate, and lower capital and output.

This gives the case against generous official coverage of crisis losses. Crises are bigger and more frequent (though less systemic), and output per head is typically squeezed by the need to increase the rate of income tax. What about the advantages? Generosity helps to sustain crisis victims' consumption when the crisis hits. With no coverage, crisis victims would lower their consumption sharply, if only briefly. The more risk-averse they are, the greater the social gain from cushioning them from some of the loss they would otherwise face. On top of this, more official generosity implies a reduced chance of a run on other banks.

What each of the primary crisis victims will lose in such an event is $(1-\xi)z(\xi)/\tau$; each of the others loses $(1-\xi)^2 pz(\xi)/(1-\tau)$. If the social welfare function is Benthamite (average utility) and writing their respective crisis consumption levels as c_V and c_N, and the coefficient of relative risk aversion, assumed constant, as α, the *marginal benefit of loss coverage* in any year in which a crisis occurs will be:

$$MB = \left[c_V^{-\alpha}(z(\xi) - (1-\xi)z'(\xi)) + c_N^{-\alpha} p(1-\xi)(2z(\xi) - (1-\xi)z'(\xi))\right][N\chi(\xi)]^{-1}. \quad (1)$$

Here the frequency of crises is $[N\chi(\xi)]^{-1}$, so the expression for marginal benefit should be multiplied by that.

Meanwhile, the *marginal cost of loss coverage* consists of two elements: (1) the loss in steady-state consumption due to the rise in (distortionary) taxation needed to service and amortize the extra debt; and (2) the loss in welfare from the increased frequency of crises. This can be expressed as:

$$MC = \left[\frac{z(\xi)(1+p(1-\xi))c^{-\alpha}}{N\chi(\xi)}\right]\left\{\frac{h}{Y}\left(1 + \frac{\xi z'(\xi)}{z(\xi)} - \frac{p\xi}{1+p(1-\xi)} - \xi N h\chi'(\xi))Z - \frac{\chi'(\xi)(1-\xi)}{\chi(\xi)}\right)\right\}, \quad (2)$$

where $Y \equiv \frac{(1-s)(1-\gamma)}{\gamma} - s$ and $Z \equiv N\chi(\xi) + \left[\left(\frac{c}{c_N}\right)^{\alpha} - 1\right] + \tau\left[\left(\frac{c}{c_V}\right)^{\alpha} - \left(\frac{c}{c_N}\right)^{\alpha}\right] > 0$. Y must be positive if s is to the left of the Laffer curve maximum.

If the public authorities are concerned to maximize a representative agent's expected steady state utility, the maximand will be

$$W = [N\chi(\xi)(1-\alpha)]^{-1}\left\{(N\chi(\xi)\left(c^{1-\alpha} - 1\right) + \left(c_N^{1-\alpha} - c^{1-\alpha}\right) + \tau\left(c_V^{1-\alpha} - c_N^{1-\alpha}\right)\right\}, \tag{3}$$

and steady state consumption (in non-crisis years), c, equals q minus government spending, G, which we take as constant. With q Cobb–Douglas ($q = k^{\gamma}$, $1 > \gamma > 0$), capital's marginal product, $\gamma k^{\gamma-1}$, equals the long run rate of interest grossed up for tax, $\beta/(1-s)$. So the marginal effect of s upon c is $-\gamma q/(1-\gamma)(1-s)$. A balanced budget for the government implies $sq = \beta D_0 + \Lambda + G$, where D_0 is recurrent debt independent of crisis amortization costs, and Λ equals these costs. The variable Λ will equal $\xi z(\xi)h(1 + p(1-\xi))$. So maximizing equation 3, subject to the constraint $\text{Min}[\xi, 1-\xi] \geq 0$, normally entails equating marginal benefit and marginal cost, equation 1 and 2. This will describe an interior solution ($1 > \xi > 0$) if the welfare curve, W, is humped in this range, as a function of ξ. If W is always increasing, full coverage ($\xi = 1$) is best; if always decreasing, optimal coverage should be zero.[19]

If there is a single interior optimum, ξ^* what influences its size? We may infer:

(1) A rise in the knock-on effect parameter — making the crisis more systemic — will raise optimal coverage of government guarantees;
(2) Exogenous increases in the coefficient of relative risk aversion, α, or the size or probability of the crisis z and N, or downward-flexibility

[19]If W is M shaped, the optimal coverage is given at the higher hump, and a W-shaped welfare curve could indicate full, interior or zero coverage, depending on which gave highest welfare. These strange cases are in fact quite conceivable, because we cannot be quite sure that the marginal benefit curve slopes down, nor that the marginal cost curve slopes up, throughout their lengths. The *MC* curve can misbehave because of the influence of the systemicity parameter, *pp*. Intuitively, greater coverage could be cheaper than less if this lowers the knock-on effects the financial crisis has on other banks enough. So the second order condition for an interior optimum, that *MC* cuts *MB* from below, is important. Furthermore, if either $\chi(\xi)$ or $z(\xi)$ were undifferentiable, the W curve would display discontinuity.

of G during or immediately after the crisis also increases the optimal coverage ratio;

(3) An exogenous rise in the income tax rate, s, will reduce optimal coverage;

(4) Optimal coverage falls if moral hazard effects strengthen (raising z' or making χ' more negative), and also if crisis victims are able to sustain consumption at times of shock by borrowing on their own.

These results describe time-consistent, optimum policy in a recursive, certainty–equivalent setting. The authorities might be tempted to act time-inconsistently. What would that imply? If preoccupied with dealing with a crisis here and now, they may not pay much attention to longer-run effects. In particular, they may discount the terms in z' and χ'. This will raise perceptions of marginal benefit and lower those of marginal cost. They be more generous in covering the crisis. The short-run discretionary optimum value of ξ will be larger than the ξ^* that equates equations 1 and 2; it might jump to its maximum of unity. That might also happen if policy makers discounted the future faster than the private sector.

An unexpectedly severe crisis may provoke quite different reactions from a "standard" one. Victims' marginal utilities of consumption will be huge when the crisis hits. The risk of recurrence of a crisis on this scale may be judged remote, so that the current, abnormally high value of ξ may not just be warranted, but also leave future expectations of lower ξ unaffected and thus do little, if any, damage through moral hazard effects. But the consequences will involve an unanticipated and enduring rise in income tax rates. That will depress capital and output, over time. If labor were endogenous (we have simplified our model, by assuming it is not), and if $\alpha > \gamma$ (a highly plausible assumption), agents will react by supplying less labor right away, and though this effect is not permanent, it will undoubtedly depress the time path of output in the immediate aftermath of the crisis and beyond.

Many other refinements could be made to the model, to incorporate monetary variables explicitly, to open the economy, to depart from certainty equivalence, to micro-found the $z(\xi)$, $\chi(\xi)$ and $p(\xi)$ functions, and to explore the dynamics. Even in its simple form sketched above, nonetheless, the framework serves as a way of organizing thoughts about the intricate, important and controversial issue of how much state coverage of banking system losses is appropriate in crises. In principle, it might be possible to calibrate the model, say the $z(\xi)$, $\chi(\xi)$ and $p(\xi)$ functions, to conduct

comparative static experiments. If nothing else, the model makes clear that there is no one-size-fits-all answer to the question of optimal public intervention in a banking crisis. Different solutions befit different situations. The framework presented here outlines the key factors that might determine this public policy choice.

6. Open Issues in Bank Resolution

We conclude with some thoughts on two issues on the banking resolution front where there remains uncertainty or ambiguity, not all of which is probably constructive. These issues could form part of a forward-looking agenda for policymakers.

6.1. *Judging "systemic"*

Academics and policymakers are largely agreed that systemic importance is a key criterion when judging how best to respond to crises. What they have been unable to agree upon, however, is a coherent quantitative definition of "systemic". In some ways it is striking that so little progress has been made on this question. It would be the equivalent of monetary policymakers acting without a coherent yardstick for the prices of goods. On the other hand, the conceptual and measurement problems associated with measuring systemic risk are much more acute than for consumer prices.

There are several aspects of systemic risk that might bear further consideration. First, how far is it possible to judge systemic importance *ex-ante*? If systemic risk is a public bad, regulation can be used as an *ad valorem* tax on systemic risk to minimize provision of that bad. But to set such a tax schedule would require ex-ante quantitative measures of systemic risk. Because systemic risk is rooted in externalities across institutions or markets, it cannot be measured by balance sheet size alone. Simulation, sensitivity analysis or stress-testing would be necessary, all of which are relatively embryonic in a banking context.

Given this unresolved measurement problem, it is perhaps not surprising that there has been no attempt in practice to quantify regulation on the basis of systemic risk. Rather, current practice is to key regulation — for example, capital and liquidity ratios — off idiosyncratic risk. While measurable, this risk does not necessarily equate with a market failure or externality, unlike systemic risk.

Second, how far is it possible to judge systemic importance *ex-post*? After a crisis has struck, it is perhaps situations, rather than institutions per se, that are systemic. The reason is that time — or rather the lack of it — blurs the distinction between liquidity and solvency in real crises. When time is short, the two may effectively be one and the same. Policy authorities may often be willing to take actions when time is short which they would not countenance if given a longer window for action. For example, they might extend liquidity when there are genuine concerns about solvency, but there is not the time to assess this properly nor to wind-down the firm in an orderly fashion. This means that, even if ex-ante criteria for systemic importance were defined, these may need to be overridden in crisis circumstances if the time interval is short. Ex-post measures of systemic importance are inevitably event and time-specific and as such are unlikely to be amenable to simple quantification.[20]

Third, is systemic importance better measured using monetary or welfare units? The two need not and often will not deliver the same outcome. LTCM was systemic by dint of the sheer size of its positions, even though end-investors in LTCM were both small in number and rich enough to bear the consequences without a significant loss of welfare. The savings and loans institutions were systemic less because of their size and more because of the adverse welfare implications of their failure for thousands of end-savers and borrowers. [21] Where regulators draw that line is a difficult judgment.

All three of these issues present real choices and challenges to policy makers. There is an urgent need for further conceptual and quantitative research to better enable policymakers to make these choices.

6.2. *Dealing with large complex financial institutions (LCFIs)*

Recent years have seen the emergence of a new type of financial entity — large complex financial institutions (LCFIs). The challenges these new entities pose are partly the consequence of them being "large", but are most acute as a result of their "complexity". The scale of LCFI operations inevitably raise traditional concerns about "too big to fail". In equal measure, however, they have raised fears about "too big to save". In other words, we

[20]Better disclosure, accounting and auditing standards, however, can help mitigate, to a degree, the difficulty in making these *ex post* judgments.

[21]A similar argument can be made when comparing the systemic importance of a banking crisis affecting a low income country *vis-à-vis* that of higher income country.

may be about to enter an era where financial crises, while less frequent than in the past, are also on a larger scale when they do arrive — an era of "super-systemic" crises (see Haldane, 2005).

The complexity of LCFIs derives from their crossing traditional boundaries, both functional (commercial banking, investment banking, insurance, fund management, etc.) and geographic. Though the former is the development most often focused on the latter poses at least as many headaches from a regulatory perspective. Cross-border financial institutions have traditionally been regulated on a "home country" basis — that is to say, lead regulation is undertaken by the authorities where the institution is legally incorporated. This approach has some logic from a financial stability perspective, as it would be the home legal jurisdiction that would dictate the terms and conditions of any winding-up of that entity.

That logic begins to fray, however, when we consider stressed situations short of genuine insolvency. Who provides the liquidity and/or the capital to mitigate problems in those situations? The home country may in some cases have neither the resources (for example, in the case of a liquidity problem in a foreign jurisdiction) nor the incentives (for example, in the case of a solvency problem in a foreign jurisdiction) to act optimally. Put at its most general, LCFIs potentially give rise to situations where there is a disjunction between those charged with limiting systemic risk (the home country) and those bearing that risk (the host). And that, in turn, calls into serious question the home-host model of international supervisory cooperation.

In a world of LCFIs, further thought needs to be given to how, and by when, liquidity and capital might be provided to a distressed entity in the context of banking resolution. By definition, this is likely to require some international agreement among policy authorities, both home and host. This will not happen quickly. But if super-systemic crises indeed become a reality, the pressure for such an agreement will tend to increase rather than diminish with time.

References

Aikman, D., and G. Vlieghe, 2004, "How much does bank capital matter?" *Bank of England Quarterly Bulletin*, Spring, pp. 48–58.

Allen, F., and D. Gale, 2004, "Financial intermediaries and markets," *Econometrica*, 72, pp. 1023–1061.

Bordo, M., B. Eichengreen, D. Klingebiel, and M. S. Martinez-Peria, 2001, "Is the crisis problem growing more severe?," *Economic Policy*, April.

Borio, C., 2003, "Towards a macroprudential framework for financial supervision and regulation," BIS Working Paper No 128.

Bovenzi, J., 2002, "Resolving large complex financial organizations" speech presented at the 38th Annual conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, 10 May 2002.

Caprio, G., and D. Klingebiel, 2003, "Episodes of systemic and borderline financial crises," World Bank database, January.

Chen, N-K., 2001, "Bank net worth, asset prices and economic activity," *Journal of Monetary Economics*, 48, pp. 415–436.

Crockett, A., 2000, "In search of anchors for financial and monetary stability," speech given at the SUERF Colloquium in Vienna, 27–29 April.

Demirgüç-Kunt, A., E. Detragiache, and P. Gupta, 2000, "Inside the crisis: An empirical analysis of banking systems in distress," IMF Working Paper 156.

Elsinger, H., A. Lehar, and M. Summer, 2003, "The risk of interbank credits: A new approach to the assessment of systemic risk," *Bank of Austria Financial Stability Report 3*, pp. 75–86.

Frankel, J., and A. Rose, 1996, "Currency crashes in emerging markets; empirical indicators," NBER Working Paper 5437.

Freixas, X., and J.-C. Rochet, 1997, *The Microeconomics of Banking*, MIT Press.

Friedman, M., and A. Schwartz, 1963, *A Monetary History of the United States*, Princeton University Press.

Gai, P., and H. S. Shin, 2003, "Transparency and financial stability," *Bank of England Financial Stability Review*, pp. 101–108, December.

Gorton, G., and L. Huang, 2004, "Liquidity, efficiency and bank bail outs," *American Economic Review*, 94, pp. 454–483.

Haldane, A. G., 2005, "The era of super-systemic crises," Bank of England, mimeo.

———, 2004, "Defining monetary and financial stability," Bank of England, mimeo.

Haldane, A. G., S. Hall, V. Saporta, and M. Tanaka, 2004, "Financial stability and macroeconomic models," *Bank of England Financial Stability Review*, pp. 80–88, June.

Hoelscher, D., and M. Quintyn, 2003, "Managing systemic banking crises," IMF Occasional Paper no. 224.

Hoggarth, G., R. Reis, and V. Saporta, 2002, "Output costs of banking system instability: Some empirical evidence," *Journal of Banking and Finance*, 26, pp. 825–855.

Hoggarth, G., and V. Saporta, 2001, "Output costs of banking system instability: Some empirical evidence," *Bank of England Financial Stability Review*, pp. 148–165, June.

Hoggarth, G., and J. Whitley, 2003, "Assessing the strength of UK banks through macroeconomic stress tests," *Bank of England Financial Stability Review*, pp. 91–103.

Hoggarth, G., J. Reidhill, and P. Sinclair, 2003, "Resolution of banking crises: A review," *Bank of England Financial Stability Review*, pp. 109–123.

Holmstrom, B., and J. Tirole, 1997, "Financial intermediation, loanable funds, and the real sector," *Quarterly Journal of Economics*, 109, pp. 841–879.

Houben, A., J. Kakes, and G. Schinasi, 2004, "Towards a framework for financial stability," De Nederlandsche Bank mimeo.

Honohan, P., and D. Klingebiel, 2003, "The fiscal cost implications of an accommodating approach to banking crises," *Journal of Banking and Finance*, 27, pp. 1539–1560.

International Monetary Fund, 1998, "Financial crises: characteristics and indicators of vulnerability," *World Economic Outlook*, Chapter 4, May.

Jensen, M., 1986, "Agency costs of free cash flow, corporate finance and takeovers," *American Economic Review*, 76, pp. 245–272.

Kashyap, A., and J. Stein, 2003, "Cyclical implications of the Basel II capital standards," University of Chicago working paper.

Kaldor, N., 1956, *An Expenditure Tax*, Allen and Unwin, London.

Large, A., 2004, "Financial stability oversight, past & present," speech delivered at the London School of Economics on January 22, 2004, available at: http://www.bankofengland.co.uk/speeches/speech212.pdf.

Lucas, R. E., 1990, "Supply-side economics: an analytical review," *Oxford Economic Papers*, 42, pp. 293–316.

Modigliani, F., and M. Miller, 1958, "The cost of capital, corporation finance and the theory of investment," *American Economic Review*, 48, pp. 261–297.

Organization for Economic Cooperation and Development, 2002, "Experience with the resolution of weak financial institutions in the OECD area," *Financial Market Trends*, June, No. 82, chapter 4.

Wells, S., 2002, "UK interbank exposures: systemic risk implications," *Bank of England Financial Stability Review*, December, pp. 175–181.

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A Note on Financial Stability

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In this short note, I present a framework for thinking about the issues that Ingves and Hoelscher (2005), Sabourin (2005), Kupiec (2005), and Haldane *et al.* (2005) have introduced. Luckily, these four papers have a lot of common ground. First, they all demonstrate quite convincingly that banking crises are bad, *systemic* banking crisis are *very* bad, and suggest that *contagious*, systemic banking crises are *extremely* bad. The areas of agreement across these four papers, however, do not just stop there. When faced with the onset of a banking or financial crisis, the four papers would argue that (a) complete solutions are preferable to incomplete ones, (b) quick solutions are preferable to those that take a great deal of time, (c) private sector solutions are preferable to those that involve some sort of explicit financial backing from the public sector, but also (d) that, for a variety of reasons, the private sector is neither sufficiently quick nor sufficiently complete in offering solutions.

Of course, this would not be an interesting topic on which to base this conference were it true that policymakers generally agreed on everything of relevance. In broad terms, the areas of disagreement can be segmented into (1) how best to prevent crises, (2) how best to intervene, given a crisis, and finally, (3) how best to exit, given policymakers previous intervention into a crisis.

1. Financial Stability versus Institution Stability

To begin thinking about the appropriate framework to consider, it is important to acknowledge that what concerns policymakers is *financial* stability, and not necessarily the stability of any given institution (Borio *et al.*, 2001). The subtitle of this conference is "resolving *large* bank insolvencies"

and although we might question whether it is purely size that determines importance, it seems clear that policymakers would not bother to gather together at a conference subtitled "resolving small, insignificant, bank insolvencies". With this simple insight, we can immediately derive some policy implications and apply the lessons from those that have just spoken as they relate to these implications.

So what is financial stability? I think policymakers ought to define the goal of financial stability as one where you try to limit the costs to an economy from financial distress, but that these costs must include those that arise from any moral hazard induced by your actions. In general, financial *system* outcomes are necessarily and critically determined by the interactive behavior of a multitude of different individual institutions. Traditionally, policymakers such as banking supervisors typically believed their mission was to limit the likelihood of failure of individual institutions. This more "micro" view would then treat systemwide outcomes as exogenous from the perspective of the individual institution. Although financial stability and institution stability have been defined to be on opposite sides of a spectrum, in reality policymaker objectives obviously lie somewhere in between these two endpoints.

Now this very simple distinction between concern for the financial system as opposed to concern about a financial institution has some immediate implications. First, the structure and intensity of regulation and supervision of financial institutions should be related to the systemic importance of the institution. For example, large institutions may require year-round examination staff while other institutions may only receive relatively infrequent off-site examinations. Second, when assessing risks to the financial system, relevant stress tests are more appropriately delivered from the top-down rather than aggregated from the bottom-up. That is, policymakers need to identify the relevant stresses that they observe in the financial system (for example, a rapid increase in commodity, equity, or real estate prices), and then ask institutions to conduct stress tests based on specified scenarios. While stress-testing has become more popular in the supervisory community recently, in many cases, the tests are chosen by bank managers looking at bank-specific risks. To the extent that the identified risks at the bank level are somewhat diversified across banks, systemwide aggregation of bottom-up stress-testing cannot provide policymakers with assurances regarding the likelihood of systemic problems.

2. Three Phases of Policymaker Effort

The four papers generally discussed elements of what we might call a systemwide analysis. Broadly speaking, there are three parts to such an analysis. First, there is the "prevention, surveillance, or the risk-assessment" phase. Second, there is the "infrastructure, or supervision and regulation" phase. Finally, the management and resolution phase.

Turning to the first phase, policymakers have already begun increasing their market surveillance and risk assessment in the wake of the most recent set of financial system crises. The Bank of England's financial stability reports, the Canadian Deposit Insurance Corporation's standards guide, and the International Monetary Fund and World Bank's financial sector assessment programs are some examples where policymakers attempt to be transparent in their views of where they perceive risks and vulnerabilities to exist in the financial system.

The second phase of the framework for financial system stability details how best to provide the appropriate infrastructure to minimize the risk of instability. Perhaps the most publicized element of the regulatory infrastructure is bank capital regulation. Even though the process that has become known as Basel II has explicitly included the important role of supervision and market discipline — the so-called second and third pillars — attention remains focused on the details of pillar one, minimum capital. Analysis of this issue remains focused on individual institutions. The Basel Committee's quantitative impact studies primarily are concerned with whether or not the rules have unintended capital consequences for any given surveyed financial institution. If we assume that a more risk-sensitive approach to measuring required capital will be most beneficial to those institutions that can measure and manage risks using current best practices, it seems logical to conclude that these benefits will accrue to the largest and most sophisticated banks in the world. If one further believes that supervisors are comfortable with the *aggregate* amount of bank capital, then the implication is that smaller, less sophisticated institutions might be expected to hold higher capital levels in the future. While this might seem desirable from the perspective of individual institutions, this may result in an unwelcome outcome from the systemwide point of view if capital shifts away from systemically important institutions in the aggregate.

The final phase of promoting financial system stability is to implement policies and procedures before a crisis occurs that detail how policymakers expect to manage and resolve financial system problems when they inevitably occur. Policymakers often support quick containment and quick restoration of confidence (Ingves and Hoelscher, 2005), even though the expectation of a quick intervention may introduce moral hazard. It is not enough, however, to dismiss the moral hazard ramifications of quick containment by pointing out the fact that one never observes the counterfactual collapse that your intervention has prevented. In a study of the Fed's role in promoting the ultimate recapitalization of Long-Term Capital Management (LTCM), Furfine (2006) finds evidence consistent with the belief that the market interpreted the resolution of this now-infamous hedge fund as being beneficial to large institutions, especially those that were not directly exposed to LTCM. Aside from, but in many ways related to the moral hazard issue, is that policymakers must decide whether a particular instance of financial trouble rises to the level of systemically important. In practice, however, policymakers typically err on the side of caution rather than risk the potential for even worse calamity if they do not intervene (Edwards, 1999).

After making the determination to intervene, the policymaker has to make additional tough decisions. For example, which banks should stay and which should go? Analogous to the classic question of distinguishing illiquidity from insolvency, this, too, often is determined at least as much by social, political and legal influences than by economic evidence that is either insufficiently timely or incomplete or quite likely both.

3. Using the Framework in Practice

To consider how to implement the framework, consider these two hypothetical scenarios. Suppose you are the policymaker overseeing a financial system of 10,000 institutions. One of the largest 10 institutions is clearly insolvent, is facing a massive deposit run, and you fear that over 1,000 other institutions are holding deposits at this troubled institution in excess of their capital. Do you intervene?

This description is not unlike that which U.S. policymakers faced in 1984 when the problems at Continental Illinois led to concerns of a systemic collapse (Herring, 1987). In fact, this episode led to the explicit formulization of the too-big-to-fail policy that policymakers in the U.S. have spent the better part of two decades trying to disassemble (O'Hara and

Shaw, 1990). Of course, looking at the Continental Illinois building across the street from the Federal Reserve Bank of Chicago, one now sees Bank of America. Although it is arguable whether a private sector purchase was feasible in 1984, it seems more likely that faced with a similar situation today, choices made by U.S. policymakers may well be different.

In another hypothetical scenario, suppose you are the policymaker overseeing a slightly larger financial system, say encompassing 50,000 or so institutions. Roughly one percent of them may be in trouble because they were geographically undiversified and their particular geographic location received a large negative shock. Although 500 institutions is a fairly large number, these troubled institutions are very small relative to the size and scope of the entire financial system. Our framework for financial stability suggests that you may well be inclined to let these institutions fail. Perhaps you inquire as to why it was the case that these institutions were undiversified, but in the end, if it is possible that other, larger, more diversified institutions can participate in this particular region, then from a systemwide perspective, that should be sufficient.

The analogy to the real world being drawn here, however, pertains to the recent Asian financial crisis. Relative to the financial stability of the globe, the financial systems of Thailand, Korea, Indonesia, and Malaysia need not have been relevant. What made these systems important to local *and* international policymakers is that no alternative mechanisms could have provided the necessary financial services to support these countries had the crises been ignored by the world's policymakers. So perhaps additional effort should address what is a disconnect between economic answers and political realities. Policymakers can ask whether there would have been a crisis in Thailand, for example, if the largest three Thai banking institutions were UBS, Deutsche Bank, and Citigroup.

4. Final Thoughts

What does seem clear is that we as policymakers don't yet have all the right answers. The four papers have done a good job describing many of our existing tools for surveillance, recapitalizations and privatizations, supervision and regulation, and how these tools have improved and how they can still be further improved. This is obviously an important step towards financial stability.

References

Borio, Claudio, Craig Furfine, and Philip Lowe, 2001, "Procyclicality of the financial system and financial stability: issues and policy options," Bank for International Settlements, paper, No. 1.

Edwards, Franklin R., 1999, "Hedge funds and the collapse of Long-Term Capital Management," *Journal of Economic Perspectives*, Vol. 13, No. 2, pp. 189–210.

Furfine, Craig H., 2006, "The costs and benefits of moral suasion: Evidence from the creditors of Long-Term Capital Management," *Journal of Business*, May, forthcoming.

Haldane, Andrew G., Glenn Hoggarth, Victoria Saporta, and Peter Sinclair, 2005, "Financial stability and bank solvency," in *Systemic Financial Crisis: Resolving Large Bank Insolvencies*, D. Evanoff and G. Kaufman (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd.

Herring, Richard, 1987, "Continental Illinois Bank and Trust Company," New York University, Salomon Center, case study.

Ingves, Stefan, and David S. Hoelscher, 2005, "The resolution of systemic banking system crises," in *Systemic Financial Crisis: Resolving Large Bank Insolvencies*, D. Evanoff and G. Kaufman (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd.

Kupiec, Paul, 2005, "The IMF–World Bank financial sector assessment program: A view from the inside," in *Systemic Financial Crisis: Resolving Large Bank Insolvencies*, D. Evanoff and G. Kaufman (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd.

O'Hara, Maureen, and Wayne Shaw, 1990, "Deposit insurance and wealth effects: The value of being 'too-big-to-fail'," *Journal of Finance*, Vol. 45, pp. 1587–1600.

Sabourin, Jean Pierre, 2005, "The deposit insurer's role in maintaining financial stability," in *Systemic Financial Crisis: Resolving Large Bank Insolvencies*, D. Evanoff and G. Kaufman (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd.

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The Cost of Inefficient Resolution of Large Financial Institutions

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Impediments to Fair and Efficient Resolution of Large Banks and Banking Crises

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When applied to policymaking, economic efficiency becomes an elusive touchstone. Its value lies in allowing us to use the welfare–economics distinction between improvements in allocating and distributing resources to analyze the quality of political or bureaucratic decision-making. Mishan (1969) stipulates that good policy decisions produce outcomes that are simultaneously Pareto-efficient and "distributionally preferred" (that is, promote egalitarianism).

Policy decisions that maximize social welfare balance marginal benefits and marginal costs across relevant opportunities, individuals, and time horizons in an economically consistent fashion. However, in practice, short-run political, bureaucratic, and careerist pressures can operationally narrow the term "relevant" in *nonegalitarian* ways that foster strategies that prove Pareto-inefficient when evaluated over longer periods and, even in the short run, are welfare-reducing in the Mishan sense.

In most nations, incentives for authorities to appropriately balance social benefits and costs rely on the alleged independence, professional ethics, personal honor, and reputational risk aversion of high officials, ordinary bureaucrats, and private watchdogs. Unfortunately, when policymakers face either a systemic banking crisis or the insolvency of a major bank, the first and last two controls create incentive conflicts that dispose authorities to concentrate on avoiding blame for either causing, spreading, or prolonging bank insolvencies. Few policymakers train themselves or their staffs to confront the incentive conflicts posed by multiple or large-bank insolvencies. The result is that such events throws them into an *ad hoc* framework of loss distribution that, to generate quick action, overly constricts the opportunities, individuals, and horizons that their decisions take into consideration.

A systemic banking crisis occurs when a number of individual economic insolvencies surface at the same time. A crisis is marked by open deposit runs and urgent bank (and borrower) pleas for debt relief. It may be envisioned as a political and economic struggle over how to design a tax-transfer program that serves to unwind the losses troubled banks have accumulated and to distribute these losses and returns from continuing loss exposures between taxpayers and other bank stakeholders.

Every struggle may be likened strategically to a game. When insolvency resolution is played as a crisis game, it becomes an anti-egalitarian contest, in which money and political power dictate the outcome. Especially in the short run, regulators and the average taxpayer lack the information, the expertise, and the political and economic weapons needed to defend taxpayer interests effectively against the strategic pressure that can be exerted by savvy large depositors and politically well-connected bankers and borrowers.

Section 1 introduces the concept of safety net capital and explains briefly why and how banks accrue this capital. Section 2 describes the conditions an ideal crisis-resolution strategy must meet and indicates that authorities could combine standstill agreements, relicensing arrangements, and prompt creditor haircuts to promote these conditions. Section 3 identifies impediments to adopting fair and efficient insolvency resolution policies and attributes the persistence of these impediments to difficulties of adapting a country's regulatory culture to evolving weaknesses in its private contracting environment. Section 4 reviews the four major policy lessons this paper seeks to communicate.

1. Bank Insolvency, Contracting Theory, and Safety Net Capital

Banking is a risky business. Risk-taking can lead to insolvency and insolvency reduces a bank's capacity to redeem its deposits and other debt. In a risky enterprise, contracting theory emphasizes that outside stakeholders must control incentives for opportunistic risk-taking by managers and owners (Jensen and Meckling, 1976; Diamond, 1984).

Given the speed with which a bank's condition may sour, regulators and depositors have good reason to police bank risk-taking and capital positions. Economic analysis presumes that the desire to preserve their wealth would lead a bank's counterparties to negotiate an efficient set of pledges and deterrent rights that protect their stake in any bank. In these negotiations,

the bank has an incentive to reject a proposed restriction on its behavior if the marginal cost of the safeguard to the bank promises to exceed whatever reduction in financing costs the safeguard can generate.

Because contractual controls are never perfect, one's first defense against being victimized is to screen potential counterparties' past behavior for evidence of good character. Even where information flows are spotty and unreliable, a banker or borrower can lower its marginal cost of bonding its contract performance by investing in a strong reputation. The marginal benefits of these investments are larger the weaker is the regulatory and legal environment and the more strongly that cultural norms imbedded in the economic environment reward truth-telling and honest dealing. A counterparty's word can be an effective bond only in circumstances where the value of preserving one's honor is extremely high or where counterparties can punish noncompliance in timely and possibly brutal ways.

For depositors, individually negotiating and enforcing safeguards may be inefficient. In principle, a properly incentivized third-party regulator can lower the costs of monitoring and policing bank behavior in two ways: (1) by centralizing the task of extracting and analyzing relevant bank and borrower data; and (2) by better and more promptly coordinating actions designed to curtail bank risk-shifting. Recognizing the threat posed by residual weaknesses in private and regulatory contracting, taxpayers expect governments and institutions in every country to bond their performance by contributing to a formal or *ad hoc* safety net.

From an economic perspective, an enterprise becomes insolvent when its ability to issue and service debt can no longer be sustained from its own prospective earnings. Economic insolvency is very different from accounting insolvency, which occurs when the book value of an institution's assets falls below the book value of its liabilities. Economic insolvency is a more fundamental problem whose visibility is obscured by discretionary leeway in whether and when losses and loss exposures must be recognized. In practice, accounting insolvency seldom occurs until long after enterprise-contributed net worth is exhausted. This is because an insolvent bank can stay in business as long as it can maintain the capacity to transfer potential depositor losses to implicit and explicit elements of the country's safety net.

Financial safety nets stitch together three policy strategies designed to help troubled banks to withstand (at least temporarily) customer pressure for immediate closure: (1) procedures for sustaining a troubled bank's liquidity; (2) procedures for delaying the recognition and resolution of economic

insolvencies; and (3) procedures for drawing other parties (especially taxpayers) into the process of absorbing bank losses. Whenever market and regulatory discipline are suboptimal, each of these procedures expands opportunities for banks to shift risk. An inadequately constrained bank can profit by increasing its insolvency risk: expanding its leverage and/or fattening simultaneously the positive and negative tails of its return distribution. When it is successful, risk-shifting conveys to bank stockholders an intangible claim that Kane and Wilson (2002) call "safety net capital", S_N.

S_N capitalizes safety net subsidies. The crisis game promises to generate contingent subsidies even if a country's procedures for helping troubled banks are entirely implicit (that is, merely conjectured) rather than being spelled out explicitly in policy guidelines or formal statutes. Although not recorded on a bank's conventional balance sheets, the value of S_N is impounded in its market capitalization.

2. Benchmarking the Costs and Benefits of Egalitarian Crisis Resolution

Kane and Klingebiel (2004) portray the resolution of an insolvency crisis as a multiperiod optimization problem that unfolds over three phases: immediate damage containment, medium-term industry restructuring, and a long aftermath.[1] For implicit and explicit expenditures on containment strategies (C_S) to be optimal across the three phases, authorities must consider not only the net benefits that containment expenditures yield during phase one (B_1); they must also take account of whether and how the resources expended could have been used instead to increase the discounted value of the maximal restructuring benefits (R_1) achievable during the next two phases. Restructuring benefits may be modeled as a portfolio of second-phase and third-phase policy options that are either preserved, opened, or closed by the containment policies employed. The value of restructuring options depends to a first approximation on the value of the resources that

[1]This section draws heavily on Kane and Klingebiel (2004), a paper that seeks to convert case-study information on crisis management in 12 countries into rudimentary frequency distributions of crisis-resolution actions and their consequences. In this sample, crisis management strategies followed in the philosophically more egalitarian countries of Scandinavia proved superior to those pursued in other regions.

are put aside to spend on them (R_S) and on the volatility (V) of the subsequent banking environment.

Assuming that authorities' decision-making horizon extends across all three phases, a time-consistent and egalitarian containment strategy would maximize a two-piece social welfare function:

$$W = B_1(C_S) + R_1(R_S, V), \tag{1}$$

subject to budget restraint T given by the explicit and implicit fiscal resources that can be assigned to implicit and explicit crisis-management expense:

$$C_S + R_S = T. \tag{2}$$

A major impediment to adopting this ideal strategy is the overly optimistic presumption that fair and efficient crisis-containment strategies can be devised in the turmoil and conflict experienced during an actual crisis. In fact, because the occurrence of a crisis strongly threatens the survivability of the incumbent government and the professional reputations of high officials, it tends to dramatically shorten authorities' policymaking horizon. Officials are tempted to adopt containment policies that favor the government's political supporters and to assign insufficient weight to how these policies harm the restructuring options available to decision-makers in the second and third phase of the crisis.

A banking crisis resembles a spreading fire. Banks suffering open deposit runs may be deemed to be on fire. Supervisory personnel resemble firefighters seeking to control the fire. Containment strategy, like firefighting, seeks to locate individual fires and to stabilize the situation.

Efficient crisis management begins with an admission that, like a multi-alarm fire, a systemic financial crisis can hit anywhere and with little advance warning. Again, like a major fire, the damage a crisis ultimately works on the financial sector, on the real economy, and on the average taxpayer can be contained by timely and skillful treatment. To be able to efficiently stop an emerging crisis from escalating, emergency response teams must be assembled in advance and trained on a standby basis (Kane, 2001b). It is unreasonable to ask emergency response teams to learn to use the financial equivalent of gas masks, multi-storey ladders, and high-pressure hoses on the fly.

During the containment phase, authorities seek to assess and arrest the damage the system is experiencing. Like firefighters, their duties are to sort

out which of the institutions that are on fire can and cannot be saved and to minimize the damage to other structures by spraying on enough liquidity to restore public confidence in salvageable banks' ability to meet legitimate customer demands. Alternative containment policies differ in the time and resources devoted to the sorting activity and in how interim liquidity is generated and disbursed.

How well and how cheaply the many damaged institutions can be rehabilitated depends very much on how the firefighters approach their jobs. The sooner and more accurately they can identify hopelessly burnt-out banks, the better.

Financial sector restructuring resembles the follow-up task of rebuilding a fire-damaged neighborhood. Restructurers use sophisticated methods to estimate asset values and to shore up salvageable institutions' profitability and reputation. Their task is to identify, clean up, and consolidate the portfolios of insolvent banks and to see that the capital position of the reconstituted firms is adequately restored by financial engineering.

3. Mechanisms for Decreasing Public Loss Exposure: Standstills, Relicensing, and Haircuts

Containment treatments consist of haircuts, standstill requirements, loans, credit lines, and guarantees. Haircuts reduce the value of creditor claims to realistically collectable values that lie below contractually specified amounts. Standstills put the claims of various private parties on hold for a specified period of time. Other treatments create a series of immediate or deferred government obligations. The credibility of these obligations depends on the government's ability to service them. This fiscal capacity depends in turn on officials' ability to scale back other planned expenditures and to collect new taxes.

Emergency loans to troubled banks help the macroeconomy by providing funds with which to service customer demands for immediate liquidity. Credit lines are meant to relieve customers' anxiety and to curtail their immediate demands by committing the government to provide future liquidity support as needed. Long-lasting commitments make it reasonable for customers to believe that they can successfully extract funds from troubled institutions whenever in the future they might need them.

Guarantees are credit enhancements. They allow damaged banks to borrow from other parties on the credit of their governments. The amount

by which the guarantee lowers a bank's cost of funds measures the gross value of the "bailout" the guarantee delivers to the bank.

To the extent that government loans and credit lines are written at a below-market interest rate, rescuers implicitly pump free equity into the recipient's capital structure. When the government does not plan to ask banks to compensate it fully for the costs of supporting the credit enhancement, some of this free equity capital is transferred from taxpayers to stockholders and creditors of recipient banks. Honohan and Klingebiel (2003) define the capital that emergency treatments assign to troubled banks as the bailout cost of the containment strategy (C_S).

At the margin, increased expenditures on containment entail two tradeoffs. They reduce the restructuring budget. They also promise to reduce volatility V during the second phase, but this benefit comes at the expense of raising industry volatility and safety net subsidies during the aftermath. Assuming $\frac{d^2W}{dC_S^2} < 0$, optimal containment policy would balance the opportunity costs and benefits of shifting the last dollar of available fiscal resources between containment and restructuring, so that:

$$\frac{dB_1}{dC_S} = -\frac{dR_1}{dC_S}. \tag{3}$$

Blanket guarantees cover all liabilities and all banks regardless of their economic viability. Issuing blanket guarantees violates the intertemporal optimization condition in Equation 3 and ultimately explodes the intertemporal budget restraint T by relieving firefighters of their target-selection responsibilities and deferring all triage activity to the restructuring phase. By issuing blanket guarantees, a government can avoid having to designate the liabilities of burnt-out institutions as unworthy of government support. However, no matter what political and administrative benefits blanket guarantees generate, keeping moribund institutions fully licensed generates excess costs to taxpayers over the crisis as a whole. Moreover, because it cedes control over future restructuring costs in part to the machinations of the country's weakest institutions, the loss tends to increase the longer the guarantees are kept in place.

Governments that try to contain a spreading financial crisis by guaranteeing the liabilities of hopelessly insolvent banks paint themselves into a corner. Their first challenge is to convince skeptical depositors that authorities possess the political will and fiscal capacity to make good on the full range of their guarantees. Otherwise, emergency guarantees will appear

inadequate and feed new and hotter fires. The problem with indiscriminate guarantees is that, as long as a deeply insolvent bank remains fully licensed, clever depositors can cut their losses by removing or collateralizing their deposits. These actions decrease the "haircut" that the government can impose on them when the bank's insolvency is finally resolved.

Assuming its guarantees are credible, the government faces three follow-on challenges: to control the amount of new debt that wounded institutions load onto the balance sheet of the government, to control how prudently guaranteed institutions invest the funds they receive, and to cut back or eliminate the guarantees once the restructuring process goes forward. Licensed banks whose credit is fully guaranteed can issue the functional equivalent of new government debt as long as they remain open. This tempts managers of insolvent banks to abuse their access to government assistance by taking on extremely high-risk projects. Although abusive "gambles for resurrection" reduce the nation's capital stock, they make sense to owners and managers of insolvent banks. The government guarantor accepts the full downside of these banks' future losses, and at least in the short run the guarantor is very likely to capture all but the most outsized positive returns.

Standstill requirements. The simplest standstill requirement is a brief timeout taken to allow government forensic analysts and private auditors to assess the depth and character of troubled banks' structural problems. The purpose of a several-day "banking holiday" is to allow specialists time to diagnose individual-bank insolvencies and to recommend and impose preliminary haircuts on formally uninsured depositors and nondeposit creditors before these parties can liquidate or collateralize their exposure in the bank. To assure prompt markdowns, authorities in all countries would be well-advised to follow New Zealand's lead. New Zealand is establishing a computer-actuated capability at individual banks that could pass changes in the accounting value of creditor claims through their balance sheets virtually in real time (Harrison, 2004). (Governments might even specify in advance that deposits withdrawn during the last few days of a holiday-causing run would be reversed and subjected to haircuts as well.) In any case, haircuts reduce the depth of each bank's insolvency by cramming down the enforceable size of its debts. Haircuts protect taxpayers by lessening the extent to which restructuring has to depend on taxpayer-financed loans, credit lines, and guarantees.

Using the holiday to prepare a program of limited guarantees and to write down insolvent banks' uninsured deposits to values that their earning

assets can genuinely service promises simultaneously to restore public confidence both in the government and in the banking system. Examining the aftermaths of pre-1992 systemic crises in which governments assigned losses to depositors of insolvent banks, Baer and Klingebiel (1995) find that the positive benefits of reducing depositor uncertainty relatively quickly overcame the negative effects that surviving banks experienced from the deposit write-down.

The social goals of fairness and avoiding civil unrest are best served by minimizing the haircuts imposed on very small depositors. Small depositors are unlikely to be sophisticated enough to have discerned in timely fashion that their bank was not well run and, in any case, maintaining low-income households' ability to feed and house their families over the near future deserves high priority.

The same two goals dictate that, at the end of the holiday, larger uninsured depositors be promised a just degree of immediate fractional access to their transactable deposit balances (Kaufman and Selig, 2000). Of course, when a bank's portfolio proves particularly difficult to value, term depositors and nondeposit creditors (particularly foreign ones) might be forced to wait longer.

Far-broader timeout strategies are possible, and might prove useful in countries that lack U.S.-type bankruptcy protections for sustaining the circular flow of income and production. In an economy undergoing widespread corporate distress, a government might mimic U.S. Chapter 11 protections and conserve productive assets by instituting a grace period during which major creditors of any important nonbank corporation would be required to let the debtor delay payments of principal and interest due on existing bond or loan contracts. These delays would grant important borrowers and their creditors time to work out — aided perhaps by administrative courts or qualified mediators or arbitrators — a replacement contract structure. The new contracts would cram down the obligations of damaged debtors to levels that they or their successor corporations or receivers can fairly and realistically be expected to service in the wake of the crisis.

Forcing private parties to renegotiate unenforceable contracts is sometimes termed a "bail-in strategy". As with the haircuts imposed on bank creditors, reducing the formal obligations of bank borrowers or converting their debts into equity positions before issuing government bailout loans or guarantees would trap creditors that financed weak institutions into participating more fully in the intersectoral loss-absorption process. The strategy

seeks to prevent better-informed private stakeholders in insolvent banks and businesses from using covenant and other contractual rights to seize collateral or accelerate their particular claims on banks and bank customers at the expense of other claimants and of the level of current production.

The speed and accuracy with which containment haircuts can be sized and banks relicensed depends on the extent to which appropriately trained valuation professionals exist and can be shifted from their "day job" and deployed in emergency teams by the supervisory agency (Pomerleano, 2002; Kane, 2001a, b). Especially in countries that combine weak accounting standards with feeble contract enforcement, a margin for error must be built into haircut and relicensing decisions. To protect the average taxpayer, the margin should increase with whatever gap exists between the complexity of the insolvent bank's positions and the skills of the appraisal team.

Explicit netting agreements and rights of set-off that foreign creditors enjoy in offshore jurisdictions tend to reduce the size of the haircut they can be made to absorb. Foreign creditors pose additional problems in that they may be better informed than domestic creditors and be able to move funds out of the country just before the crisis breaks. Even in the midst of a banking holiday, they may be able to undertake trades on multinational networks that further reduce their haircut exposure. The need to confront these problems explains why controls on capital movements are often included in crisis-containment strategies.

A depositor timeout that lasts for weeks or months is called a "deposit freeze". As long as even a partial deposit freeze lasts, it curtails the liquidity of affected customers and reduces the nation's aggregate money supply. To minimize customer inconvenience and macroeconomic fallout, salvageable banks should be relicensed and even at banks that are delicensed and placed in the restructuring program, insured depositors should be granted access to their funds as soon as this becomes administratively feasible. It must be emphasized that crisis managers are bound to mishandle holidays, freezes, and relicensing if they have not engaged previously in disaster planning exercises and crisis management simulations.

Relicensing and liquidity support. Walter Bagehot's (1894) time-tested policy advice for managing aggregate liquidity during a systemic crisis is for the central bank to lend freely to solvent banks — albeit at a penalty interest rate and only on good collateral. This policy limits the taxpayer burdens that emergency lending can generate and creates an incentive for borrowing banks to repay their loans promptly when the crisis eases.

The obverse of this advice is for governments to avoid lending to insolvent banks *at all*, even on good collateral and certainly *not* at below-market interest rates. Such banks' ability to raise and invest new funds must be curtailed by delicensing. Collateralized loans to insolvent banks unfairly undermine the positions of depositors and the deposit insurer by stripping away some of the bank's best loans and investments from the already undersized pool of assets on which other claimants must rely for repayment. Collateralized government loans to insolvent banks harm holders of these banks' pre-existing liabilities in two ways: *directly* by increasingly limiting their chances for repayment to recoveries from poorly performing assets and *indirectly* by generating incentives for borrowing banks to invest any new funds these deals raise in excessively risky ways.

The time frame over which insolvent institutions extract liquidity support typically begins several months before the onset of system-wide depositor runs. The very noisy and unserviceable runs that bring a systemic crisis to a head are preceded by less-disruptive "silent runs" on individual institutions. The trigger for a silent run is that the aggregate size of capital shortfalls at insolvent banks becomes so large that savvy large-denomination depositors begin to doubt that the *government* has the fiscal capacity to honor its implicit and explicit guarantees of troubled institutions' outstanding liabilities.

Once individual depositors of an insolvent institution doubt the government's ability to underwrite bank losses, they have an incentive to quickly collateralize their deposits or redeem them at par before an open run can close this option to them. The deeper they suspect a bank's insolvency to be, the stronger this incentive becomes. Even in countries with well-developed capital markets, troubled institutions cannot easily sell customer loans for fair value prior to maturity. This means that an insolvent institution's first line of defense against a silent run is to take out collateralized loans secured by its best assets from various counterparties, including especially the central bank and stronger institutions (often foreign ones).

As the fraction of depositors seeking redemption and collateralization grows, an insolvent bank's use of liquidity enhancements becomes larger and larger as well. For this reason, supervisory authorities should require banks to file daily or weekly reports on positions whose growth can signal the existence of a silent run: collateralized deposits, repurchase agreements, and central-bank and foreign borrowings. When their early warning signals flash, authorities should send valuation experts to investigate the quality

of the ailing banks' loan portfolios and reporting systems. Even though this fact-driven examination strategy might advance the onset of systemic pressure, it would constrain the ultimate size of aggregate insolvencies by blocking last-ditch gambles for resurrection. It would also reduce the government's overall loss exposure by making it harder for sophisticated depositors to escape their fair share of bank losses.

To embrace Bagehot's advice, a crisis government must have planned for crisis by assembling an administrative staff that can distinguish quickly between deeply insolvent banks and those that are solvent enough to be salvageable. (It might also prepare itself to enlist a multinational team of experts to supplement in-house skills.) To access the budgetary resources necessary to cull insolvent banks promptly, officials' commitment to the norms of egalitarianism and honest dealing must be strong enough to resist the strong political pressures a crisis unleashes to rescue powerful special interests at taxpayer expense.

4. Determinants of Safety Net Capital

The magnitude and frequency of safety net support varies both across countries and over time. The marginal costs and benefits an individual bank experiences in expanding or narrowing the risk-shifting options imbedded in S_N are affected by the ways in which over time a country marries its bank-customer contracting environment with the limitations on government monitoring and enforcement activity inherent in its regulatory culture.

4.1. *Dimensions of a country's contracting environment*

A major feature of any country's contracting environment is the mechanisms that firms and governments use to strengthen the enforceability of nominal stockholder and creditor claims to corporate cash flows. These mechanisms include contractual credit enhancements (such as collateral and third-party guarantees) and less-specific guarantees implicit in the quality of a firm's management and corporate governance.

A country's narrower bank-customer contracting environment has three principal dimensions: (1) the quality of the information that banks and counterparties exchange (informational transparency, T); (2) the strength of the performance bonds and deterrent rights counterparties can negotiate to protect their stake in individual banking deals (deterrency, D); and (3) the

extent to which regulatory arrangements do or do not effectively compensate for weaknesses in T and D.

Information may be defined as knowledge or news about broad market forces and individual-borrower prospects that a competent economist could use to produce an unbiased estimate of the opportunity-cost value of a bank's tangible and intangible net worth. Governments regulate transparency by requiring banks to submit to outside examinations and to publish regular financial statements under penalties for fraud and negligent misrepresentation. Despite these safeguards, banks routinely engage in "window-dressing" and government examiners are expected to treat adverse examination data as confidential. When the industry is weak, authorities typically go even further, helping banks to put a favorable "spin" on whatever unpleasant facts are leaking out.

The risk-shifting opportunities a bank enjoys depend on the vision and deterrent rights that its counterparties and supervisors possess and on these parties' incentives and ability to exercise their risk-control options *promptly*. Because regulatory discipline tends to displace at least some private discipline, the net social benefits that society derives from enhancements in government supervision are easy to exaggerate. The extent (R) to which regulation actually compensates for weaknesses in the bank customer contracting environment tends to be greater in ordinary times than when a crisis threatens or ensues. The implicit elements in a country's safety net become directly observable only in crisis circumstances. During crises, government enforcement of risk-control measures typically deteriorates as political pressure for government-sponsored bailouts of powerful parties becomes intense.

In turn, the safety net capital that surfaces in a crisis establishes precedents that promise to worsen future bank behavior. To weaken this effect, taxpayer pressure for improved disclosure and supervision encourages authorities to strengthen chartering criteria, disclosure requirements, and capital regulation to some degree when a crisis is past. Still, the precedent established by rescue operations reinforces the perception that governments and multilateral institutions will do what it takes to protect major banks during future crises. Patterns of regulation that decrease the probability that a bank will ever be liquidated simultaneously lessen private counterparties' incentives to invest time and energy in monitoring their banks or to respond promptly to evidence of bank weakness. Regulators' reluctance to fail and unwind large domestic banks inefficiently encourages managers of these

banks to grow by absorbing smaller competitors and delivers benefits to foreign banks that deal with these banks and their major customers.

4.2. *Effects of a country's regulatory culture*

It is reasonable to suppose that how well the incentives of top regulatory officials align themselves with societal interests during the crisis game depends on officials' accountability (A) for policy mistakes and ethical lapses. Accountability expresses the extent to which officials can be made to answer after the fact both for losses and loss exposures that regulators failed to recognize or deter in at timely manner during the precrisis period and for having accepted corrupting benefits from banking interests for resolving insolvencies in industry-subsidizing ways.

Opportunities for a bank to engage in precrisis risk-shifting may be said to vary inversely with the quality of its contracting environment (E) and the quality of regulatory oversight (R). This means that, at any time, S_N should be a decreasing function of E and E itself should be an increasing function of transparency, deterrency, and regulatory accountability.

$$E = E[T, D; R(A)]. \tag{4}$$

The semicolon in equation 4 expresses the hypothesis that other equations exist in which variation in A and R both influence and respond to the level of T and D.

Bank regulation and supervision often constitute a complex game of "cat and mouse". Bankers routinely conceal from external auditors and government examiners at least some adverse elements of their firm's economic condition and performance and at least a few of the unhedged elements in their risk-management program (for example, the extent to which recourse is implicitly conveyed to investors in credit-card securitizations). Troubled banks are usually masters of concealment, persuasively mischaracterizing lasting problems as temporary difficulties that are going to be cured by (projected) future profits.

Insolvency resolution cannot be fully efficient unless banking regulators faithfully perform four duties of "public stewardship" that I believe common law imposes on all public servants:

1. *Vision* (maintaining a capacity to recognize risk-taking and capital shortages in timely fashion);
2. *Prompt corrective action* (being committed to control the value of implicit and explicit guarantees);

3. *Least-cost resolution* (efficiently curing insolvencies that corrective action fails to avert); and
4. *Truth-telling* (keeping taxpayers informed about the opportunity costs of regulatory strategies).

Before insolvency resolution can begin, regulatory personnel must unearth and competently analyze enough hidden information to declare the bank legally insolvent. This search for hidden evidence as well as the ways in which regulators respond to this evidence are limited by a country's particular regulatory culture. In the U.S., the Federal Deposit Insurance Corporation Improvement Act of 1991 establishes accountability only for the middle two duties. Not enforcing the duty of vision makes it easier for regulatees to keep an informational edge on regulators. Not enforcing the duty of truth-telling enables regulators to keep taxpayers and politicians poorly informed about defects in regulatory structure and performance.

Anthropologists define a culture as ways of living that are built up by a group of humans dwelling in a perceived *community* and transmitted *across generations*. By analogy, a country's regulatory culture is a set of traditions, values, and beliefs that dictate how members of a country's regulatory community are supposed to act. The norms of this culture must be consistent with national standards of fair play and with limits on the use of government power embodied in a country's larger political and legal environment.

Regulatory cultures differ in the regulatory rights they convey, in how they convey these rights, and in how they constrain the exercise of these rights. Important differences affect six component processes of rule-making and enforcement:

- Statutory authority and reporting obligations,
- Formulation and promulgation of specific rules,
- Technology of monitoring for violations and compliance,
- Penalties for material violations,
- *Ex ante* accountability: Due process with assigned burdens of proof (to guarantee fairness), and
- *Ex post* accountability: Rights of appeal (to bond the fairness guarantee).

Cultures do not remain static. Over time, the effectiveness of a given regulatory culture may be undermined by innovations in regulatees' concealment capacities and increases in regulatees' political clout. To function efficiently in a world of rapid technological and political change, each

component process must be able to adapt promptly and appropriately to changing circumstances. However, regulatory norms are designed to accommodate industry political interference and to limit the speed and extent of regulatory response to emerging problems and new ways of doing things.

In modern nation states, norms that restrict regulatory authority and its exercise are rooted in a distrust of governmental power that traces back to cruelties unleashed on the populace in the near or distant past when the country was occupied, colonized, or run by ruthless monarchs or one-party governments. Four such regulatory norms are nearly universal. Together, they allow an economically insolvent bank to extend its life beyond (usually far beyond) the point of economic insolvency:

1. *Industry-support norm*: This norm allows innovations in concealment capacity or risk-taking to expand until their adverse effects can be proven.
2. *Mercy norm*: This norm grants supervisory and regulatory favors to bankers whose losses appear to trace to "bad luck" that are denied to bankers who aggressively or fraudulently flout the rules.
3. *Presumption-of-innocence norm*: In applying the mercy norm, this presumption gives individual banks the benefit of any doubt. It demands that bank examiners and higher government officials treat accounting and control weaknesses as evidence of bumbling rather than bad faith until their trust in a bank's management team has completely and convincingly evaporated.
4. *Job-simplification norm*: This norm generates a particular aversion to failing and unwinding large or complex banking organizations or to engaging in detailed crisis planning that fair and efficient insolvency resolution demands.

5. Summary Implications

This paper sounds four themes. First, delays in confronting and resolving financial distress increases the depth and duration of banking crises. Second, norms that prolong these delays are to varying degrees built into the regulatory structure of individual countries by endogenous political and bureaucratic forces. Third, these same norms support unfair and inefficient patterns of initial crisis containment that increase the overall cost of crisis management (Honohan and Klingebiel, 2003) and the extent to which the average taxpayer is made to shoulder this cost (Halac and Schmukler, 2004).

Fourth, regulators and supervisors could lessen these costs by planning explicitly for crises and debugging these plans by conducting simulated exercises in crisis containment and resolution at regular intervals.[2]

Requiring supervisory personnel to manage a simulated crisis has several advantages. The process would force top officials both to plan in detail and to staff for actual crises. In setting up a crisis-containment fire drill, planners would be able to design their agencies' response protocols in full recognition of the limitations on actions imposed by their regulatory culture, but in the absence of the disruptive distributional politics they would face in an actual crisis. They would also be able to test and coordinate the protocols they formulate without risking irreversible damage to either the national economy, their agency's budget, or their individual careers. At the same time, these exercises would provide a way to drill into institutional memory the lessons learned in temporally and geographically distant crises. Finally, publicizing the protocols in advance of any actual crisis can impart to agency personnel the confidence to apply these lessons aggressively.

References

Baer, Herbert, and Daniela Klingebiel, 1995, "Systemic risk when depositors bear losses: Five case studies," in *Research in Financial Services*, Vol. 7, George Kaufman (ed.), Stanford, CT: JAI Press, pp. 195–302.

Bagehot, Walter, 1894, *Lombard Street*, 11th ed., London: Kegan, Paul, Trench, Truber, and Company.

Diamond, Douglas, 1984, "Financial intermediation and delegated monitoring," *Review of Economic Studies*, Vol. 51, July, pp. 343–414.

Halac, Marina, and Sergio L. Schmukler, 2004, "Distributional effects of crises: The financial channel," The World Bank, working paper, June.

Harrison, Ian, 2004, "The Reserve Bank of New Zealand's bank creditor recapitalization (BCR) project: An option for resolving large banks," presentation at the Federal Reserve Bank of Chicago, Conference on Systemic Financial Crises, Oct. 1.

Honohan, Patrick, and Daniela Klingebiel, 2003, "The fiscal cost implications of an accommodating approach to banking crises," *Journal of Banking and Finance*, Vol. 27, August, pp. 1539–1560.

[2]At the FDIC, the Dallas office conducted such an exercise for the first time in 2003.

Jensen, Michael C., and William Meckling, 1976. "Theory of the firm: Managerial behavior, agency costs, and ownership structure," *Journal of Financial Economics*, Vol. 3, June, pp. 305–360.

Kane, Edward J., 2001a, "Dynamic inconsistency of capital forbearance: Long-run vs. short-run effects of too-big-to-fail policymaking," *Pacific Basin Finance Journal*, Vol. 9, August, pp. 281–299.

———, 2001b, "Using disaster planning to optimize expenditures on financial safety nets," *Atlantic Economic Journal*, Vol. 29, September, pp. 243–253.

———, 2000, "Capital movements, banking insolvency, and silent runs in the Asian financial crisis," *Pacific Basin Financial Journal*, Vol. 8, May, pp. 153–175.

Kane, Edward J., and Berry Wilson, 2002, "Regression evidence of safety net support in Canada and the U.S., 1893–1992," *Quarterly Review of Economics and Finance*, Vol. 42, Fall, pp. 649–671.

Kane, Edward J., and Daniela Klingebiel, 2004, "Alternatives to blanket guarantees for containing a systemic crisis," *Journal of Financial Stability*, Vol. 1, pp. 31–63.

Kaufman, George, and Stephen Selig, 2000, "Post-resolution treatment of depositors at failed banks: Implications for the severity of banking crises, systemic risk, and too-big-to-fail," Federal Reserve Bank of Chicago, working paper, December.

Mishan, E. J., 1969. *Welfare Economics: An Assessment*. Amsterdam and London: North Holland Publishing Company.

Pomerleano, Michael, 2002. "Back to basics: Critical financial sector professions required in the aftermath of an asset bubble," *Appraisal Journal*, Vol. 70, April, pp. 173–181.

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Dealing with Financial Fragility in Transition Economies

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The resolution of bank crises in the transition economies, at least until the late 1990s, differs from resolution elsewhere. Transition banking experienced a birthing stage in which a decentralized private banking system was carved out of the vestiges of a public monobank structure. The banks carved out of the state monobank were often undercapitalized and, most importantly, were expected to support the state-owned enterprises (SOEs) in the evolving market economy. Furthermore, the state-owned commercial banks (SOCBs) were often joined by poorly capitalized and loosely regulated new entrants. In essence, the birthing process provided the seeds of a banking crisis. However, calling transition banking a special case begs the issue of understanding how these countries corrected the situation relatively quickly. Although the transition experiences in dealing with financial fragility were often costly and sometimes drawn out by a slow learning process, most countries in the region now have remarkably strong banking systems.

In this paper, we examine the experiences of transition economies with financial fragility. In the first section, we characterize the birthing process and the three essential features of banking crises in transition economies. In the next section, we examine the experiences of seven important transition countries in order to identify the salient features of their efforts to resolve banking crises. Our reflections on these experiences are found in a concluding section.

1. Banking in Transition Countries: The Birthing Process

Banking sectors in transition economies (TEs) underwent a birthing stage in which a decentralized private banking system was carved out of the vestiges of a public monobank structure. In some TEs, a single new bank assumed the entire commercial portfolio of the monobank; in others, several new commercial banks were born. In addition, one or more large specialty banks existed having monopolies over their respective core activities, for example, a savings bank for primary deposits and a foreign trade bank for all foreign currency transactions. The resulting state-owned commercial banks (SOCBs) were undercapitalized and expected to support the state-owned enterprises (SOEs) in the evolving market economy. In addition, entry requirements were relatively lax to induce domestic competition so that poorly capitalized and loosely regulated private entrants added to the seeds of banking crises.

Governments in the TEs faced three interrelated major tasks in developing efficient banking sectors from this embryo. First, most of the SOCBs were insolvent. Prior to transition, loans were not made according to market criteria so that many of the existing assets held by these banks became nonperforming in the market economy. In addition, the situation was exacerbated at the outset of transition by governments that were eager to eliminate fiscal deficits. They eliminated fiscal subsidies to SOEs, which turned to their SOCBs for financial support. Therefore, the first task for developing independent banking sectors was to correct the incentives that generated bad lending and to make transparent the financing of government policies.

Bank insolvency has two components, namely the stock of inherited bad loans and the flow of new bad loans. To prevent the recurrence of insolvency, any resolution program must remove from the banks both the incentives to make bad loans and the impediments that prevent them from extricating themselves from weak clients. To the extent that SOCBs are unable to shed SOEs that cannot perform profitably in the market environment, providing financial support for these clients insures that bad loans will continue to impact adversely the solvency of SOCBs.

The second task, creating the institutional and legislative infrastructure to support and facilitate the transition to a market economy, was of equal importance. Without the supporting institutional and legislative infrastructure, neither the information nor the incentives for resolving bank insolvencies are forthcoming. Therefore, institution building is necessary although

it is not sufficient. Specifically, bankruptcy laws and accounting standards were required to change the behavior of economic agents who were accustomed to operating in the non-market environment and human capital development was needed for effective implementation. Proper attention must be given to the incentives of individual decision-makers if the legislation is to be implemented successfully. Hence, any resolution program must be integrated carefully with the evolving institutional structure to avoid inconsistencies and unwarranted expectations. Since the SOCBs held the predominant share of banking assets, the third task was bank privatization.

To avoid a moral hazard problem, the government must be able to commit credibly to a final resolution of the insolvency problem. Multiple recapitalizations of SOCBs in the TEs were taken as evidence of an inability or unwillingness on the part of governments to harden budget constraints on banks and, by association, their client SOEs. In retrospect, a combination of the difficulties of recognizing the full extent of the problem due to the dynamics and a reluctance to allow banks to sever relationships with existing weak clients influenced significantly the policy options.

The European Bank for Reconstruction and Development identifies 27 TEs (not counting China and the other Asian TEs) although the group is probably no more alike than any random sampling of nations around the world. Included are large countries, for example, Russia, and extremely small countries, for example, Slovenia and Estonia. Considerable differences in the level of development are observed from Central Europe to Central Asia leading to significant differences in banking systems. In order to provide an overview of the salient issues, we focus on seven TEs that have different characteristics and pace of bank restructuring. We include the two largest TEs, namely, Russia and China, and we consider the TEs with the most developed banking systems, both at the start of transition and at the present, namely, Poland, Hungary, and the Czech Republic. In addition, we consider two other TEs with a long history of grappling with banking development, namely, Bulgaria and Romania. Our choices do not include very small countries, those with idiosyncratic political situations (for example, former Yugoslavia) or those with minimal extent of financial intermediation (for example, some of the Commonwealth of Independent States). For estimates of the costs of bank restructuring programs, we draw on those found in Caprio and Klingebiel (2003), Tang *et al.* (2000), and Zoli (2001). Bonin and Wachtel (2003) summarize banking developments in transition and Enoch *et al.* (2002) addresses the issue of resolution.

2. Resolving Bank Crises in Transition Countries

Poland. A two-tier structure was established in 1989 resulting in a central bank, nine regionally based SOCBs and four specialty banks. In 1991, the Polish government recapitalized banks to cover losses from the currency devaluation. By 1993, nonperforming loans were still 31 percent of total bank loans as banks continued to lend to their nonrestructured SOE clients. With the support of the World Bank, the Polish government designed a bank-led enterprise restructuring plan that linked bank privatization and recapitalization with bad-debt workouts. In addition, the agricultural bank BGZ, which is an umbrella for numerous agricultural cooperative banks, was recapitalized. The government also made efforts to restructure the industry by orchestrating mergers through a bank consolidation program. Caprio and Klingebiel (2003) indicate that the cost of recapitalizing the seven commercial banks in 1993 was $750 million and the cost of recapitalizing the agricultural banks was $900 million. Zoli (2001) estimates the total fiscal cost of all restructuring efforts in Poland at only 7.4 percent of gross domestic product (GDP), most of which was due to initial recapitalizations in 1991.[1]

Throughout this period, the payment system functioned with a few notable early problems due to the underdeveloped infrastructure for clearing checks among the regional banks. In addition, financial depth did not decline and foreign participation, both greenfield and in the privatization process, began after 1995. The legal infrastructure, which was largely the pre-Communist commercial code because extensive legal reforms did not occur until the later 1990s, was adequate for the early development of the banking sector. The central bank operated at arms length from bank restructuring and played an effective supervisory role. By 1998, a majority of the banking system was private and, by the end of the following year, more than half of bank equity was foreign owned.

The fundamental characteristic of the Polish approach to bank restructuring is that the responsibility for working out bad loans was retained by the banks, which were expected to promote enterprise restructuring. The program was intended to build institutional capability in the banks and provide flexible enterprise restructuring without government interference. The underlying presumptions were that the major banks had sufficient

[1]Zoli's estimate appears to ignore the continued fiscal support for the state-owned savings bank and agricultural bank.

information about their large SOE clients either to promote restructuring or to opt for liquidation and that the banks had sufficient incentives to maximize debt collections. Actual experiences indicate that restructuring dominated bankruptcy and that the main workout instrument used by the weaker banks was the debt-equity swap. Bonin and Leven (2001) find that new credit extended to three large military–industrial clients by one SOCB in the program exceeded the total amount of the bank's recapitalization and left it with more, rather than less, exposure to these clients. Hence, Poland's program strengthened, rather than severed the ties between banks and their undesirable clients and provided breathing room for weak SOEs to postpone painful restructuring.

Hungary. The birthing process in Hungary started with the establishment of the SOCBs in 1987 and a regulatory agency in 1992. Although the initial steps were appropriate, two sources of difficulty emerged. First, lax entry standards resulted in the creation of many small and poorly capitalized or poorly run de novo banks that were responsible for several instances of fraud. Many of the de novo banks became insolvent and were either closed or forced to merge with other institutions. Although this experience threatened the stability of the financial system, no systemic crisis or explicit bailouts by the government or the central bank occurred. Second, the establishment of the SOCBs did little to change the relationship between banks and their traditional SOE customers, particularly because the banks were organized along sectoral lines. Bad loans by SOCBs to SOEs accumulated rapidly. Moreover, improvements in accounting rules for classifying loans and new bankruptcy legislation served to indicate that the bad loan problem was large and growing.[2]

In an initial effort to recapitalize banks in 1991, the Hungarian government extended loan guarantees for inherited bad loans. The government bought loans and interest claims that totaled almost 3 percent of GDP and paid for them with specially issued bonds. About one-third of the loans were transferred to a factoring agency for workout and the rest was left with the banks to work out under contracts with the Ministry of Finance that restricted new lending.

The Hungarian approach involved dealing with bank recapitalization, enterprise restructuring, and institutional development simultaneously. During 1993, the government developed a program for the recapitalization of large (nonbank) SOEs. The government bought or forgave debts of these

[2]Abel (2002) provide more information on Hungarian banking.

enterprises and the banks received government bonds in excess of 1 percent of GDP as part of the program. Nevertheless, the amount of bad or doubtful debt at the banks kept increasing and another comprehensive recapitalization followed at the end of 1993 when capital injections of more than $1 billion were made. The recipients included the three large SOCBs, which accounted for over half of the overdue credit in the banking system and were insolvent. Later stages of the program in 1994 provided additional financing and incentives to deal with bad loan problems. The total amount provided was somewhat less than 2 percent of GDP and the three large commercial banks received over 80 percent of the funds involved.

Multiple recapitalizations of its SOCBs earned Hungary the dubious reputation at the time as being the country most oblivious to moral hazard. The first recapitalization was insufficient both because the instruments used were not sufficiently liquid or financially attractive and because the banks were still servicing bad clients. The second bank recapitalization was ultimately successful because soon afterwards Hungary adopted a policy of privatizing state banks by selling controlling shares to strategic foreign investors. The willingness of the Hungarian government to sell large banks to strategic foreign owners provided the credible commitment of no further bank bailouts and hastened reforms in the relationships between banks and SOEs. Between mid-1994 and 1997, all of the Hungarian state owned-banks were sold to foreign investors.

The Hungarian experience points to the importance of SOCBs achieving independence both from the state and from undesirable clients. By the end of the 1990s, the Hungarian banking sector was the strongest in the region. The costs of the recapitalization programs in the 1990s amounted to 13 percent of 1998 GDP (Tang *et al*., 2000).

Although the Hungarian banking sector is largely well capitalized and controlled by foreigners, it has not been immune to banking crises. A few small banks have been liquidated without any direct cost to the government because the deposit insurance agency covered the deposits. In 1997, a run on the sixth largest bank resulted in its nationalization and the subsequent dismissal of the bank's management for fraudulent behavior. It continued to accumulate losses and cost the government 1.7 percent of GDP (not included in the above total costs). The bank was privatized in 2003 for about 2.75 times its book value illustrating the resiliency of the mature Hungarian banking system to resolve successfully a banking crisis and avoid systemic problems.

Czech Republic. Working capital of SOEs in Czechoslovakia was funded by short-term, low-interest, revolving bank credit (TOZ loans). All of these loans were transferred to a hospital bank and the large SOCBs were freed of bad loans accumulated before 1991. This restructuring program cost about $750 million or less than 1 percent of GDP. About one third of the funds went to capital infusions to the large banks and the rest was related to the takeover of bad loans. However, the SOE clients remained with their parent banks that continued to provide banking services and new loans. To encourage competition, privatization, and expansion, all banks were given refinancing credits by the central bank.

Three of the largest four banks in the Czech Republic participated in the first wave of voucher privatization in 1992. Investment funds, the largest of which were created by these banks, were an integral part of the Czech voucher privatization program. Hence, this initial divestiture of state holdings in banks and companies resulted in an interlocking ownership of banks and clients in which the state retained large controlling stakes of the privatized banks. The banks maintained their long-standing soft-lending relationships with their voucher-privatized enterprise clients and through the bank-owned privatization funds now held an equity interest in these firms. Voucher privatization strengthened the relationships between banks and their clients and contributed to rapid deterioration of the banks' balance sheets. In addition, the existence of the state-owned hospital bank made it impossible for the government to commit credibly to end further bank bailouts. Moreover, tax laws that restricted write-offs and laws that restricted the ability of banks to sell collateral contributed to the growth of bad loans. Although the situation was quickly apparent, several years passed before any meaningful efforts were made to resolve the problems.

In the interim, many small- and medium-sized banks encountered liquidity problems, which led to additional resolution programs (Matousek and Taci, 2002). At the end of 1995, a second consolidation program involved closures, liquidations, and mergers of many small- and medium-sized banks with the central bank acting as lender of last resort to keep open some of the banks in receivership. Although the 18 banks in this program represented only 9 percent of bank assets, fear of a systemic bank crisis provided the rationale for the government's policy. The program cost to the central bank was 2 percent of 1996 GDP.

In the summer of 1996, a run on Agrobanka, the fifth largest bank at the time, resulted in liquidity support of over $500 million. The government

provided liquidity by buying bad assets at face value if the bank agreed to improvements in management, developed a workout plan, reduced risky activity such as securities trading, and obtained infusions of capital from the owners. An additional $500 million was committed to the program.

Finally, during 1996 and 1997, a stabilization program covering bad loans in the large banks was enacted to deal with solvency issues. As a consequence of the recapitalization programs, the government once again became the majority owner of the four large Czech banks. Neither the creation of a separate hospital bank for bad loans nor several rounds of cleaning up the banks' balance sheets had made the big four Czech banks strong financial institutions. In 1997, the government belatedly adopted a strategy of selling the banks by auction to foreign strategic investors. The first such sale was the purchase in 1998 of Investicni a Postovni Banka (IPB) by Nomura. Nomura took no active role in reforming the bank, choosing instead to tunnel value from the bank's investment funds. Large loan losses led to a run on deposits and IPB was taken over by the central bank. The central bank provided a guarantee against future loan losses and removed a further $2.5 billion of bad loans from IPB.

Extensive banking system problems persisted throughout the 1990s in the Czech Republic, well after Hungary and Poland had established mature banking systems. In 1999, 30.6 percent of all bank loans were nonperforming (Caprio and Klingebiel, 1999). The privatizations of the three large Czech banks were preceded by loan transfers to the hospital bank, which totaled more than 3 percent of GDP. Privatization revenues provided some partial offset and in one case, the government provided guarantees against future losses from inherited loans as part of the privatization deal.

Tang *et al.* (2000) calculates the present value of restructuring costs in 1998 as 4.8 percent of 1998 GDP for the central bank, mainly from the second consolidation program in 1997, and 20.6 percent of 1998 GDP for the government, mainly from the initial capital infusion in 1991 and the purchase of bad loans in the early 1990s. However, the hospital bank, which is the principal asset management company in the Czech Republic, has a poor record of collecting debts, has borrowed from the central bank, and has government guarantees. Any further losses incurred by the hospital bank could increase the costs of bank resolution in the Czech Republic, which is already far greater than the costs incurred in Hungary or Poland.

Bulgaria. At the start of transition there were a large number of state-owned banks in Bulgaria, both sectoral banks and regional commercial

banks. Following a voluntary merger of 22 of the former credit branches of the central bank to form United Bulgarian Bank (UBB), government-orchestrated restructuring began with the formation of the Bank Consolidation Company in 1993 (Bonin, 2004). However, two impediments to banking sector development persisted. First, enterprise reform lagged and support for SOEs shifted from the budget to quasi-fiscal subsidies through the banking system. Second, banks routinely granted forex credits to enterprises without holding forex deposits and currency mismatch proved to be a serious problem for the solvency of the banking system. In 1992, the government attempted to address the currency issue by providing banks with government bonds denominated in dollars (ZUNKs) in return for loans. However, responsibility for loan recovery remained with the banks.

The initial efforts at bank restructuring in Bulgaria were an expensive failure. In 1993 and 1994, the costs were 10.9 percent and 23.1 percent of GDP, respectively.[3] Two of the sectoral banks and UBB required injections of liquidity from the central bank in 1995 and most of the SOCBs were insolvent. About half of all loans in SOCBs were nonperforming but the political will and the legal framework to close down banks was lacking. Finally, in 1996, 19 banks accounting for almost one-third of banking assets were closed. In February 1997, a currency crisis erupted as the lev depreciated significantly. A currency board, established in July 1997 to deal with the macroeconomic crisis, prohibited central bank lending and provided the credible commitment to no further bank bailouts. From 1996 to 1997, bank restructuring costs were shared by the government, through additional loan for bond swaps, and the central bank, through losses on unsecured credits. Total costs amounted to 9.9 percent and 4.1 percent of GDP in 1996 and 1997, respectively.

Over the decade, the total cost of bank restructuring in Bulgaria was 41.6 percent of GDP, far larger than the cost for any other TE.[4] Bank restructuring failed in Bulgaria for two primary reasons. First, the incentive structure for banks was not changed because bond swaps for bad loans did not stem new lending to the same unreformed SOE clients. Second, the

[3]All the figures here are present values in 1998 as a percent of 1998 GDP, as calculated by Tang *et al.* (2000).

[4]Of course, a country must have a significant banking sector to incur large restructuring costs. If fiscal transfers financed by monetary expansion are used to support loss-making enterprises, as in Ukraine, explicit bank restructuring costs may not be incurred. However, the economy still suffers efficiency losses and costs from macroeconomic instability.

institutional framework for improving the banking system did not exist. Prudential regulations and supervision were not in place until 1997, several years later than in the other European TEs, and international accounting standards were not applied until 1998 (Tang *et al.*, 2000). Neither the necessary institutional structure nor a credible commitment to abstain from further bailouts existed before the establishment of the currency board.

Romania. The birthing process in Romania resulted in one large commercial bank carved from the portfolio of the central bank, which joined four specialty banks. The balance sheets of these state-owned banks were deteriorating from the start. Efforts at macroeconomic stabilization worsened the conditions of some of the banks. Exchange rate liberalization and the elimination of subsidized agricultural credits led to financial distress at the foreign trade bank, Bancorex, and at Banca Agricola due to accumulating bad debts from directed credits to the energy and agricultural sectors, respectively. The two banks raised interest rates in 1997 in order to attract deposits and stave off runs, which affected the ability of the central bank to conduct monetary policy. Late in 1997, the government bailed out the two banks with $1 billion in bonds, almost 3 percent of GDP that were then refinanced by the central bank. At the end of 1998, over 50 percent of all bank credit was rated in the loss category and even more in Bancorex. Clearly, the solvency of the entire Romanian banking system was at stake.

The anticipated restructuring of the large foreign trade bank, Bancorex, never took place although a new management team was put in place. The International Monetary Fund (IMF) estimates that subsequent mismanagement and delay in restructuring Bancorex doubled the cost to the public of resolving the crisis. In February 1999, the government established a hospital bank to take over the bad debts from Bancorex and Banca Agricola. Most of Bancorex's loan portfolio was transferred to the agency for workout; initially this amounted to about $1.7 billion or 5 percent of GDP. However, the bank's problems were insurmountable and Bancorex collapsed in April 1999 after a run by depositors even while efforts to restructure it were ongoing. Since further recapitalization would require a fiscal outlay in excess of 5 percent of GDP, the government decided to close Bancorex and merge the healthy part of its portfolio with the large state-owned commercial bank. In addition, about $2 billion more in bad loans from Bancorex and Banca Agricola were transferred to the hospital bank. To avoid a systemic crisis, the central bank provided liquidity. In addition, the government compensated

the commercial bank for deposit withdrawals and any balance sheet gap resulting from its absorbing Bancorex.

From the beginning of 1997 through the end of 2000, the assets of the Romanian banking sector shrunk by about 50 percent in real terms. Improved organization of bank supervision did not occur until late in 1999. Romania was both slow to achieve macroeconomic stabilization and slow to recognize bank insolvencies. Although privatizations to foreign investors have begun, the banking system remains fragile.

Russia. The two-tier banking system began in Russia (then Soviet Union) in 1987 with the separation of commercial bank functions from Gosbank[5] and the creation of sectoral banks by enterprises or former branch ministries. Sberbank, the state savings bank, held most household deposits, which were channeled directly through the state banks to enterprises. New entry into Russian banking was dramatic; a few hundred banks were created in 1988 and 1989 and the number of new banks increased by about 1,000 in 1990 and by another 1,000 shortly thereafter (Aslund, 1996). Most banks were small and poorly capitalized; some of them were merely house banks for enterprises, although some later emerged as the largest commercial banks in Russia. In addition, Russia's banking system remained extremely thin throughout the 1990s; the extent of financial intermediation was low even by comparison with other TEs.

Although the Russian banking system was immature, the financial crisis of 1998 exhibited many classical causes. First, asset stripping and excessive risk-taking by banks occurred in an environment with little supervision of banks, no uniform accounting standards, and a willingness of the central bank to provide liquidity to the banking system. Second, balance-sheet expansion involved both currency and maturity mismatches as the banks bought long-term, high-interest, ruble assets with short-term, and often low-interest dollar-denominated liabilities. Although there was little effort at risk management, the banks remained solvent under Russian accounting standards and prudential regulations. Nonperforming loans were reported to be only 19 percent of total loans in 1997, which was no higher than in the European TEs and less than in some of the Asian countries that experienced a banking crisis at the same time. However, because of the absence of

[5]With the exception of Sberbank, the former state-owned banks went through a metamorphosis during privatization as branches became independent entities and then regrouped into larger banks.

effective regulation and of a program for restructuring, much of the Russian banking system was in serious difficulty even prior to the government debt crisis of 1998.

The banking crisis only became apparent when the fiscal crisis caused the government to suspend payments on its debt, which resulted in the collapse of the ruble. Bank withdrawals led to an immediate shortage of liquidity. Small banks suffered due to their ties to the large banks and the withdrawal of central bank liquidity after the collapse of the ruble. The central bank responded by allowing banks to draw on required reserve deposits for payments and by offering stabilization credits to banks. To forestall a bank run, banks were encouraged to shift 50 percent of their ruble deposits and 10 percent of their foreign currency deposits to Sberbank, which was thought to enjoy full implicit deposit insurance because the central bank is its majority shareholder. As the transfer of deposits to Sberbank continued, the quality of its balance sheet deteriorated because it was required to adopt international accounting standards.

The full extent of the solvency problem in the banking system was realized in subsequent months, particularly as pressure from international financial institutions led to closer scrutiny of the banks. The Russian authorities agreed to conduct due diligence reviews using Western accounting standards for 18 of the largest banks accounting for about one-half of banking assets outside of state-controlled banks. Legal reforms involving bankruptcy and banking laws to facilitate restructuring and rehabilitation of banks were begun and a commitment was made to strengthen the supervisory capacity of the central bank. However, restrictions on foreign participation in banking remained in place. The number of banks operating in Russia decreased due to closures and consolidations. More importantly, total credit and the real money supply contracted sharply. The credit contraction did not have a larger effect on the economy because of the low level of financial intermediation at the time.

Progress at bank restructuring was slow because the authorities delayed taking actions under the new legislation, which only came into effect in mid-1999 and also encouraged delays. An agency for restructuring problem banks, ARCO, was established but the rules invited procrastination. A bank that fulfilled certain criteria as to size and the nature of their problems had to be referred to ARCO by the central bank. ARCO decides whether to manage or liquidate the problem bank (Chekurova, 2001). The rules are full of contradictions, for example ARCO takes on the rights of shareholders

at an annual meeting but it may only replace management for one month. Furthermore, although ARCO was responsible for the restructuring program, only the central bank could withdraw a banking license. ARCO had few resources available so it appeared that the government intended to liquidate rather than restructure the large banks. In addition, the interests of individual depositors were disregarded during liquidation as most of the money in the banks was removed shortly before the process began. Caprio and Klingebiel (2003) estimate that the cost of a full bailout of Russian banks was $15 billion or between 5 percent and 7 percent of GDP.

Observers of Russian banking noted immediately the problems with the Russian approach to bank restructuring. First, the limited resources available meant that potentially efficient banks were liquidated, probably by design (Thiesen, 2000). Second, the potential contribution of foreign financial institutions was ignored (Buch and Heinrich, 1999). Third, ARCO itself had little authority to change bank operations and incentives once a restructuring took place.

Although the post-1998 changes were a sharp departure from the wildcat approach to banking that had prevailed, no comprehensive plan for restructuring, no clear and prompt application of prudential rules, and no introduction of private (foreign) capital with the proper incentives were forthcoming (World Bank, 2002). Even if Western prudential standards had been applied to Russian banks prior to 1998, the fiscal crisis would have precipitated a banking crisis because the banks were large holders of government debt. Nonetheless, the government's response was inadequate and its mismanagement added to the public perception of the fragility of Russian banks.

The Russian experience provides the best illustration of the importance of having an adequate institutional framework in place. In Russia, the necessary legislation did not exist nor was the commitment to utilize the existing legal structure or the ability to apply existing law forthcoming. In addition, the central bank did not act quickly to begin bank restructuring, even in situations in which it had the authority to do so. Although there are ample reasons to criticize the highly politicized and inconsistent approach to bank restructuring taken by the Russian authorities after the 1998 crisis, the banking system did rebound remarkably in the post-crisis years.

China. China has only recently begun to deal with the problem of nonperforming loans in its four large SOCBs, which account for more than two-thirds of both domestic credits to the nonfinancial sector and household deposits. Throughout the 1980s and in the first half of the 1990s, bank

loans to GDP increased from 50 percent to 120 percent. The Commercial Banking Law, promulgated in 1995, ostensibly made banks responsible for their profits and losses but it also contained language that required banks to conduct lending in accordance with the government's industrial policy. If the latter directive is in conflict with the former, SOCBs cannot be held fully responsible for lending decisions. By 1996, loss-making SOEs were predominant so that the consolidated financial position of the state sector was negative. During this period, the government explicitly sought financial support from the SOCBs in the form of policy loans that accounted for more than one-third of total bank loans in the 1990s (Bonin and Huang, 2001).

The Chinese government began to address the bad loan problem in 1994 by creating three banks to take over policy lending. By 2000, the policy banks accounted for over 12 percent of bank loans in China. In 1999, the Chinese government established four asset management companies (AMCs), one associated with each of the four large SOCBs, to deal with nonperforming loans amounting initially to about 19 percent of the total loans on the books of SOCBs. By attaching each AMC to a large SOCB, the Chinese government created an incentive problem. Even though a sunset provision has been imposed on the AMCs, a SOCB is likely to view its AMC as a bin into which bad loans can be discarded continuously. Simultaneously, the government has been pursuing a program of restructuring and downsizing SOEs. Hence, the clients of the SOCBs are becoming stronger financially. At the same time, the private sector is growing rapidly, providing banks with healthy potential clients. Current Western estimates indicate that the totality of bad loans in banks and AMCs constitute about 40 percent of GDP. To what extent China can grow out of this bad loan problem and to what extent the large SOCBs will require considerable recapitalization is an ongoing concern for the government.

In many TEs, privatization of SOCBs to majority foreign owners established an arms-length regulatory relationship between the government and the banks and provided credibility to the no-bailout commitment. The four large Chinese banks will not be privatized in this way in the foreseeable future. In addition, Chinese banks are protected from outside competition because the capital account remains closed and operations of foreign financial firms are limited, despite China's recent entry into the World Trade Organization. Hence, considerable institution building and gradual divesting of government stakes in the SOCBs by sales in the stock market must be combined to impose the necessary financial discipline on China's four

large banks. The final cost of the eventual resolution of bank insolvencies in China is likely to be toward the upper range for the TEs and may be as large as 40 percent of GDP.

3. Conclusion

The experiences with bank resolution in the transition countries are related to peculiar aspects of the transition and to idiosyncrasies of a particular country's banking sector; nonetheless several overall lessons can be drawn. First, solvency will continue to plague the banking system so long as the incentive structure that encourages banks to support weak SOEs is not changed. By its nature, banking is a relationship business and bad relationships are hard to break; removing inherited bad loans from banks is less important than freeing banks from inherited bad clients. Czech voucher privatization strengthened the ties between weak enterprises and their banks; in contrast, although the Hungarian program involved multiple recapitalizations of banks, it addressed the issue of bad relationships. As a result, the Czech Republic took over a decade to deal with soft lending whereas Hungary moved relatively quickly to change the incentive structure in banks by selling banks to foreign owners. Thus, the final cost of bank resolution in the Czech Republic was more than double that in Hungary.

Second, the method chosen to deal with bad loan problems can reinforce the bad relationships that are responsible for insolvency problems. Bank involvement with workouts is likely to perpetuate the relationship to the bad customer, as the Polish experience indicates. However, establishing a hospital bank or an asset management company to workout the bad loans creates a moral hazard dilemma because of the expectation of further government-financed purchases of bad loans. The Czech Republic fell victim to this trap and China appears to be doing the same because the asset management companies are associated with a particular bank. Therefore, neither a centralized hospital bank solution nor a decentralized program leaving responsibility for bad loan workout with the banks is a panacea.

Third, repeated recapitalizations strengthened direct ties between the government and banks making a credible commitment to arms-length regulation difficult. Hungary used the sale of the banks to foreign investors to remove the government from bank–client relationships. The establishment of a currency board in Bulgaria provided a credible legal constraint on bailout activity that was strengthened by subsequent rapid sales of the banks

to foreigners. Continued state ownership of banks invites ongoing government intervention and impairs the ability of regulators to act independently. The conflict of interest faced by the Russian central bank as both regulator and owner of Sberbank and government ownership of the four large Chinese banks are prime examples. Continued state ownership of the savings banks in Romania and Poland, an agricultural bank in Poland, and the largest commercial bank in Romania permitted these governments to pursue industrial policy through banks to the detriment of effective regulation.

Fourth, institutions matter but formal legislation is less important than the ability to implement vigorously equitable and transparent supervision. The absence of prudential institutions or the lack of skills among regulators impeded crisis resolution in Bulgaria, Romania, and Russia. Finally, resolving bank crisis in transition countries is only weakly related to macroeconomic performance. In the Czech Republic, Romania, Russia, and Poland, economic growth resumed before bank insolvencies were fully resolved. In addition, China has an exemplary record of high growth and low inflation. On the other hand, in recent years, Hungary has grown faster than the Czech Republic and Poland while Bulgaria has grown slightly faster than Romania. Hence, experiences in the transition countries lend weak support to the thesis that the failure to address financial fragility is a deterrent to sustainable economic growth.

References

Ábel, István, 2002, "Real dangers in banking crises: Examples of failed Hungarian banks," in *Banking and Financial Stability in Central Europe*, D. Green and K. Petrick (eds.), Northampton, MA: Edward Elgar Publishing.

Aslund, Anders, 1996, "Russian banking: Crisis or rent-seeking?" *Post-Soviet Geography and Economics*, Vol. 37, No. 8, pp. 495–502.

Bonin, John, 2004, "Banking in the Balkans: The structure of banking sectors in Southeast Europe," *Economic Systems,* Vol. 28, pp.141–153.

Bonin, John, and Yiping Huang, 2001, "Dealing with the bad loans of the Chinese banks," *Journal of Asian Economics,* Vol. 12, pp. 197–214.

Bonin, John, and Bozena Leven, 2001, "Can state-owned banks promote enterprise restructuring?: Evidence from one Polish bank's experience," *Post-Communist Economies*, Vol. 13, No. 4, pp. 431–444.

Bonin, John, and Paul Wachtel, 2003, "Financial sector development in transition economies: Lessons from the first decade," *Financial Markets, Institutions, and Instruments,* Vol. 12, pp. 1–66.

Buch, Claudia, and Ralph Heinrich, 1999, "Handling banking crises: The case of Russia," *Economic Systems,* Vol. 23, December, pp. 349–380.

Caprio, Gerard, and Daniela Klingebiel, 1999, "Episodes of Systemic and borderline financial crisis," World Bank, October, and dataset, January 2003, available at http://econ.worldbank.org/view.php?type = 18&id = 23456

Chekurova, Marina, 2001, "Restructuring the Russian banking system," in *Financial Transition in Europe and Central Asia,* Lajos Bokros, Alexander Fleming, and Cari Votava (eds.), Washington, DC: World Bank.

Enoch, Charles, Anne-Marie Gulde, and Daniel Hardy, 2002, "Banking crises and bank resolution: Experiences in some transition economies," International Monetary Fund, working paper, No. 02/56.

Matousek, Roman, and Anita Taci, 2002, "Banking regulation and supervision in associated countries: A case study of the Czech Republic," in *Banking and Financial Stability in Central Europe,* D. Green and K. Petrick (eds.), Northampton, MA: Edward Elgar Publishing.

Tang, Helena, Edda Zoli, and Irina Klytchnikova, 2000, "Banking crises in transition countries: Fiscal Costs and related issues," World Bank, working paper, No. 2484, November.

Thiesen, Ulrich, 2000, "Banking crises in transition countries, theory and empirical evidence: The case of Russia," DIW Discussion Paper No. 193, January.

World Bank, 2002, *Building Trust: Developing the Russian Financial Sector*, Washington, DC.

Zoli, Edda, 2001, "Cost and effectiveness of banking sector restructuring in transition economies," International Monetary Fund, working paper, No. 01/157, October.

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The Resolution of Systemic Banking System Crises: The Way Forward

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1. Introduction

In an earlier presentation, we have discussed the difficulties in managing systemic crises.[1] Financial difficulties become intertwined with political and social problems. Delays generate uncertainty about the state of the financial system, rumors, and growing panic. The social and political deterioration, in turn, affects economic decision-making. Crisis management under these conditions becomes both difficult and complex. Deciding on policy options is often made more difficult by an unclear picture of the true financial conditions of banks and by limitations in the legal and institutional framework. Political instability can add an additional layer of confusion and can limit the range of resolution options.

Given the chaotic nature of banking crises and the numerous sources of missteps and implementation problems, what is the best way forward? It is tempting to say that each crisis should be approached as a new case, avoiding a "cookie cutter approach" to resolution and seeking to identify the peculiarities of each country's legal, institutional and cultural characteristics. However, broad guiding lessons can be identified for crisis prevention and crisis resolution.

The first best approach is to prevent or to minimize banking crises. The better we are at preventing crisis, the less necessary will resolution become. Experience also points to best practices or general principles for crisis resolution.

[1] See Hoelscher and Ingves (2004).

2. Prevention

Contrary to a common saying, "the best offense is a good defense". Efforts to prevent crises pay off handsomely in lowering the incidence of crises and lowering the costs when crises emerge. The supervisory and regulatory framework must be sufficiently robust to ensure rapid identification of banking weaknesses and implementation of corrective actions.

Prevention of systemic crises requires a broad-based effort, aimed at establishing appropriate macroeconomic and microeconomic policies. Macroeconomic policies that aim at stable price levels and strong economic growth will support a strong banking system. Microeconomic policies should target a variety of internal factors to strengthen financial intermediation, including an appropriate operating environment, and internal governance of financial systems.[2] These factors should be supported by strong supervision and bank resolution framework.

Supervisory practices are an essential component of the framework for preventing banking crises. In reviewing international experiences of supervisory actions, the following framework has proven important for early warning and prevention of crises:

- *Bank resolution framework.* The authorities need sufficiently clear powers to implement their desired strategy.
- *An independent bank supervisor with discretionary powers to act at an early stage.* In a number of jurisdictions, as a result of legal limitations or political interference, bank supervisors have no independence to impose remedial actions to weak banks at an early stage. Furthermore, sometimes they must follow very rigid steps before intervening a bank, including a mandatory requirement for requesting weak banks to submit rehabilitation plans, which in some case may simply delay bank resolution actions.
- *Supervision on a consolidated basis.* In some cases, financial groups have used unregulated affiliates (including offshore banks) to evade supervision and hide their true financial condition.
- *Careful monitoring of loans to related parties.* Due to political interference or weak supervisory capacity to enforce credit limit to insiders, a number of banks have failed as a result of large exposures to insolvent related parties.

[2]Lindgren, Garcia, and Saal (1996).

- *Strong legal protection for bank supervisors.* The risk of legal retaliation from former bank shareholders also postpones the adoption of early bank resolution measures by banking supervisors.
- *An additional factor in preventing crises is adequate planning.* Good supervision will identify problems when they are still manageable. The earlier difficulties are detected, the more options are available. However, the authorities must move quickly to address small problems before they become big problems. Rapid and efficient action can limit subsequent costs and economic disruption. An equally important part of crisis prevention is planning for crises. Supervision cannot prevent banking failures. The authorities should be prepared, with clear options for addressing emerging and worsening crisis cases.
- *Proper rules and practice runs during stable times pays.* Countries find it useful to have considered the appropriate range of options concerning the management of systemic crises before the crises emerge. While not able to predict the exact course of a crisis, identification of the key decisions that must be made, the sources of information and identifying who is responsible can speed development of an appropriate policy response.

3. Legal Structure

Limitations in the legal system have been a key reason for suboptimal results in bank restructuring. Even when the banking strategy is comprehensive and fully agreed, weaknesses in the legal system have hampered bank resolution efforts. Such weaknesses have resulted in (1) incentives to postpone adequate treatment of failing banks; (2) higher costs for bank resolution; and (3) weaknesses in the banking system.

The following legal issues are common in countries facing systemic crises:

- *Inability to write down shareholder capital.* Bank supervisors should have legal powers to write off shareholders' equity to facilitate bank resolution.
- *Limited legal authority to facilitate bank sales.* Many supervisory authorities face restrictions on the sales or transfer of bank assets of failed banks. In some jurisdictions, shareholders continue to have

legal rights even after bank failure, thus preventing the authorities from taking cost-reducing resolution actions.

- *Weak mandate of supervisory, deposit insurance, or resolution agencies to restructure banks.* Bank resolution entities should have a clear organizational framework, be adequately capitalized, and have a board composed by reputable professionals.
- *Ineffective procedures to implement purchase and assumption transactions.* In practice, banking legislations should give supervisors the necessary legal authority to transfer to a third institution a portion of "privileged" liabilities from a failed institution along with its good assets. This is meant to contain the risk of legal challenges from the remaining creditors.
- *Insufficient knowledge of judges on banking matters.* In some jurisdictions, judges have limited knowledge of banking matters, which has impeded the resolution of banks or the legal prosecution of the former managers and directors of failed banks.
- *Lack of legal protection to staff and board members of agencies responsible for bank restructuring*. Lack of legal protection from litigation for bona fide actions taken in the exercise of their duties impairs banking resolution efforts.

A strong preventive framework would address these weaknesses and strengthen the overall legal framework for crisis management and resolution.

4. Resolution

Supervision alone cannot resolve all crises once they have begun. Once a crisis breaks out, what are the policy principles that will limit the extent of the crisis and reduce the eventual costs?

- *Strong political support.* Crisis management and resolution implies a redistribution of wealth within the society. Political leadership is essential if this process is to be seen as fair. Moreover, public disagreements or expressions of doubt among prominent government participants can undermine confidence in the containment and restructuring process.

- *Prompt recognition and resolution of banking distress lowers the cost of resolution.* The sooner the problems come to light, the greater will be the options available to the authorities to tackle them. The faster the authorities get control of failed institutions, the lower will be the resolution costs and the faster the reestablishment of financial stability.
- *Banks should be allowed to fail.* Bank failure can be a positive force for banking system stability. The presumption should not be that all banks must be protected. In any decision to use public money to support a bank, the benefits of keeping a bank open must be judged explicitly against the costs to the public sector and to the banking system of maintaining a weak bank.
- *Bank resolution should follow a principle of equity and fair treatment.* Restructuring policies should be applied to all banks on a uniform basis. Existing shareholders should be the first to either inject additional capital or lose their investment.
- *Bank restructuring must be comprehensive or financial difficulties will persist and, with time, grow.* The resolution options chosen should not only resolve current banking problems, but also address the medium-term structural problems found in the legal and institutional framework. Any nationalized bank should be run by a third party with an established reputation and experience in bank management, or by new managers and board members that are fit and proper and isolated from political interference.
- *Economic authorities must maintain close coordination.* While a clear legal and operational division of labor is necessary to facilitate bank resolution, it is critical that a fluid mechanism to coordinate and communicate actions is put in place. Furthermore, strong leadership is vital to shepherd the restructuring process and avoid influence from third parties.
- *Restructuring of the banking system will be easier if depositors and other creditors are protected.* When faced with a systemic crisis, experience suggests that, where feasible and when the costs can be covered by fiscal resources, a blanket guarantee can ease creditor fears and facilitate the closure of weak banks.
- *Legal action must be taken against bank officials responsible for banking failure.* The prosecution of managers and directors responsible for wrongdoing in banks is the best recipe to impose market

discipline. In cases when legal action has been taken, remaining actors in the market understand that the authorities are determined to have a sound and safe banking system. In the absence of such resolve, similar accidents will be repeated in the future.

- *Asset resolution is an essential complement to bank restructuring.* An early and active involvement in impaired asset management prevents credit discipline from eroding. A variety of institutional arrangements and techniques are available. They should be chosen in order to achieve the desired trade-off between rapid resolution and recovering the value of the impaired assets.
- *Exit from guarantees.* Any guarantees introduced as part of the restructuring strategy will have to be phased out as soon as possible without jeopardizing financial stability. Fears of renewed financial deterioration may lead to tendency to postpone such a phase out. However, the longer guarantees are in place, the greater are the moral hazard implications. Successful guarantees have been phased out in progressive stages where each stage is seen by markets as a non-event.

5. The Role of the Fund

During the period 1980–2003, virtually every country in the world has undergone some form of financial crisis.[3] However, only a few countries have suffered multiple crises. Fortunately, at the country level, banking crises are low frequency events. As a result, the local knowledge of managing banking crises is often lost, as staff involved with the intensive period of crisis containment and post crisis reconstruction retire or move to other responsibilities.

The Monetary and Financial Systems Department in the International Monetary Fund is charged, in part, with assisting countries facing such crises. Following the Asian crisis, the fund recognized the importance of assembling teams of professionals with experience in managing systemic banking crises. In response, the department established a dedicated division, staffed with experts who have helped resolve some of the most devastating banking crises. Experts in the division have been involved in every systemic crisis since the mid-1990s and have assisted countries address a

[3]Lindgren *et al.* (1996), and Hoelscher (2004).

myriad of banking difficulties. This staff provides a source of knowledge and experience concerning best practices and experiences in other countries and stands ready to commit members' countries within days of being called. Constant practice builds a knowledge base that is hard to maintain at the national level.

An important part of our work is the drawing of lessons and the identification of preferred practices. The department has published a series of papers drawing broad lessons from the crises since the mid-1990s. In addition, we are finalizing a series of detailed ex post analyses that review the development of specific crises and a step-by-step review of the advice provided, the success in implementation of that advice, and the results. We hope that such work will strengthen our understanding of the forces unleashed in banking crises and the appropriateness of different combinations of containment and resolution tools.

6. Conclusions

Banking crises are chaotic events. Uncertainties and fears make identification of the problems and design of the solutions difficult. Moreover, economic difficulties become intertwined with political and social problems. Uncertainties about the conditions of the economy bring out political rivalries and may lead to social chaos. The social and political deterioration, in turn, affects economic decision-making.

Crisis management under these conditions is complex. As H. L. Mencken stated, as quoted in our companion paper in this volume, you can always find answers to complex problems that are "simple, neat, and wrong". The solutions tried during the last two decades have been innovative. Their effectiveness, however, has been mixed. To blame the instruments is too simple. A complex mix of economic, political and social factors all affect how and when these instruments can be best used.

Crisis containment must be a priority in the initial stages of crisis management. Emergency liquidity support and blanket guarantees have proven to be powerful tools to achieve this containment. However, they must be used appropriately and there are conditions under which the tools are not credible or when they increase sharply the cost of the crisis. The authorities must be in a position to carefully evaluate the appropriateness and risks of these tools.

Bank restructuring is a bank-by-bank activity. It involves bank diagnosis and the design of appropriate bank-specific resolution strategies. There is

no presumption that all banks must survive the resolution phase. Successful restructuring requires sound banks and strong shareholders, able to ensure the profitable management of their bank over the medium term.

The bank restructuring phase is fraught with difficulties and potential setbacks. Experience suggests that the biggest threats to successful restructuring of the banking system include failure to complete the restructuring, excessive forbearance, failure to ensure loss sharing of shareholders, inconsistent treatment of banks, and lack of political support for the process.

Given the difficulties and uncertainties of crisis management, prevention should be of significant concern to the authorities. A number of measures can strengthen the supervisory framework and the authorities' ability to prevent crises. Among these measures are creation of an independent banking supervisor with discretionary powers to act at an early stage, consolidated supervision of financial sector groups, careful monitoring of loans to related parties, and strong legal protection for bank supervisors.

Once prevention fails, bank resolution should be as efficient as possible. Bank resolution strategies should be comprehensive and complete. Moreover, the faster the recognition and resolution of banking distress, the more efficient and less costly will be the resolution. For that reason, strong political support is necessary to ensure the full implementation of the strategies designed. Particular efforts should be made to ensuring that the legal system is adequate for the strategy adopted.

References

Baer, Herbert, and Daniela Klingebiel, 1995, "Systemic risk when depositors bear losses: Five case studies," in *Research in Financial Services: Private and Public Policy*, Vol. 7, George Kaufman (ed.), Stanford, CT: JAI Press, pp. 195–302.

Fung, Ben, Jason George, Stefan Hohl, and Guonan Ma, 2004, "Public asset management companies in East Asia: A comparative study," Bank of International Settlements, occasional paper, No. 3, February.

Hoelscher, David, 2004, "Issues in bank resolution," International Monetary Fund Regional Conference on Bank Resolution, Honduras.

Hoelscher, David, and Marc Quintyn, 2004, *Managing Systemic Banking Crises,* Washington: International Monetary Fund.

Hoggarth, Glenn, and Jack Reidhill, 2003, "Resolution of banking crises: A review," *Financial Stability Review*, December, pp. 109–123.

Ingves, Stefan, Steven Seelig and Dong He, 2004, "Issues in the establishment of asset management companies," International Monetary Fund, policy discussion paper, No. 04/03.

Kane, Edward J., and Daniela Klingebiel, 2004, "Alternatives to blanket guarantees for containing a systemic crisis," *Journal of Financial Stability*, forthcoming.

Klingebiel, Daniela, 2000, "The use of asset management companies in the resolution of banking crises: cross-country experience," World Bank, policy research paper, No. 2284.

Lindgren, Carl-Johan, Gillian Garcia, and Matthew Saal, 1996, *Bank Soundness and Macroeconomic Policy,* Washington: International Monetary Fund.

Lindgren, Carl-Johan, Tomas Baliño, Charles Enoch, Anne-Marie Gulde, Marc Quintyn, and Leslie Teo, 1999, *Financial Sector Crisis and Restructuring: Lessons from Asia*, Washington: International Monetary Fund.

Sheng, Andrew, 2003, "Reflections on financial sector restructuring," World Bank/IMF/SEACEN regional seminar.

Woo, David, 2000, "Two approaches to resolving nonperforming assets during financial crises," International Monetary Fund, working paper, No. 00/33.

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Mistakes of Bank Crisis Response

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Most countries have experienced a major banking crisis during the last three decades, and no regions have gone unscathed. Emerging markets, transition economies, and developed countries have been hit. Currently, however, there are few crises now "hot" so we have the luxury to reflect on what has happened during the last three decades to draw lessons for policy reform: What, if anything, can be done to reduce the likelihood of a banking and financial crisis? Once the financial system does experience trouble, what policy responses appear more or less sensible and effective?

Generally, responses entail some reallocation of wealth to revive failing or failed banks (and implicitly or explicitly the borrowing firms) to help restart productive private investment. Such responses, however, entail costs. First is the direct burden on taxpayers when there is a government-led bailout, which can slow economic recovery. Second is the problem of misallocation of capital that may prop up "zombie" firms and leave both physical capital and workers locked into low productivity activities, again slowing economic recovery. Third is the traditional moral hazard problem of firms or banks being too big or too connected to fail, making the system more fragile in the future. Achieving the right balance to reignite economic growth has proved to be quite challenging.

The three papers on this panel address key questions in this area. First, Kane puts valuable emphasis on the costs that are associated with delaying resolutions to crises. He describes the political and institutional forces that slow and distort responses and how forbearance tends to increase significantly both the size of the problem and ultimately taxpayer burdens. In particular, Kane highlights the short horizon (that is, high discount rate) of decision-makers in crisis responses (see also Kroszner, 1998, 2000). Kane

proposes that practice "fire drills" for regulators and supervisors may help them to resolve troubles more quickly. While valuable, such exercises are not likely to make much headway against many of the larger political and institutional forces favoring delay.

Bonin and Wachtel provide a rich description of alternative approaches taken by seven transition economies to banking crises (Poland, Hungary, Czech Republic, Bulgaria, Romania, Russia, and China). The authors quite rightly underscore that the entities called banks in these countries have not operated as banks in the textbook sense, but more closely resemble what I call "off-balance-sheet fiscal arms of the state" (Kroszner, 1998), which have "responsibilities" for supporting targeted sectors and constituencies. Bonin and Wachtel's case studies illustrate how foreign ownership of banks tends to change the political–economy dynamic since foreign banks tend to have less of close relationship with the state and act more like banks in the textbook sense. The authors emphasize that improved credibility of the national governments can help to avoid moral hazard problems and problems of connected lending, but more should be done to explain concretely how a government can achieve such enhanced credibility.

Finally, Ingves and Hoelscher outline a three-step program for dealing with crises. First is containment, including emergency liquidity provision. Second is bank restructuring, with some loss sharing between the public and private sectors. Third is setting up institutions or legal frameworks that allow for corporate debt restructuring and efficient management and disposal of failed loans and enterprises. The authors emphasize that prevention is the most important policy issue, but it is unclear to me how such a sensible three-step plan makes crises less likely. Ingves and Hoelscher are acutely aware of the difficulty of implementing the three-step approach given the incentives and constraints of a country's political institutions. A key question that remains unresolved is whether the International Monetary Fund or any third party can be a credible enforcer following a crisis. Without such credibility, the three-step plan will be unlikely to be able to mitigate moral hazard to prevent crises or to avoid costly delays.

The broad conclusion for policy that emerges from the experiences of the last three decades is "the need for speed". Delay in recognizing and responding to troubles at banking and financial institutions tends to increase substantially the extent of the crisis and the costs, in terms of both lost output and taxpayer burden in the ultimate response. The political and institutional incentives that generate forbearance are a first order problem

around the globe and should be the primary focus of policy reform (see Kroszner and Strahan, 1996, 2001). We are still at an early stage in developing an approach that will work in a wide variety of countries, but the experiences described in these papers provide valuable lessons for, at the very least, what not to do.

References

Kroszner, Randall S., 2000, "The economics and politics of financial modernization," *Economic Policy Review*, Federal Reserve Bank of New York, October, pp. 25–37.

———, 1998, "The political economy of banking and financial regulatory reform in emerging markets," *Research in Financial Services*, Vol. 10, pp. 33–51.

Kroszner, Randall S., and Philip E. Strahan, 2001, "Obstacles to optimal policy: The interplay of politics and economics in shaping bank supervision and regulation reforms," in *Prudential Supervision: What Works and What Doesn't*, Frederic S. Mishkin (ed.), Chicago: University of Chicago Press and National Bureau of Economic Research, pp. 233–266.

———, 1996, "Regulatory incentives and the thrift crisis: Dividends, mutual-to-stock conversions, and financial distress in the thrift industry," *Journal of Finance*, September, pp. 1285–1320.

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Key Policy Challenges in Financial Resolution: Cross-Border Issues

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Breaking Up is Hard to Do: An Essay on Cross-Border Challenges in Resolving Financial Groups

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Lawyers are notorious for working backward. They begin at the end, anticipating the worst-case results. They then work back to the beginning: to manage the risk anticipated at the end. If nothing bad happens, their work is not noticed. But if the contingencies occur, the planning was vital.

We write this paper in this fine old tradition. It works backward, from the insolvency of a cross-border financial group. But it does not stop at the usual stage: suggestions for better insolvency law. It is hard enough to suggest reform of cross-border insolvency law, and almost impossible to implement these suggestions. Instead, this paper goes even further back: to principles of bank supervision. We believe that reformed supervisory practice might ease the problems of cross-border financial group insolvency. And cross-border supervisory reform is practical. The Basel process works, if the consensus develops.

This paper begins with the basics. After a few preliminaries, it proceeds to the bank insolvency of a single entity. This has a few complexities of its own. At least in the United States, bank insolvency law greatly differs from the insolvency law of ordinary business firms (Baxter *et al*., 2004). These distinctions are only exaggerated for cross-border bank entities. The paper then further climbs the complexity ladder, and discusses group insolvency. A financial group can consist of many entities, sometimes hundreds or even thousands. These groups are often closely intertwined. The large number and close relationships of group entities adds to the complexity of the group's insolvency. This complexity is costly — and possibly unnecessary.

A simpler organization might be a safer one: one with fewer entities and fewer linkages among its entities.

If a simpler organization is a safer one, is there any reason for complexity? We do not answer this question, because we do not know the answer. We do not know why financial groups favor complex structures, and look to the usual suspects, like tax, corporate law, and secrecy. But whether these structures have any social benefits that offsets their cost in insolvency is beyond this analysis. This paper concludes with a call toward research in this direction.

1. Basic Definitions

This paper discusses "cross-border challenges in resolving financial groups". This title contains three ambiguous terms: "cross-border", "resolving", and "financial groups". We will discuss resolving (or related terms such as "resolution" or "insolvency") below, once we have developed some more basic concepts. Here, we concentrate on financial group and cross-border.

Major financial firms typically do not operate as a single juridical person. Instead, they are organized as groups, generally with a single well-defined parent holding company and any number of wholly owned subsidiaries. The holding company may itself be an operating company or perhaps a shell holding company. One of the affiliates will be a bank; other affiliates will consist of other financial firms, such as securities firms, insurers, brokers, or the like. This pattern is not invariant. Sometimes, there is no single parent, for example, a joint venture or a group of companies owned by an individual or a family. Often, the subsidiaries are not wholly owned by the parent, for example, ownership by other subsidiaries, joint ventures, or subsidiary shares owned by individual managers or directors. And sometimes, a few of the affiliates are not financial at all. However, this paper shall assume the simplest model: a group of financial subsidiaries that are wholly owned by a parent company.

These entities within the group are invariably connected through shareholdings, but typically connected in other ways. They frequently do business under a similar name. Cross-affiliate credit and liquidity facilities are common. Frequently, affiliates work closely together, sharing customers, operations, or even employees. There is, to use an industry term, much cross selling. The components of a healthy group are often blurred together. The individual entities — which bear the formal legal rights of the group's

counterparties — shift into focus only when a group becomes troubled. The shift from group to entity focus can be jarring when it occurs, and is not always precise.

Major financial firms almost invariably operate in multiple jurisdictions. (They would not be "major" if they did not!) This means that they are subject to multiple legal regimes. Usually, a jurisdiction may assert its direct authority against an entity within the group: either on the basis of nationality (that is, jurisdiction of incorporation) or territoriality (that is, the entity does business within the territory). Since a parent has the power to direct the affairs of its subsidiaries, authority over the parent connotes some measure of authority over all the subsidiaries. These simple rules can generate a tremendously complex web of cross-border regulation. To mitigate complexity, most groups often limit the activities of most of their entities to their jurisdiction of incorporation. However, this is not practical for banks, which typically conduct foreign business in branches, rather than separate affiliates. This introduces extra complexity for banks: a point discussed below.

Having foreshadowed some of the complexities of financial groups, we now turn to the basics.

2. Financial Entity Insolvency Law: A Primer

We begin with the insolvency law of single entities: notably banks but including other financial firms. As with ordinary business firms, financial firms might either be liquidated or reorganized. These terms are somewhat interchangeable, and would benefit from a precise definition. Definitions vary, but for ease of analysis, we will select a definition that is easy to apply.

A *liquidation* reduces the insolvent entity's assets to cash and distributes the cash among the claimants according to an insolvency priority scheme. A liquidation is not necessarily piecemeal; it can involve an all-asset sale to a single buyer. However, in a liquidation, the proceeds of the sale are distributed in cash, as a pro rata distribution to priority classes, with the highest priority satisfied first. *Reorganizations*, in contrast, do not distribute cash. Instead, they transform the entity's liability structure. Some of the liabilities might disappear (depending on their priority); others might be transformed to more junior or longer-term liabilities.

Liquidations are more transparent, because the liquidation proceeds are derived from asset sales, and all distributions are in cash, pursuant to a formal

system of priorities. Reorganization, although less transparent, will often preserve more of the going-concern value of the firm. This is especially true in financial firms, even if the assets of a financial firm could be sold as a block. In financial firms, the liabilities, as well as the assets, have a going-concern value, which would be dissipated by a liquidation.

We begin with liquidations. The liquidation of a bank resembles the liquidation of most other firms, with a few significant exceptions. Most of these exceptions also apply to securities and insurance liquidations.

First, in all jurisdictions, bank supervisors have the power to initiate insolvencies, or at least petition for a proceeding. The United States is a particularly exaggerated example of this trend. Only the bank supervisor may initiate an insolvency proceeding against a bank, and the decision to initiate a proceeding will receive only the most cursory review from the courts. United States securities firms follow the worldwide rule: the supervisor's initiation powers supplement those of ordinary insolvency law.

Second, the contractual rights of a financial firm's counterparties are only weakly impaired by a liquidation proceeding. The general rule is that only direct debt collection efforts are subject to a stay. Collateral can often be freely liquidated, especially if it is "financial" collateral. Most financial contracts are unaffected by insolvency, including their close-out and netting provisions. Often, the avoidance powers of the receiver of an insolvent financial firm are limited. For example, there is often no concept of a preferential transfer in bank insolvency law, so transfers may only be avoided for fraud.

Third, at least in the United States, the liquidator (usually it is the Federal Deposit Insurance Corporation (FDIC) in its receivership capacity) is in control of a financial insolvency proceeding. There is no concept of creditor governance, and the receiver deals with creditors only in bilateral claims proceedings. If the liquidator is the FDIC, there is no need for court control of the proceedings. Any liquidator misbehavior can be controlled by an award of damages from the deposit insurance fund, rather than by the need for court approval.

Fourth, and finally, the cross-border liquidation of a bank can be very different than the cross-border liquidation of a general business entity. In the United States, a local branch of a foreign bank is liquidated separately, in a local proceeding. Assets that are attributable to the branch under local law satisfy liabilities of the branch. Only the net proceeds, if positive, are sent back to the foreign head office. This "ring-fencing" (or territorial) procedure is atypical in most other industrial countries, which

give head-office liquidators access to local branch assets, with the expectation that local liabilities will be treated fairly in the head-office jurisdiction.

Most of these differences between financial and general liquidations exist because financial firms are supervised, and because financial firms pose systemic liquidity risks (Baxter *et al.*, 2004). Almost all jurisdictions acknowledge the special role of the supervisor, but few go as far as the United States. The only universal supervisory role seems to be in initiating insolvency (Hüpkes, 2000, pp. 54–80).

Financial firm liquidations might appear strange to general insolvency lawyers. But they are at least recognizable as liquidations. Financial firm reorganizations look nothing like general firm reorganizations. They violate the most basic principles of ordinary firm reorganization, as typified the Draft Legislative Guide on Insolvency Law project of the United Nations Commission on International Trade Law (UNCITRAL). With financial reorganizations, there is often no stay of any kind, not even the weak form characteristic of liquidations. (When there is a stay, it usually affects very few creditors.) Creditors do not negotiate with anybody. Financial reorganizations are not prolonged (outside the insurance sector). Indeed, most of them are usually over with before they have started. And these peculiarities go well beyond the United States. They characterize a bank rescue operation almost anywhere.

We will talk about FDIC reorganizations, because we are most familiar with them. They typically resemble a prepackaged bankruptcy, without the inter-creditor negotiations. The FDIC negotiates with third parties for a sale of the bank, including most assets and liabilities. The transferred liability holders become claimants on the new purchaser, on the same terms as they enjoyed against the seller. A liability transfer implies that a receiver must transfer enough assets to make the sale attractive to a buyer. This is straightforward if the insolvent bank has a positive net value (including goodwill). If the insolvent bank does not have a positive net value, the FDIC must either pay the purchaser some cash, or retain some liabilities. The FDIC will frequently retain some assets as well, usually the bad ones. The holders of these retained liabilities then receive the proceeds of a conventional liquidation. The FDIC is liable if the liquidation proceeds are less than those that would have come from a liquidation of the entire entity.

Sometimes, the FDIC cannot solicit bids in advance. In such cases, it may hive off and liquidate some assets and liabilities, and run the remaining organization as a "bridge bank", until the bridge bank can be sold. More rarely, it may inject capital into the insolvent bank, and run the entire entity

on a standalone basis until it can be sold. Such reorganizations may be called fast or slow, depending on definition. If we define the end-point as the restructuring of the balance sheet, the reorganization is fast. However, it is slow if its end-point is defined by the eventual sale of the bank.

Securities insolvency proceedings also fit the pattern: an irrelevant stay, high speed when possible, and no negotiation among creditors. Insurance insolvencies are different than bank or securities insolvencies, whether reorganizations or liquidations. Insurance claims are contingent, and many of these contingencies have a very long tail. (Derivatives are contingent contracts, but close-out netting resolves the contingency upon insolvency.) Long-tail contingent liabilities are inconsistent with a rapid liquidation that treats all claims equally. Equal treatment requires that the liquidator wait until all claims have matured: a slow process. Insurance reorganization is difficult, but less so. Here, the main problem is one of valuing the immature claims, so they can be transferred.

3. The Complexities of a Cross-Border Financial Group Insolvency

A financial group is composed of multiple entities, some of which may be financial and others non-financial. Some of these entities have an appreciable financial balance sheet. Others perform services (for example, financial advice), and have few assets or liabilities. Some of these entities might not even be financial in nature.

To appreciate how complex a financial group insolvency might be, one must appreciate their interrelations. A financial group consists of dozens, often hundreds of separate juridical entities. The number of possible connections per entity increases with the size of the group.[1] These entities are related in at least four separate dimensions (Bank for International Settlements, 1999, has a different list, with ten examples):

- *Ownership*. Ownership structure defines the extent of the corporate group, at least formally.[2] It also defines (at least legally) control relations, dividend distributions, and frequently tax consequences. It

[1]The number of possible connections between "n" nodes goes as: $(n^2 - n)/2$.

[2]There are some entities, such as "special purpose vehicles" that might not be owned, and perhaps not formally controlled, by the group for whose benefit they exist. We shall still treat them as affiliates.

also defines the insolvency distribution, at least in corporate groups which contain some solvent entities. Ownership structures can be tremendously complex: with tiered ownership, multiple ownership, circular ownership, and joint ownership all possible. Ownership is also significant to capital flows within the group.

- *Cross-affiliate credit relationships*. Cross-affiliate credit relationships are very common in financial groups, and are the subject of regulation (Gruson, 2003). These credit relationships typically arise from a need for liquidity or credit support (longer-term loans or guarantees). Normally, there are three sources of liquidity in a group: the top-tier company (which can issue debt much like any other commercial company), the banks in the group, and asset-based funds, such as those obtained by special-purpose vehicles or through the repo market. Credit support typically comes from the parent (guarantee, loan, or capital injection) or a bank (typically as a loan). Sometimes, credit support is implicit: for example, an affiliate participating in a loan.
- *Cross-affiliate business relationships*. Traditionally, affiliated financial firms can have very close business relationships: shared customers, shared facilities, even shared employees. For example, a bank that executes derivatives transactions with its customers will often hedge through its affiliated securities firm. Another example might be a bank insurance agent soliciting a customer for an affiliated insurance underwriter. The first example implies significant credit relationships; the second does not.
- *Reputational relationships*. Some financial firms deliberately conjoin the reputation of all of their affiliates, through cross-marketing and common names. Others are less enthusiastic about this branding strategy. But even if a group retains separate brand identities, the disclosure by one public company of a bad event often affects its affiliates, through financial markets, if nothing else.

The significance of these relationships, individually and collectively, varies. They are sometimes very close. For example, in some cases, the business operations of many of the entities in a financial group are virtually pooled, even if the balance sheets are formally separate. Similarly, cross-affiliate credit relations — although highly regulated — are often extensive. Affiliates often share the same name, and thus are reputationally intertwined. However, not all interaffiliate relations are close. Insurers have traditionally

stood at arms' length to their affiliates. Various sorts of "special purpose vehicles" are often designed to be "bankruptcy-remote", meaning that they can be separated from the group which they fund should the group become insolvent.

A group composed of linked affiliates will complicate an insolvency proceeding. Insolvency law operates on the level of an individual entity, not on the level of a corporate group. This is a matter of international consensus, probably from logical necessity. While there are varying definitions of insolvency, the most simple is where assets are not sufficient to meet liabilities. When you ask "whose assets" or "whose liabilities", the only possible answer is that of a single juridical entity. After all, a juridical entity is *defined* as a construct to which one can attribute assets and liabilities. If insolvency law were applicable to corporate groups, the group would be an amalgamation of the legal entities within it, and the individual corporate components would be meaningless, in insolvency terms.

This doctrinal consensus probably stands up in the liquidation of corporate groups, especially when the insolvent entities are dismembered piecemeal. Liquidation can ascribe assets to each entity, sell them piecemeal, and — with some difficulty — sort out the cross-affiliate credit and ownership relationships. (They are often subordinated.)

But corporate separateness is impossible for reorganization. The corporate entities are just too closely interrelated to reorganize independently. A few entities can be easily hived off from the group. Special purpose vehicles, for example, are designed for quick and clean release from their affiliates. But most cannot. It is no surprise that real-world reorganizations usually consolidate the entire group, although liquidations are conducted on an entity-by-entity basis. Real-world reorganization law tracks real-world reorganization reality. The United States Bankruptcy Code contemplates group reorganizations, by permitting a single insolvency venue for an entire corporate group.[3] The European Insolvency Regulation, as implemented by the courts, has a similar result, notwithstanding an apparently stronger theory of entity separateness.[4]

Furthermore, there is much to be said for insolvency consolidation. These gains are particularly pronounced in reorganizations, because a consolidated reorganization takes full advantage of interaffiliate business and reputational synergies. Financial groups operate in an integrated fashion, and can be preserved in an integrated fashion. Interaffiliate credit and equity

[3]28 U.S.C. § 1408(2).
[4]See CA Versailles, 24e ch., Sept. 4, 2003, [Juris-Data no. 2003-220954], note Menjucq.

relations simply disappear in a consolidated reorganization, in at least some senses. They are only significant insofar as they affect the only credit relations that count — those with external creditors. Consolidation is even more important when speed is at a premium, as it is for bulk asset sales and many reorganizations.

Reorganization of a single component of a corporate group can be difficult, even under favorable conditions. The group insolvency of Bank of Credit and Commerce International (BCCI) is a good example. Most of the group was conventionally liquidated, and we need not discuss the subsequent distribution. However, one component was reorganized. BCCI-related parties, acting as nominees for BCCI, illegally owned a United States bank holding company: First American.[5] Since the holding company had few other assets and the component banks were balance-sheet solvent, the United States authorities decided to separate them from the group. This situation was an almost ideal one, from the perspective of an insolvency administrator. Because the ownership was illegal, on a historical basis the ownership had to be, and it effectively was, concealed. There were few interaffiliate operational, credit, or reputational relations. There was some reputational taint, but this was mitigated by the appointment of a prominent banker to serve as trustee, breaking the nexus between the owned (First American) and its true but evil owner, BCCI.

First American was a simple case in principle, yet difficult in practice. The key problem was separating the solvent bank from BCCI. The trust device turned out to be the solution to the difficult practical problem.

It is unlikely that this problem could be resolved with ordinary insolvency powers. Fortunately, the banking authorities could draw on enhanced powers deriving from United States' criminal and banking laws. They interposed a trustee as sole shareholder, responsible to the United States government, rather than to BCCI's nominees. There were several months of conflict between the trustee and the directors over a business plan that would require shareholder money in return for a general release against the shareholders. The trustee wanted no further shareholder involvement; the directors were willing to accept shareholder money to maximize the value of the bank. The trustee then replaced the directors, and within a year had sold off the bank subsidiaries, with only a small amount of other property to liquidate, as well as a lawsuit to prosecute against the alleged wrongdoers.

[5]The proceedings are described in the *First American Report* (1999).

The entities of most financial groups are far more closely integrated than First American with respect to BCCI, and their insolvency officials do not have the nearly unique strong-arm powers that United States authorities have. If First American had some rough moments, separating components in a "conventional" financial group insolvency is even more difficult.

4. The Problems of Group Reorganization

Group reorganizations are attractive, because they can preserve the going-concern value of the group much better than entity reorganizations. Group reorganizations are flexible enough to cope with interlinked business and reputational relationships, as well as many control relationships. Reorganization need not respect formal entity lines for any of these relationships. However, group reorganizations have one potential weakness: credit relationships, which define the entity for insolvency purposes. Credit relationships must be respected in a reorganization, at least somewhat. The distribution to creditors in a reorganization is usually related to liquidation rights. Creditors who would do well in a liquidation tend to do well in a reorganization. Liquidations respect entity lines, so reorganization distributions must respond to entity lines.

This does not create severe problems in nonfinancial organizations. Often, the parent entity alone is the main source of outside debt, either directly or because the parent guarantees affiliate debts.[6] (There may be some complications arising from trade creditors of the subsidiaries, but they are generally paid off in full anyway.) In such cases, the interaffiliate obligations could safely be consolidated, and the reorganization would only affect the creditors of the funding entity — generally the parent. Some subsidiaries enjoy independent credit, but they often enjoy relatively independent operations, as well, and can be separated in insolvency.

But this is not so for financial organizations, which typically have several independent funding and credit sources within the group, and very complex intra-group funding patterns. The complex interaffiliate funding is complicated by close relationships among many entities in financial groups. It is further complicated by the presence of multiple prudential supervisors, each looking after the legal entities for which they are uniquely responsible. Any prudential supervisor would rather regulate a winner, and would resist

[6]Parental guarantees are not as clean as direct parental obligations, but we ignore the complications for the purpose of discussion.

consolidation into a loser. It is even further complicated by the cross-border liabilities of the banking entities. As Ernest Patrikis once put it (G-30, 1998, p. 84):

> *When faced with the prospect of bankruptcy at a multinational bank, it is the solemn duty of each bank supervisor to do all that can possibly be done to ensure that the adverse financial effects fall on no customer or counterparty of the bank. But failing that, they should fall in another jurisdiction.*

The banking entities often operate across borders, through a branch network. This economizes on the number of entities, and it is capital efficient, but does not necessarily simplify the insolvency. As discussed above, some jurisdictions "ring-fence": decomposing the single entity into multiple sub-entities defined by jurisdictions. To make complicated matters even more complex, the nonbanking components of multinational financial firms typically compartmentalize by jurisdiction, thus proliferating the number of entities.

The combination of proliferating entities, close interaffiliate relations, and multiple funding centers can make for a messy insolvency. A liquidation would waste going-concern value. A reorganization might not be much better. Local supervisors will not want the creditors of their entities to be losers, and might be unwilling to defer to a single group reorganization authority (presumably tied to the CCS supervisor).

This all creates a strong pressure for group reorganizations with no losers. This result sounds too good to be true. Unfortunately, we all know that it is too true and not too good. *Governments can always pay the bill.* Supervisors avoid embarrassment, creditors avoid loss, and the going-concern value of the firm is preserved. As discussed above, this is standard practice for insured banks. But this standard practice is a corollary of deposit insurance. Controversial as deposit insurance may be, it can be justified on other grounds than painless insolvency.[7] There are few other arguments for painless insolvency, and experience shows we should not trust them. A painless insolvency preserves going-concern value: a good thing. But painless insolvency also distorts creditors' incentives. It can also distort the incentives of corporate management. Worse yet, painless insolvency can be forever — politics being what it is.

[7]Such grounds include prevention of bank runs and the monitoring weakness of small depositors. Diamond and Dybvig (1983); Dewatripont & Tirole (1994).

So we are caught in a dilemma. Financial group liquidations are very difficult and very expensive, in terms of complexity, disputes, and dissipated going-concern value. Financial group reorganization is just as bad, as long as some creditors might get hurt. A painless reorganization is operationally tractable, but maybe even more expensive, in terms of moral hazard.

5. What to Do?

It is always fun to talk about legal reform, but not always productive. Given the imperfect working of a democratic society, legal reform is only easy during or immediately after a crisis. This is even more true for cross-border legal reform. Cross-border crises are more infrequent, and sovereignty is a potent obstacle to cross-border coordination, at least for those of us who do not live in the European Union. In some ways, matters are even more difficult for a technical field, such as bank insolvency law. We need more than a convergence of principles: we need coordination of detailed rules.

Therefore, we shall not discuss such exotica as group liquidation proceedings, enhanced insolvency consolidation, a centralized role for the CCS supervisor, or the like. They may be good ideas, but most of them are not now practical.

Instead, we shall take current law as a given, and examine some supervisory approaches. Supervisory proposals are more practical than international law reform. We have workable institutions to coordinate supervisors. Bank supervisors are less jealous of their sovereignty than national legislatures, and usually adopt proposals coming out of the Basel process. In contrast, the treaties or model laws promulgated by international treaty organizations are often ignored by most jurisdictions.[8] The two supervisory approaches are:

- We might want to prune the number of entities in a corporate group, and
- We might want to reduce synergies among the remaining entities.

These are admittedly radical proposals, and we are not advocating their instant adoption. We only make three claims for them. First, they are

[8]Some useful information on adoption can be found on UNCITRAL's website at www.uncitral.org/english/status/status-e.htm. The arbitration and sales conventions have done well; few of the others have been adopted by many states.

supervisory in nature. Second, we think we can make a good *prima facie* case for them, and shall do so below. Third, we think that these proposals belong on the reform agenda as a prominent study item.

The organization chart of a modern banking group can be an invitation to eyestrain. But most of the entities are fairly small, and many seem to owe their separate corporate existence to tax considerations or supervisory requirements. Before discussing these two factors, we shall dismiss another: the limited liability enjoyed by entities in corporate groups.

It is unlikely that limited liability is a strong argument for complex affiliate structures. True, an individual entity within a corporate group is protected by limited liability, and its creditors will likely do better in insolvency. But if limited liability aids an entity within the group, it is only at the expense of other entities in the group. Without making special auxiliary assumptions, the net result is zero: the Modigliani–Miller hypothesis in action. The burden of proof should be on those who want to argue that interaffiliate limited liability adds to the credit of a group.

Now, for tax efficiency. Most laymen cannot pretend to understand the mechanics of tax efficiency, and even banking lawyers are mere babes in the tax expert's woods. We certainly cannot fault an enterprise that has found a legal way to pay less tax. However, "tax efficiency" is a peculiar term of art. "Tax efficiency" has little to do with economic efficiency, or any other notion of the public good. An enterprise is "tax efficient" when it has shifted as much tax burden to other taxpayers as possible. A supervisor is not a tax collector, and probably should be neutral toward tax efficiency, per se. But when tax efficiency adds more entities to a group, group insolvencies become more complex. This is a cost. As we have argued above, supervisors should be chary of entity proliferation.

Supervisory policies are more interesting. Unlike tax efficiency, there are valid supervisory policies that support entity proliferation.

Functional regulators prefer to regulate an entity rather than an activity. The entity will pay more attention to the regulator, and the regulator will better understand the entity. But this is a policy of convenience, not necessity. Many functional regulators happily regulate activities rather than entities. Consider the Federal Trade Commission, with its broad consumer ambit. Or consider the Occupational Health and Safety Administration, or the Consumer Safety Products Commission. To the extent that they are mere functional regulators, financial regulators are no different. As functional regulators, they can regulate the activity rather than the entity. This is quite

common. An example closer to home is the Board of Governors of the Federal Reserve System, whose Regulation Z applies to any firm that extends consumer credit, whether regulated or not. One can make a good argument that functional regulation of distinct entities is a weaker policy than insolvency simplification.

But financial supervisors are usually more than functional regulators. They are also *prudential* supervisors. Prudential supervisors deal safety and soundness, and the implications this may have on the balance sheet. As discussed above, a balance sheet implies an entity.[9] Therefore, prudential supervision is inherently entity supervision.

A typical financial organization has many more affiliates than prudential supervisors. Insurance and banking have traditionally been subject to prudential supervision, and securities firms are trending that way. But most other affiliates are either unregulated, or are functionally regulated. Insolvency proceedings would be cleaner if these affiliates were consolidated into the prudentially supervised entities. Such consolidation is possible if the consolidated entities have similar balance sheets. For example, it would be unwise to consolidate an insurance company with a bank. Insurance companies, because of their long-tail contingent liabilities, typically undergo slow liquidations and reorganizations. Banks, in contrast, are typically reorganized speedily, and liquidated as fast as their assets allow. But there is no reason why a bank could not be consolidated with a mortgage lending company. And either a bank or an insurer could be consolidated with an information broker, which has no significant balance sheet.

The distinction we just drew between functional regulation and prudential supervision casts some light on cross-border regulation. The foreign branch supervisors of most jurisdictions are inherently functional regulators, not prudential supervisors. It is the home-office supervisor that is responsible for the balance sheet of the entity. The home-office supervisor is therefore the prudential supervisor of the bank as a whole. The United States is the exception to this rule. United States branches of foreign banks undergo an insolvency proceeding that is separate from that of the rest of the bank. Since these branches have a local balance sheet, United States supervisors act as prudential supervisors of these branches (Baxter *et al.*, 2004).

[9]There are exceptions to this rule, such as trusts and "protected cell companies".

One way to simplify group insolvency is to reduce the number of entities to be wound up. The other approach is to further separate the entities that remain. There is a model for this. The insurance industry typically has holding companies composed of relatively independent insurance companies, working under different names. There are real potential synergies here: capital allocation and pooling, and some specialized central functions. Williamson (1985). But each entity has a distinct line of business, with little interaffiliate exposure apart from the parental shareholding. Insurance, unlike other financial services, has no concept of the source of strength doctrine. Insurance subsidiaries can — and do — become insolvent, without affecting their parent or sister entities.

We are not calling for bank supervisors to prune the complex corporate trees and cleanly separate the remaining twigs of large organizations. At least not yet. But we do think that this idea is worthy of further study, perhaps with an eye to future action. Some specific questions need to be answered:

- Why do financial firms create subsidiaries that are not prudentially supervised?
- Are there any reasons — apart from escaping burdensome supervisory restrictions — why securities and banking operations are traditionally conducted in separate corporate entities?[10] Are the supervisory restrictions necessary ones, or historical artifacts? (In other words, are securities supervisors inherently functional regulators or prudential supervisors?)
- What is the rationale (if any) behind the source-of-strength doctrine?[11] Could this rationale be better satisfied through other means, for example, an explicit insolvency priority for deposits in a consolidated firm, rather than an obligation to funnel capital into the bank?
- How substantial are the tax advantages that arise from the creation of separate entities?

[10]The EU, in its *Conglomerate Directive*, treats these two as closely related, and only insurance as distinct Gruson (2002). The EU might be right. It is also worth noting that English insolvency law has one scheme for insurers, and another for everybody else, including banks and general corporates.

[11]This question has been explored in the literature, although we do not believe that any answers are compelling. See, for example, Broome (1993), Fallon (1991), Gouvin (1999), Jackson (1994).

- What are the greatest practical problems to the separate liquidation or reorganization of entities within a financial group? How can they be mitigated *ex ante*?
- If a financial group is structured so that its main components can be separately liquidated or reorganized (or better yet, liquidated or reorganized while solvent related groups are unaffected), is there any further need for reform of the law governing cross-border insolvency of financial groups? If so, what?
- Does insolvency law itself encourage any inherent separation of businesses into entities? For example, is a bank-style insolvency applicable to an insurer? Is there a structural reason why capital-intensive businesses (for example, subprime lending) cannot be consolidated with highly leveraged businesses, like banking or securities?

References

Baxter, Jr., Thomas C., Joyce M. Hansen, and Joseph H. Sommer, 2004, "Two cheers for territoriality," *American Bankruptcy Law Journal*, Vol. 78, p. 57.

Bank for International Settlements Joint Forum, 1999, "Intra-group transactions and exposures principles," December.

Dewatripont, Mathias, and Jean Tirole, 1994, *The Prudential Regulation of Banks*, Cambridge MA: The MIT Press.

Diamond, Douglas W., and Philip H. Dybvig, 1983, "Bank runs, deposit insurance, and liquidity," *Journal of Political Economy*, Vol. 91, p. 401.

Lamkin Broome, Lissa, 1993, "Redistributing bank insolvency risks: Challenges to limited liability in the bank holding company structure," *University of California Davis, Law Review*, Vol. 26, p. 935.

Fallon, Kieran J., 1991, "Source of strength or source of weakness?: A critique of the 'source-of-strength' doctrine in banking reform," *New York University Law Review*, Vol. 66, p. 1344.

Group of Thirty, 1998, "International insolvencies in the financial sector," Basel.

Gouvin, Eric J., 1999, "Of hungry wolves and horizontal conflicts: Rethinking the justifications for bank holding company liability," *University of Illinois Law Review*, p. 949.

Gruson, Michael, 2002, "Supervision of financial holding companies in Europe: The EU Directive on Supplementary Supervision of Financial Conglomerates," *International Lawyer*, Vol. 36, p. 1229.

Hüpkes, Eva H. G., 2000, *The Legal Aspects of Bank Insolvency: A Comparative Analysis of Western Europe, the United States, and Canada*, Amsterdam: Kluwer.

Jackson, Howell E., 1994, "The expanding obligations of financial holding companies," *Harvard Law Review*, Vol. 107, p. 509.

U.S. Federal Court, 1999, *Amended Trustee's Final Report to the Court*, U.S. v. BCCI Holdings *et al.*, Crim. No. 91-0655 (JGH[sic]), ("First American Report"), December 27.

Williamson, Oliver, 1985, *The Economic Institutions of Capitalism*, New York: Free Press.

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"Too Big to Save" — Toward a Functional Approach to Resolving Crises in Global Financial Institutions

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1. Challenges of Resolving an LCFI

In recent years, the ongoing process of consolidation has led to the emergence of a small number of large and complex globally active financial groups that transcend national boundaries and traditionally defined business lines.[1] Consolidation and conglomeration have been spurred by increased competition in the financial industry arising from technological advances, the development of new financial instruments and risk transfer techniques, economies of scale in terms of product offerings and services, and the removal of longstanding barriers to cross-functional and cross-border mergers and acquisitions.[2] Growing internationalization in the financial sector has further augmented the challenges of consolidation and conglomeration.[3] As a result of these developments, financial systems in many developing and emerging economies are now coming to be dominated by foreign banks.

[1]According to a study by De Nicoló *et al.* (2003) the predominance of conglomerates within the top financial institutions has increased between 1995 and 2000 from 42 percent to 60 percent, the level of conglomeration being the highest among the largest firms.
[2]The consolidation of financial sectors and development of large complex financial institutions (LCFIs) is documented in the "Ferguson Report", Group of Ten (2001).
[3]According to a study by the IMF (2004), foreign-controlled assets (defined as total assets of banks in which more than 50 percent of equity is owned by foreign entities) increased worldwide by almost 40 percent between 1995 and 2002.

Global integration and greater efficiency do not necessarily guarantee greater stability. Larger financial institutions have a greater capacity to withstand stress. Their operations are more diversified; they tend to have more sophisticated risk-management capabilities, and they have bigger capital cushions. Yet, there is the risk that they will serve as a conduit to transfer shocks from one corner of the world to another in the event that they encounter financial distress due to unforeseeable economic shocks, mismanagement, or fraud.

The "creative destruction" caused by the periodic failure of individual financial institutions is an inherent part of an evolving and dynamic market-based financial system. Nonetheless the failure of a large and complex financial institution (LCFI)[4] that is involved in a wide range of financial activities in different regions can cause widespread damage. Its workout or winding down poses a number of challenges.

A misalignment of the incentives of different national regulators precludes global solutions. Various authorities, either cross sector or cross-border, are involved in the supervision of an LCFI. In the case of a crisis of an LCFI, each of the various authorities will be obliged to act in accordance with its own statutory obligations. Regulators are accountable to national legislatures for achieving solutions that are optimal on a national level. The obligation to protect local markets and local creditors' interests will take precedence over a more global perspective encompassing markets and creditors in other countries. This is the underlying rationale for measures such as ring fencing and capital maintenance requirements that host

[4]The term LCFI was introduced by a Task Force formed by the Financial Stability Forum (FSF), the Group of Ten Ministers and Governors and the Basel Committee of Banking Supervision in 2000 to review the main issues likely to be confronted in winding down an LCFI. The Task Force defines LCFIs with reference to the wide range of activities on a large scale in many jurisdictions and financial sectors, and their significant involvement in clearing, payment and settlement systems. A related term is that of a "financial conglomerate", which is defined in the European Directive on financial conglomerates as a group whose activities mainly consist in providing financial services in different financial sectors (banking, investment services, and insurance) and comprise at least one undertaking engaged in insurance business and at least one other undertaking from a different financial sector, and whose [intra-group] cross-sectoral activities are significant. In the United States, a large diversified financial institution is qualified as "Large Complex Banking Organizations" (LCBOs) and subject to more comprehensive and intensive supervision than banking groups Bliss (2003).

regulators may impose on foreign bank branches in order to secure local creditors' claims in the event of the failure of the head office.[5]

Informational asymmetries and regulatory competition hinder information sharing among authorities. Effective crisis management requires access to timely, accurate and relevant information about the LCFI and its operations and markets. The usefulness of the information depends on how quickly it can be obtained and how up-to-date it is. If particular types of information can help to achieve a solution that is more advantageous for the domestic jurisdiction, the regulator may not be inclined to share that information with its foreign counterparts.[6]

Legal uncertainty arising from different legal regimes makes it difficult to plan and orchestrate a wind down of an LCFI in a cross-border context. Differences between home and host insolvency regimes, un-tested enforceability of netting and collateral arrangements, depositor and investor protection legislation, ring fencing practices, pending litigation, and the availability of a range of governmental or judicial measures, such as moratoria, receivership, and financial sanctions, introduce significant uncertainty that makes it difficult to plan and orchestrate a wind down in a cross-border context.[7] Depending on the location of the assets and determination of the applicable law, different rules will apply with respect to preference, ownership interests and set-off. The challenges arising from differences in the legal framework are well documented in the work of the Group of Thirty (1998) and the Group of Ten (2002). Attempts at international harmonization of insolvency laws have met with only limited success.[8] Even if achieved, the harmonization of legislation may not guarantee uniform application. As demonstrated in the Parmalat case, conflicting judicial approaches remain

[5]Baxter, Hansen and Sommer (2004).

[6]Holthausen and Ronde (2004).

[7]The characteristics and implications of different insolvency regimes for banks were examined in a Basel Committee report (Basel Committee on Banking Supervision, 1992). See also Group of Ten (2002).

[8]In 1997, the United Nations Commission on International Trade Law adopted a Model Law on Cross-Border Insolvencies, which sought to address a limited range of issues peculiar to cross-border insolvencies without harmonizing bankruptcy codes in their entirety. As a model law rather than a treaty, it relies on individual countries changing their own laws to conform to the model. The EC Insolvency Regulation, introduced in May 2002, is binding on EU members and stipulates that EU countries must recognize each other's bankruptcy laws and insolvency administrators and their agents.

under the EU Insolvency Regulation despite the unified procedural rules within the European Union.[9]

LCFIs are too complex to fail and to be liquidated. As documented in the Ferguson report, there is reason to believe that financial consolidation has increased the risk that the failure of an LCFI would be disorderly.[10] Given the linkages of the LCFI with the rest of the financial sector and the potential spillover effects of problems within an LCFI onto the institution's counterparties and the financial markets, it seems impractical to put an LCFI into liquidation.[11] The costs to society of crises and instability can be enormous.[12] The average cumulative output loss of banking crises in emerging market economies is nearly 14 percent of gross domestic product, and up to 25 percent in developed countries.[13]

LCFIs are too large to save. The costs of a partial or complete bailout are likely to be very high. The costs comprise not only direct costs for the taxpayers, but also the indirect costs of weakened market discipline and greater moral hazard. Despite cross-border spillovers the costs for bailing out would need to be borne domestically. A market perception that an LCFI would be likely to benefit from official support in times of stress provides a competitive advantage and reduces the incentives for creditors to demand disclosure and monitor risk exposures which in turn enables such institutions to take larger, riskier positions without paying higher risk premiums to their creditors.[14] There are very large international groups based in relatively small economies such as Belgium, the Netherlands, Sweden and Switzerland. The burden on the home public sector of any financial support could prove to be severe.

LCFIs can be too remote to save. The country bearing the systemic risk may not be the country of incorporation of the LCFI. The current scheme of cross-border cooperation does not ensure that national regulators take into account the systemic risk that affects other financial systems. The failure of an LCFI with a large share in the local market of a particular foreign host jurisdiction raises a number of questions regarding home and host regulator

[9]Marks (2004).
[10]Group of Ten (2001), p. 133.
[11]Systemic risks arising from the activities of large and complex financial institutions have been the subject of a number of studies. See for example Dziobek (1997).
[12]The recent past has provided ample evidence of the costs of financial instability. See Basel Committee on Banking Supervision (2004).
[13]Hoggarth, Reis, and Saporta (2001).
[14]A concrete manifestation of this are the support ratings given by Fitch and other rating agencies that seek to reflect the probability of official support in a crisis.

responsibilities that so far have not been addressed. There is no mechanism in place to ensure a generally acceptable sharing of the costs of a public sector solution that benefits many jurisdictions.

Other priorities on the international agenda take precedence over work on the management of financial crises in LCFIs. In the wake of the Asian crisis, the prospect of default by Russia and the collapse of LTCM, financial stability assumed prominence on the international agenda. Considerable work was done to deal with the root causes of the problems, to develop mechanisms for managing crises and to promote greater cooperation among key authorities. Since then, there has been no failure of an LCFI and there has been little political pressure to forge agreement on concrete proposals on how to address the issues. In the wake of September 11, the fight against terrorism and terrorism financing moved to the forefront of the international regulatory and financial agenda. Significant progress in international cooperation and information exchange was achieved for this purpose. The initiatives related to anti-money laundering and combating terrorism financing clearly demonstrate that meaningful international cooperation can be brought about if there is the political will and consensus on the objectives to be pursued. The events of September 11 provided an impetus for further work regarding some aspects of financial crisis management. On the international level, they generated a debate on an extension of cross-border liquidity to avoid temporary liquidity tensions. On a national level, it prompted a review of the contingency preparedness of the financial infrastructure.[15]

2. Refocusing Measures to Resolve Global Institutions — Function versus Institution-Based Approaches

It is neither desirable nor, in some circumstances, even possible to bail out an LCFI in distress. For this reason it is essential to develop effective means to wind it down while at the same time preserving the systemically relevant

[15]For example, in the United Kingdom the Bank of England set up a task force to make recommendations on the need for a legislative response to the threat of major operational disruptions in the UK financial services sector. A report summarizing the findings was published in December 2003 (Bank of England, 2003). The Financial Markets Law Committee (FMLC, 2003) undertook an analysis of how the law and market practice would respond to an event of major operational disruption. It does not consider purely financial crises but rather disruptions due to unforeseeable events such as terrorist attacks or natural catastrophes that may have possible adverse effects on the smooth and efficient operation of financial markets.

functions that it performs. This needs to be done in a world where the authority for the oversight of globally active institutions rests with national authorities.

One concrete and practical way to do this is to identify systemically relevant functions and to insulate them from the global institution. As a first step, it is necessary to agree on definitions and formulate concrete criteria for identifying systemically relevant functions. Secondly, it is necessary to develop practical methods that insulate the systemically important functions and permit the functions to be performed, but do not require the continued existence of the institution. Finally, because this approach will have to be implemented by a range of different national authorities, the conflicts of interest and incentives that exist among national regulators need to be acknowledged and addressed.

If contingency planning and state intervention focus only on the protection of the functions that are systemically relevant in a specific jurisdiction, and not on the preservation of the institution carrying out those functions, moral hazard will be reduced. LCFIs will begin to have misgivings about whether they can expect taxpayers' money to be used to bail them out. As a result, they will become more cautious.

2.1. *Identifying systemically relevant functions*

National regulators need to determine whether an LCFI performs systemically relevant functions in their jurisdiction. In order to do so, they need a definition of systemic risk and criteria to identify functions performed by the LCFI that are systemically significant. Such definitions and criteria should be mutually agreed with regulators in other relevant jurisdictions, because the other authorities must at least tacitly accept that the actions are warranted. Otherwise, their own measures may undercut the actions taken to sustain the systemically important function in the original jurisdiction.

There is no generally accepted definition of a systemically relevant function.[16] An institution's function may be considered systemically relevant if its disruption would impose severe costs not only on the immediate counterparties of the institution but also on the real economy. The adverse

[16]The Report of the Task Force on Major Operational Disruption in the Financial System (Bank of England, 2003) makes reference to providers of "systemically important infrastructure".

real economic effects from systemic problems are generally seen as arising from disruptions to the payment system, to credit flows, and from the destruction of asset values.[17]

To determine whether or not the functions of an LCFI are systemically relevant in their jurisdiction, regulators will need to establish objective criteria that help to assess possible direct or indirect (transmission) effects on the real economy of a shock or disruption affecting the LCFI. Since systemic relevance depends on a range of exogenous and endogenous factors that vary over time, the assessments will need to be repeated regularly.

Criteria to identify systemically relevant functions could include the following.

Market share. Market share is one indicator of systemic relevance. It shows the potential impact that the failure of an LCFI may have. For example, if an LCFI holds a large share of the deposits in a country, its failure could impose losses on depositors and have adverse wealth effects, thus affecting consumption and savings decisions. It could also trigger deposit runs. Adequate deposit insurance may eliminate the risk of deposit runs by ensuring minimum compensation for all retail depositors, provided that the funds of the deposit insurance scheme suffice.[18] If the share of the LCFI in bank lending is significant, its failure could disrupt credit relations and reduce the availability of credit, causing a "credit crunch".

Extent of dependencies. If other financial institutions are heavily dependent upon the LCFI through interbank funding, risk management or payment and settlement systems, there is a serious risk that the failure of the LCFI will affect the real economy through its impact on other financial market participants. For instance, direct interbank loans may be recalled in a crisis, causing liquidity problems for creditors. Interdependencies can be *direct* and *indirect.* Direct interdependencies arise from inter-firm on and off-balance-sheet exposures or cross-shareholdings. Indirect interdependencies can arise from correlated exposures to non-financial sectors and financial markets.

Extensive participation in large-value payment and securities settlement systems. LCFIs that specialize in trading, settlement, correspondent

[17]Group of Ten (2001).

[18]Deposit insurance schemes are typically funded from contributions from the industry itself, sometimes on an *ex post* basis in which case at times of low profitability, payment obligations to the deposit insurance fund arising from the failure of an LCFI could place a severe burden on the remaining financial institutions.

banking or custody activities are likely to be intertwined with the global payment and settlement infrastructure. An LCFI may have a key function in the processing of payments in a country as a member of a payment system, as an operator or co-operator of the payment system or as the provider of payment processing and correspondent banking functions to other financial institutions.[19] If a large share of payments in one jurisdiction is processed through the LCFI, the failure of the LCFI may disrupt economic activity as payments for goods and services can no longer be made and received.[20] Similarly, the disruption of an institution with a major custodial function could severely limit its customers' access to their securities and thereby prevent the settlement of securities transactions.[21] The central importance of some LCFIs for the financial infrastructure was illustrated in the aftermath of the September 11 terrorist attacks by the problems encountered by the Bank of New York, which had a key role in the clearing and settlement of government securities.[22] In the United Kingdom, payment activity through CHAPS (the Clearing House Automated Payment System) is very concentrated. Half of payment activity would stop if either of the two most active banks, which in turn run private payment systems for a large number of smaller banks, were to fail.[23]

[19]The definition of "core clearing and settlement organizations" in the Interagency Paper (2003) includes private sector firms that provide clearing and settlement services in "critical markets", which are defined as the markets for federal funds, foreign exchange, and commercial paper, U.S. Government and agency securities, corporate debt and equity securities. The Interagency Paper was issued by the Federal Reserve, the Office of the Comptroller of the Currency and the Securities and Exchange Commission. It identifies sound practices that focus on minimizing the immediate systemic effects of a wide-scale disruption on critical financial markets.

[20]Lacker (2003) observes that interbank payment disruptions, whether due to technological impediments or credit quality concerns, have been central to several banking crises.

[21]The consultative paper "Standards for Securities Clearing and Settlement Systems in the European Union" dated July 2003 issued jointly by the European Central Bank (ECB) and the Committee of European Securities Regulators (CESR) proposed to define a "systemically important provider" of custodial functions as an institution that has a share of five percent at EU level or 25 percent at the domestic level (or lower, at the discretion of the national authorities) in the bond, equities or derivatives markets. In the final version it is left to national discretion to decide which provider should be deemed systemically important.

[22]The role of Bank of New York (BoNY) in clearing and settling government securities transactions placed it at a critical node in interbank payment flows. For an account of BoNY's experience, see Lacker (2003).

[23]James (2003).

Role in liquidity management in the interbank market. If the local money market is dominated by an LCFI, the possibility of disruption in banks' liquidity management increases. Financial market participants may extend to, or receive from, an LCFI a significant amount of intraday and overnight credit. As a consequence, the failure or disruption of a large payment provider could be significant in terms of credit risk. Trading in corporate securities, government securities, and money market instruments provides banks, securities firms, and other financial institutions with the means to adjust their cash and securities positions and those of their customers. An LCFI that participates, either on its own or on behalf of its customers, with a sufficiently large market share in one or more of these markets and fails to settle its own or its customers' pending transactions could threaten the operation of the market.[24]

Role in risk management. If the LCFI is a major counterparty for local institutions in any of the markets where price, foreign exchange, or credit risk is managed, the collapse of the LCFI will require the local institutions to find alternative means to manage these risks. In addition, if the exposures that are created by the failure of the LCFI generate losses for the local institutions, their vulnerability will increase.

Political consequences. Considerations of the political consequences of distress in an LCFI are likely to color the assessment of whether functions or institutions are systemically relevant. Even if a failure has no immediate destabilizing effects on the economy as a whole, the potential reputational damage may be severe. Loss of confidence and reputational damage may be felt within the entire financial system and result in a shrinking of the financial industry and ultimately reduced tax income to the state.[25]

3. Insulating Systemically Relevant Functions

Once the relevant functions within a jurisdiction have been identified, the next step is to specify and implement measures that would insulate those

[24]As a guideline, the Interagency Paper considers a firm to be significant in a particular critical market if it consistently clears or settles at least 5 percent of the value of transactions in that market.

[25]In the Financial System Stability Assessment of Switzerland for 2002, IMF staff observed that a shock that would threaten one of the large Swiss institutions (or both at the same time) would *"result not only in financial loss but also in loss of reputation — a key asset of Swiss banks"* (IMF, 2002).

functions from disruptions occurring within an LCFI or, where the function itself is affected, minimize the disruption and mitigate its harmful effects. The measures may be taken alone or in combination, either *ex ante* or *ex post*.

The insulation measures discussed below serve to ensure the continued operation of the relevant functions. They leave unaddressed the question of how the losses are allocated. Several loss allocation options are conceivable. The losses may be absorbed by an industry-financed safety net, or by depositors and other creditors, or shifted to the taxpayers when public funds are used to operate the function either in an existing or newly established financial institution.[26] The proposed approach should, however, minimize recourse to public funds since it seeks to contain the adverse effects of a disruption through *ex ante* and/or *ex post* insulation measures.

Three types of insulation measures can be distinguished:

- The *replacement* of the LCFI as provider of the systemically relevant function by other financial intermediaries,
- The dismemberment of the LCFI and *detachment* of the systemically relevant functions, and
- The *immunization* of the systemically relevant function from a default by an LCFI or a disruption in its operations.

3.1. *Replacement*

Authorities need to consider the degree to which, and the speed with which, the LCFI can be replaced as a provider of the systemically relevant function. If other domestic or foreign financial intermediaries can quickly replace the LCFI as a provider of the systemically relevant function, the adverse effects of the failure of the LCFI could be significantly reduced and the need to save it attenuated. The identification of alternative suppliers may ultimately lead to the conclusion that the function is in itself not systemically relevant.

To determine replacement, the following factors need to be considered.

Availability of alternative suppliers. Whether or not a function can be replaced depends on whether domestic or foreign financial intermediaries

[26]The guiding principle for the allocation of losses should be that, before the creditor, the shareholders should be made to bear the cost of the resolution via a dilution or even elimination of their shareholding interests.

have the capacity to perform this function on a sufficient scale to fill the gap. The need to ensure sufficient competition may hamper reliance on replacement if it results in a high degree of concentration in the domestic market.

Infrastructure. New suppliers would need to have the infrastructure necessary to exercise those functions, such as risk control, back office processing and IT systems. Other necessary prerequisites, for instance membership in clearing and settlement systems or securities exchanges, may make it difficult to find suitable alternative suppliers.

Speed. Whether or not other providers can perform the function in question depends on the speed with which they can fill the gap. In the long run every function or activity is replaceable.

The degree to which each function is replaceable will differ depending on the nature of the function. Replacement can realistically be assumed for trading in securities, foreign exchange, and money market instruments. Other market participants may increase their market share or new entrants may find it profitable to begin trading. Depending on how the crisis unfolds — whether or not it develops gradually — replacement could occur without major market disruptions.

In contrast, when a large number of domestic institutions rely on an LCFI to process their payments through a large-value payment, clearing and settlement system, they may have difficulty in finding alternative clearers if other institutions are not members of the system or if they do not have the requisite infrastructure.

Replacement can generally be presumed for deposit taking, but it is not always simple. For an LCFI with a large customer base, transferring customer relationships individually, along with the entire documentation about the relationship, including "know-your-customer" information, may be a daunting task and hardly possible without any disruptions. Detaching and transferring the function in its entirety may be a more practicable alternative. Finding alternative providers for the credit granting function performed by the LCFI for small and medium sized companies and for households may likewise be complicated. Other institutions cannot be presumed to have the information needed to ensure themselves of the creditworthiness of the customers. However, it may be easier for large creditworthy clients to find alternative sources of credit quickly at home or abroad or to tap securities markets directly.

3.2. *Detachment*

If there are no alternative suppliers that can perform the systemically relevant functions of the LCFI, another option is to detach the functions from the LCFI. The detachment should insulate the function from the wind down and permit the performance of the function without disruption. The separated functions may be transferred to an acquiring financial institution, to a newly established institution, a bridge bank or to a fully or partially state-funded institution. Systemically relevant functions need not map into either the organizational or the legal structure of the bank. The feasibility of detachment will depend on a number of factors and present legal and technical challenges for the authorities that may imply *ex ante* actions to make dismemberment easier:

Separability. Whether or not a function can be spun off from the LCFI, depends on whether or not it is economically viable as a stand-alone operation and on the extent to which it depends on infrastructure or support functions that are themselves separable. When the systemically relevant function is operated by a business unit cutting across legal entities, dismemberment presupposes that all adjunct functions, the necessary infrastructure, premises, and human resources (employment contracts) are detachable and transferable irrespective of the legal entity they belong to. When key functions have been outsourced, it is necessary that the outsourcing contracts can be transferred or that an alternative supplier can easily be found.

Transferability. Detachment is contingent upon its legal practicability. The integral transfer of all assets and liabilities relevant for the operation of the function must be possible within a reasonable time frame. When the systemically relevant function, along with the necessary infrastructure and support functions, is located in a separate legal entity, it can be carved out from the defunct LCFI, sold to another institution, or operated on a stand-alone basis. Ownership of the entity can be transferred by reassigning the share capital. It is, however, much more complex to carve out business units that are essential for the operation of the systemically relevant function if they are not legally distinct. Such an operation would involve the transfer of assets and liabilities, including loans and security interests. Taken together these constitute a complex web of contractual relationships and property rights. Under general law, a transfer would require a novation or reassignment of each individual contract, observing the relevant formal requirements as set forth in the law and obtaining the consent of the customers or other beneficiaries. Such an operation would be complex and cumbersome, and

impractical in a crisis that requires speedy resolution and legal certainty.[27] In some jurisdictions it is possible to apply the legislation governing mergers and acquisitions and to transfer businesses as a whole and *uno actu*. The Swiss Merger Act[28] of 2004 provides for a mechanism to transfer assets and liabilities. It subjects the transfer to an impairment test and requires proof that the assets of the transferred business exceed its liabilities. Part VII of the Financial Services and Markets Act 2000 (FSMA) provides for "banking business transfer schemes" designed to facilitate the transfer of a banking business.[29] To prevent abuse and provide some independent appraisal of the scheme, the FSMA requires the approval of the court. The "bridge bank" or the "good-bank/bad-bank"[30] separation technique used in the United States and other jurisdictions is another example of a mechanism that could be used to detach systemically relevant functions.

Legal certainty. Clauses in commercial agreements that require some form of consent (for instance International Swap Dealers Association documents) may hamper the perfection of the transfer of business. Separating and transferring functions is likely to be more difficult if the LCFI is being wound down in an insolvency procedure. The transfer of certain parts of the business and not others may result in creditors not being treated equally. Disgruntled creditors may challenge the transfer of business units on the grounds that the transfer has prejudiced their interests. For this reason, there need to be strict conditions attached to business transfers, such as the requirement of consent by the regulator or court sanction.[31] A statutory procedure to transfer business similar to the U.S.-style bridge bank procedure can be useful to achieve a speedy transfer of a substantial part of an

[27]Contractual novation requires the consent of the parties. Whereas assignment does not require consent, it only operates with respect to entitlements and it does not allow the transfer of liabilities.

[28]The new Swiss Act on Mergers, Demergers, Transformations, and Transfers of Assets (Merger Act) became effective on July 1, 2004.

[29]For a discussion of banking business transfers under the FSMA, see Proctor (2003).

[30]A bridge bank is a temporary national bank chartered by the Office of the Comptroller of the Currency and organized by the FDIC to take over and maintain banking services for the customers of a failed bank.

[31]Business transfers pursuant to sections 104 to 117 of the Financial Services and Markets Act 2000 have so far not arisen in an insolvency context. The reading of the statute should, however, allow for such transfers to be made in the context of an insolvent transferor, or certainly in the case of a transferor whose continued solvency is in question. Provisions requiring certification by the regulators of the solvency of the transferee and court approval are intended to safeguard depositors.

LCFIs operations. The legal framework for transferring businesses is still underdeveloped, or absent altogether, in many jurisdictions.

International recognition. The transfer may be more complicated if it is intended to cover assets or security interests located in a foreign jurisdiction. The transfer may not benefit from international recognition as foreign courts may not recognize the transfer of an asset or security interest in their jurisdiction.[32] It may, however, be argued that the transfer should be recognized pursuant to conflict of law rules if there is an appropriate connection to the jurisdiction of the court that makes the order. Such a connection can be presumed if the business was operated in the jurisdiction through a branch or subsidiary.

In order to make detachment easier in a crisis, the authorities may consider developing contingency arrangements, such as preparing for the creation of bridge bank structures or imposing conditions *ex ante* on the operation of systemically relevant functions in their jurisdictions. Such strictures may pertain to the legal structure and restraints on outsourcing of key operations or management functions to a foreign parent in order to ensure separability and continuity of operations in case of disruptions in the parent institution.

In the United States, the NewBank concept, which provides a contingency plan for the involuntary exit of one of the two existing clearing banks for government securities as a result of financial or legal difficulties, is a good illustration of the concept of detachment.[33] NewBank is chartered as a bank but remains dormant until the time that its activation becomes necessary. When activated, it would purchase the business functions from the exiting clearing bank and substitute itself as the legal counterparty in its place.[34]

In New Zealand, where foreign-owned banks have a significant presence, systemically important banks are required to be incorporated locally so that they can function on a stand-alone basis if the foreign parent experiences

[32]Under the FSMA it is presumed that the transferor institution would hold any foreign security or asset on trust for the transferee, cf. FSMA, section 112(4). The transferor is a bare trustee, and the transferee could thus require the trustee to institute any necessary proceedings for the enforcement of the security in the foreign jurisdiction.

[33]Following the recommendation in a report of a private sector Working Group on Government Securities Clearance and Settlement, the Federal Reserve Board established another private sector Working Group on NewBank Implementation to further develop the concept of a dormant bank that would be available for activation, if necessary, to clear and settle U.S. government securities transactions. See Federal Reserve release of January 30, 2004.

[34]Federal Reserve Board, Securities and Exchange Commission (2002); Federal Reserve Board (2003).

difficulties.[35] Incorporation as separate legal entity ensures that assets and liabilities are separable from those of the foreign parent or head office, which is not the case with a branch. Branches subject to asset maintenance requirements have some of the characteristics of separately capitalized entities.[36] Ring fencing operates as another form of detachment or *ex post* separation. It disregards the form of organization of a foreign bank branch in the host country and treats it as if it were a separate entity by claiming all assets that are booked to the branch jurisdiction in order to ensure that enough assets remain in the jurisdiction to satisfy local creditors' claims.[37]

3.3. *Immunization*

A third option for avoiding systemic risk is to immunize the systemically relevant function by making it "failure-proof" or at least more "failure-resistant". The following techniques can be employed to this end.

Collateralization. Counterparty risk may be reduced or eliminated by requiring full or partial collateralization of counterparty claims. For instance, the proposed "Standards for Securities Clearing and Settlement Systems in the European Union" stipulate that providers of securities clearing and settlement services should fully collateralize their credit exposures.[38]

Set-off and netting. Set-off[39] and netting[40] are widely regarded as reducing the risk that the failure of a major market participant will produce knock-on effects. This is achieved by reducing counterparty exposures from gross amounts to (much smaller) net values. Close-out netting clauses are incorporated into most standardized special financial instruments.[41] They

[35]Bollard (2004).
[36]See infra note 44.
[37]See, for example, N.Y. Banking L. § 606 *et seq.*
[38]See Standard 9, ESCB-CESR (2004).
[39]Set-off is "a method of cancelling or offsetting reciprocal obligations and claims (or the discharge of reciprocal obligations up to the amount of the smaller obligation). Set off can operate by force of law or pursuant to a contract" (CPSS, 1998).
[40]Netting is defined as "an agreed offsetting of mutual obligations by trading partners or participants in a system, including the netting of trade obligations, for example through a central counterparty, and also agreements to settle securities or funds transfer instructions on a net basis" (CPSS, 2001).
[41]A number of master agreements contain netting provisions, for instance, the International Swap and Derivatives Association (ISDA) master agreements 1987, 1992, 2002, the European Master Agreement (EMA) and the Master Agreements shepherded by the British Bankers Association and the Foreign Exchange Committee of New York.

contain the right of a counterparty to unilaterally terminate the contract under certain pre-specified conditions, and the right to net amounts due at termination.

Carve-outs. Statutory law or contractual agreements may insulate certain transactions and collateralization techniques from the operation of insolvency laws. In many jurisdictions, customers' securities are segregated from an institution's own securities and are immunized against claims made by third-party creditors on the custodian.

Market structure measures. Strict anti-trust rules or market share limits may be imposed in order to preserve systemic integrity. For instance, in the United States, inherent systemic risk is kept in check by a market structure measure that prevents any bank from gaining more than 10 percent of the total amount of deposits in the United States (or 30 percent of the total amount of deposits in any State).[42]

In theory, deposit taking could be insulated by requiring large deposit-taking institutions to conduct deposit taking in a separate legal entity and to hold all of their assets in the form of cash and marketable, short-term debt obligations, such as qualifying government securities, and highly rated commercial paper (so-called "narrow banking").[43] However in practice it is unlikely that narrow banking will be legally mandated given the significant complementarity of deposit-taking with other banking activities and the resulting efficiency gains.

One way to insulate branch activities from weaknesses in the foreign head offices is to introduce asset maintenance requirements which serve to secure liabilities in local jurisdictions. U.S. regulators may impose so-called asset maintenance requirements on branches of foreign banks to ensure that sufficient assets would be available in the event of a liquidation to effect repayment to depositors and other liability holders within the United States. This is typically done when the authorities are unable to judge the institution's financial strength, or perceive weaknesses in the financial condition of the parent bank or regulatory arrangements in the home country.[44]

[42] 12 United States Code, section 1842 (d) (2).

[43] Wilmarth (2005).

[44] Asset maintenance ("AM") under the New York State Banking Law means the maintenance of "eligible assets" in New York covering a specified percentage of a branch's third-party liabilities. In general, the concept of eligibility extends to those assets for which there is a reasonable expectation of liquidation on a timely basis. Asset maintenance requirements may be imposed at levels in excess of total third-party liabilities. A foreign branch may be required to maintain a net "due to" parent position at all time. New York State Banking Law, section 202-b(2).

Collateralization and netting are commonly used to strengthen the financial infrastructure, such as payment, clearing and settlement systems. As such, the Committee on Payment and Settlement Systems (CPSS) has developed a number of recommendations that have become accepted minimum standards to reduce cross-border settlement risk and insulate payment and securities settlement systems from the failure of market participants.[45] Similar provisions are codified in the European Settlement Finality Directive.[46] They ensure that orders which are entered into a payment or settlement system are insulated from cherry picking provisions, that the unwinding of netting is prohibited and that collateral is insulated from insolvency proceedings. A certain degree of immunization can thus be achieved through statutory and contractual mechanisms.[47] However, conflicting laws and an absence of mutual recognition can render the effective application of such immunization techniques uncertain in a cross-border context.[48] Significant efforts have been undertaken to harmonize the law and to improve coordination. Overall, the patchwork of applicable laws provides some protection for close-out and netting agreements, but remains a source of legal uncertainty.[49] The Hague Convention on the law applicable to certain rights in respect of securities held with an intermediary of December 13, 2002 as well as the UNCITRAL initiatives in the area of insolvency law and security interests show that international consensus in such areas is not out of reach.

4. Need to Refocus International Regulatory Initiatives

A systemic crisis caused by distress in an LCFI will have significant costs. It will imply the use of large amounts of public funds if the LCFI is prevented from failing. Public assistance will tend to increase moral hazard and raise

[45]CPSS (2001).

[46]Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems ("Settlement Finality Directive").

[47]In recognition of the importance of the legal framework for market activities, the Report of the Task Force on Major Operational Disruptions in the Financial System, Financial Markets Law Committee (2003) recommended a review of private contracts with a view to strengthening the resilience of contracts and providing greater legal certainty. The UK Financial Services Authority is in the process of conducting such a review.

[48]Group of Ten (2002).

[49]Bliss (2003).

the probability of future crises. However, measures to insulate systemically relevant functions from the failure of an LCFI also have costs. For instance, the requirement that local affiliates be separately capitalized will tend to increase operating costs, reduce competition, and impair efficiency in the financial system. Accordingly, there is a clear calculus of the costs and benefits of LCFI regulation.

These challenges are intensified by the global reach of the LCFI. Although an *ex ante* measure can lower the costs caused by a potential disruption of the LCFI from the perspective of the national regulator, the same measure may impede competition or impair market access. It may also reduce the residual value of the LCFIs in other jurisdictions. Thus, there is a need for some common understanding among regulators on measures that are acceptable in order to minimize distortions and the costs associated with the collapse of an LCFI.

By recognizing that each national authority has a legitimate interest in protecting systemically important functions, by reaching agreement on what those functions are and by achieving consensus on the types of actions that are justified to protect them, the problems of being "too large to fail" and "too big to save" could be addressed in a pragmatic and meaningful way.

National boundaries mean little in relation to global systemic instability. Yet, they determine the national regulator's powers and shape the incentives that govern their actions. Regulators in a host jurisdiction may focus on preserving functions with systemic relevance for the local jurisdiction while regulators in the home jurisdictions may be inclined to turn a blind eye, in particular if the operations of the LCFI in the host jurisdiction are small as compared to the LCFI's overall activities and have no effect on the LCFI's overall solvency and profitability.

A particular problem arises in countries where banks are mostly foreign owned. Losses occurring in the home country may lead to retrenchment from foreign operations. The insolvency of the foreign parent could lead to the disappearance of systemically significant functions in the host country. Moreover, losses can occur in the host country that cause the parent to abandon its local establishment. During the Argentine crisis some foreign banks abandoned their branches or subsidiaries in Argentina, and depositors were not able to make claims against the foreign parent.[50] It is difficult to hold a

[50]Negro and Kay (2002).

foreign parent liable for local branches' obligations or to legally compel it to recapitalize local subsidiaries. This situation may generate conflicts of interests between home and host regulators. For instance, the home regulator may be prepared to allow liquidation but the host regulator may want the local affiliate to continue the operation in order to preserve relevant functions and financial stability in the host country.

The current arrangements for cross-border banking supervision and the relationship between host and home supervisors do not take into account the heightened need for information of host countries in cases where systemically relevant functions are operated by an LCFI headquartered in a foreign jurisdiction. Since host country authorities will bear the costs of the disappearance of systemically relevant functions, they will need to retain adequate supervisory powers over all institutions that perform these functions in their jurisdiction and, for instance, will need to know what assets are available to meet obligations in the domestic jurisdiction. The internationally-agreed framework for the supervision of multinational banks, as devised by the Basel Committee on Banking Supervision[51], assigns clear roles to the supervisors in the home and host countries. However, these do not match the responsibilities and powers that the authorities have in an insolvency situation.[52] They shift supervisory responsibilities from the host to the home regulator and fail to acknowledge the host country's legitimate interests in the event of a crisis. In a situation where systemically relevant functions are operated through a branch structure, the host regulator may lack sufficient reliable information concerning the risks and liabilities of the branch, the parent or the entire conglomerate. However, the host country may have to bear the costs of resolution, even if the solvency problems originated in the home country.

5. Conclusions

We cannot expect to eliminate international financial crises entirely, but we can hope to reduce their severity. The prospect of the failure of LCFIs raises profound concerns because the institutions are global and regulation is national. While it might seem logical to have a single authority with broad

[51]Basel Committee on Banking Supervision (1996).
[52]Hüpkes (2005).

powers of regulatory design and supervisory oversight,[53] such suggestions are not politically realistic. For the foreseeable future, or at least until the next major international crisis, national governments will remain unwilling to cede sufficient powers to international bodies to regulate globally active financial institutions.[54] Reliance needs therefore to be placed on national regulators.

National authorities will continue to respond to national interests. For these reasons it is naïve to expect that coordination between home and host regulators will always work seamlessly in a crisis. The best way to address these challenges is to recognize the conflicting interests and reach agreement on an approach that all regulators concerned can apply. If this is done, national regulatory action will be Pareto improving despite differing incentives. The threat of moral hazard will be kept to a minimum and distortions to competition that reduce efficiency will be limited. The aim of such cooperation should be to ensure that systemically important functions are preserved while permitting the LCFI to fail.

Three steps are needed:

First, there is a need to forge international agreement on what systemically important functions are and what criteria can be used to identify them. If there is such agreement, it is less likely that the measures that national authorities take either *ex ante* or *ex post* to preserve these functions will be undercut by actions of other regulators.

Second, there is a need for agreement on the type of insulation methods that could be applied to contain systemic risk without unduly distorting competition and reducing efficiency to inappropriate levels. Further work will need to be undertaken to adapt the legal framework and to develop appropriate tools to either detach or immunize systemically relevant functions from a defunct LCFI. A statutory procedure to transfer business, similar to the U.S.-style bridge bank procedure, is useful to achieve a speedy transfer of a substantial part of an LCFIs operations. Contractual immunization techniques need to be strengthened and to be proof against legal challenge in a cross-border context.

[53]On how such could be designed, see "The financial industry in the 21st century," introductory remarks by Daniel Zuberbühler, Director of the Secretariat, Swiss Federal Banking Commission at the 11th International Conference of Banking Supervisors, Basel, September 2000.

[54]National authorities have rejected approaches that would involve supra-national authorities. See Kenen *et al.* (2004).

Third, there is a need to reexamine the cooperation arrangements between home and host regulators. The principles for cross-border banking supervision need to acknowledge the heightened information need of regulators in host countries where systemically relevant functions are provided through foreign-controlled entities. To this end, it is necessary to reach a consensus on what are the systemically important functions of LCFIs and on the types of actions that are justified to protect them.

References

Bank of England, 2003, "Report of the Bank of England task force on major operational disruptions in the financial sector," London.

Basel Committee on Banking Supervision, 2004, "Bank failures in mature economies," working paper, No. 13, August.

———, 1996, "The supervision of cross-border banking," Basel.

———, 1992, "The insolvency liquidation of a multinational bank," Basel.

Baxter, Thomas C., Joyce M. Hansen, and Joseph H. Sommer, 2004, "Two cheers for territoriality: An essay on international bank insolvency law," *American Bankruptcy Law Journal*, Vol. 78, pp. 57–91.

Bliss, Robert A., 2003, "Resolving large complex financial organizations," Federal Reserve Bank of Chicago, working paper, No. 2003-07.

Bollard, Alan, 2004, "Being a responsible host — Supervising foreign-owned banks," *BIS Review*, Vol. 55, pp. 8–14.

Committee on Payment and Settlement Systems (CPSS), 1999, "Report on OTC derivatives: Settlement procedures and counterparty risk management," CPSS Publications, No. 27.

———, 2001, "Core principles for systemically important payment systems," CPSS Publications, No. 43.

De Nicoló, Gianni, Philip Bartholomew, Jahanara Zaman, and Mary Zephirin, 2003, "Bank consolidation, internalization, and conglomeration: Trends and implications for financial risk," International Monetary Fund, working paper, No. 03/158.

Del Negro, Marcel, and Stephen J. Kay, 2002, "Global banks, local crises: Bad news from Argentina," *Economic Review*, Federal Reserve Bank of Atlanta, pp. 1–18.

Dziobek, Claudia, and Ceyla Pazarbasioglu, 1997, "Lessons from systemic bank restructuring: A survey of 24 countries," International Monetary Fund, working paper, No. 97/161.

European Central Bank (ECB) and Committee of European Securities Regulators (CESR), 2004, "Standards for securities clearing and settlement systems in the European union," September 2004 report.

Federal Reserve Board, 2003, "Report to the Federal Reserve Board by the Working Group on Government Securities Clearance and Settlement," Washington, DC.

Federal Reserve Board, Office of the Comptroller of the Currency, and Securities and Exchange Commission, 2003, "Interagency paper on sound practices to strengthen the resilience of the U.S. financial system," Washington, DC.

Federal Reserve Board and Securities and Exchange Commission, 2002, "Structural change in the settlement of government securities: Issues and options," Washington, DC.

Financial Markets Law Committee, 2003, "Emergency powers legislation: Analysis of how the law and market practice would respond to an event of major operational disruption".

Group of Ten, 2001, "Report on consolidation in the financial sector (Ferguson Report)".

Group of Ten, 2002, "Insolvency arrangements and contract enforceability".

Group of Thirty, 1998, "International insolvencies in the financial sector: A study group report," Washington, DC.

Hoggarth, Glenn, Ricardo Reis, and Victoria Saporta, 2001, "Costs of banking instability: Some empirical evidence," *Financial Stability Review*, Bank of England, June.

Holthausen, Cornelia, and Thomas Ronde, 2004, "Cooperation in international banking supervision," European Central Bank, working paper, No. 316.

Hüpkes, Eva H. G., 2005, "Insolvency — Why a special regime for banks?," *Current Developments in Monetary and Financial Law*, Vol. 3, Washington, DC: International Monetary Fund.

International Monetary Fund, 2002, "Switzerland: Financial system stability assessment," country report, No. 02/108, June.

———, 2004, "Financial sector regulation: Issues and gaps," background paper, August 17.

James, Kevin R., 2003, "A statistical overview of CHAPS sterling," *Financial Stability Review*, June, pp. 115–121.

Kenen, Peter, Jeffrey Shafer, Nigel Wicks, and Charles Wyploz, 2004, *International Economic and Financial Cooperation: New Issues, New Actors*, London: Center for Economic Policy Research.

Lacker, Jeffrey M., 2003, "Payment system disruptions and the Federal Reserve following September 11, 2001," Federal Reserve Bank of Richmond, working paper, No. 03-16.

Marks, David, 2004, "Conflicts under the EC insolvency regulation: First come, first served?," *International Corporate Rescue*, Vol. 1, No. 123, p. 127.

Proctor, Charles, 2003, "Bank restructuring under the Financial Services and Markets Act," *Journal of International Banking Law and Regulation*, No. 12, pp. 471–480.

Wilmarth, Arthur E., Jr., 2005, "Controlling systemic risk in an era of consolidation," *Current Developments in Monetary and Financial Law*, Vol. 3, Washington, DC: International Monetary Fund.

Zuberbühler, Daniel, 2000, "The financial industry in the 21st century," introductory remarks at the 11th International Conference of Banking Supervisors, Basel.

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Europe's Universalist Approach to Cross-Border Bank Resolution Issues

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Preventing the insolvency — that is, the default on obligations and, in particular, the inability to repay deposits — of depository institutions is the essential objective of what is known as prudential or safety-and-soundness banking regulation. The latter now forms the core component of the broader banking regulatory systems of all nations. In contrast, the monetary, market-structure, pricing, and/or social objectives that animated banking policy in the past have either been abandoned or lost relative importance.

The prudential policy turn and, closely related to it, the remarkable trend towards international regulatory convergence were precipitated by a series of spectacular cross-border bank failures, whose recurrence they are intended to preclude. Thus, the collapse in June 1974 of Bankhaus Herstatt, a small German institution intensely active in the foreign exchange market, marks the birth of modern banking regulation. The coincidence of the Herstatt crisis with unprecedented bank failures in the U.K. and the U.S. later in that year generated major concerns about the prudential state of the international banking industry. More specifically, Herstatt brought to awareness the nature and potential scale of cross-border effects of bank failure. The policy response to the 1974 events involved the creation of the Basle (now Basel) Committee (BCBS), an informal club comprising the world's most significant central banks and non-central-bank bank regulatory authorities. The first project of the new grouping entailed the formulation of a so-called Concordat (BCBS, 1975), delineating the responsibilities of relevant national supervisory authorities in relation to the prudential supervision of banks present in more than one jurisdictions. A few years later, the collapse of the Italian Banco Ambrosiano group, caused by the insolvency of its unregulated Luxembourg subsidiary, demonstrated that additional work

was necessary in the direction of eliminating supervisory gaps and led to the issuance of a new, streamlined Concordat (BCBS, 1983). The committee further refined its arrangements regarding the supervision of banks and banking groups with cross-border activities in July 1992, in response to the Bank of Credit and Commerce International (BCCI) debacle (BCBS, 1992a).

Through this line of work, the Basel Committee has introduced a globally accepted framework for the allocation of prudential responsibilities in relation to internationally active banking organizations, whether these are set up in the form of a single entity, comprising a primary establishment in one country and one or more foreign branches, or as groups of affiliated companies having separate legal personality and different nationality. The main principle that underpins this framework is that the solvency of every banking organization with foreign branches or subsidiaries should be ultimately and effectively supervised on an aggregate or consolidated basis by the authorities of the country of incorporation of the single entity, in the former case, or the group's head entity, in the latter.

Through a parallel process, the Basel Committee has also achieved full harmonization of the substantive rules regarding the measurement and minimum level of bank capital (BCBS, 1988, 2004). The same rules of capital adequacy apply in Europe as elsewhere. In other words, the division of supervisory responsibilities has progressed hand-in-hand with the emergence of a common body of substantive regulatory standards, specifically linked to the financial position and, in particular, solvency of banks.

1. Absence of Convergence in International Bank Insolvency Law

In short, the Basel principles and recommendations determine the allocation of supervisory jurisdiction and the principal prudential standards to be applied throughout the time that a bank is in business, but fail to address directly situations where things have already turned sour and the bank is facing ruin. In other words, while a considerable degree of convergence seems to have been achieved in relation to practices and standards aimed at preventing failure, little work has been done in the direction of a harmonized approach to the responsibilities and methodology for bank resolution (Hüpkes, 2002) — whether the latter takes place through rescue operations of various sorts or through insolvency proceedings of either the judicial or the administrative type (Hadjiemmanuil, 2004). An attempt toward

a structured methodology for tackling bank crisis and insolvency can be found in the "Weak banks" report of March 2002 (BSBC, 2002; cf. World Bank, 2001); this, however, addresses only cursorily the problems posed by international groups and/or financial conglomerates (BCBS, 2002).

Back in 1992, a Basel Committee study group employed the BCCI debacle as a case study to explore problems relating to the liquidation of a multinational bank. The final report was of a rather descriptive character and did not include clear and precise answers to the problems it identified (BCBS, 1992b). Very interestingly, however, it outlined four basic legal concepts, which play a critical role in cross-border bank resolution. Two of these concepts — namely, the separate-entities/single-entity doctrines and the applicable law of bank liquidation — concerned the private international law of bank insolvency and are, accordingly, of particular significance for the present discussion. The two remaining concepts were substantive and involved the right of set-off and the impact of proceedings aimed at the imposition of criminal and civil penalties on bank liquidation. Unfortunately, the Basel Committee did not further pursue this line of inquiry.

Thus, when insolvency proceedings appear necessary in relation to an international banking organization — especially, one organized in a group structure or functioning as a financial conglomerate — a number of thorny questions acquire critical importance. What form and level of cooperation, if any, should characterize the relationship between the regulatory and insolvency (judicial or administrative) authorities in the various jurisdictions where the bank retains assets and/or affiliated establishments? Can insolvency proceedings be brought in all these jurisdictions or only in one? Which parts of the organization are covered by the proceedings? What is the governing law? Which creditors are eligible to bring claims? Which assets are available to satisfy their claims? These and related questions have not yet found full, convincing and consistent answers (for a brief survey of existing international rules, see Krimminger, 2004).

2. The Main Policy Options in International Bank Insolvency

Establishing which state is responsible for conducting insolvency proceedings is of paramount importance when things go wrong for a bank with cross-border presence. This points to a perennial dilemma of international insolvency law and policy, that is, whether the collective proceedings relating to an insolvent enterprise with activities in multiple jurisdictions should

be characterized by the principles of unity (in accordance to which only a single set of proceedings, covering both the head office and its foreign operations, is available) and universality (whereby the national proceedings cover all foreign assets of, and all foreign claims against, the insolvent enterprise, and equivalent groups of creditors in the various jurisdictions are treated equally under a single set of priorities, determined by the law governing the proceedings) or by the rival principles of plurality and territoriality (Hüpkes, 2000; Tsanidis, 2004). Applied specifically to banking, the question is framed in a somewhat different way — namely, whether the home operation and overseas branches of an insolvent bank should be treated as a single entity (one worldwide set of assets, one set of creditors) or as separate entities (separate resolution in each host state, with only local depositors and other creditors being allowed to prove against the local or, possibly, worldwide assets) (Devos, 1999).

In a recent article, Tom Baxter, Joyce Hansen, and Joseph Sommer distinguish four main possibilities (Baxter *et al.*, 2004):

In the "classical territorialist" model, insolvency proceedings can be brought in every jurisdiction where a failed bank maintains an establishment or keeps assets. Each jurisdiction has authority over all local assets, but not any overseas assets. Foreign creditors are often allowed to file claims. But foreign courts and insolvency officials are excluded from participation in the national proceedings. Thus, uncoordinated parallel proceedings can run in all jurisdictions where assets can be marshaled.

Under "modern territoriality" — which essentially is another name for the "separate entities" doctrine as applied in the United States to the domestic branches of foreign banks — each branch or agency of an international banking organization is treated as if it were a stand-alone, separately incorporated legal entity and is liquidated or restructured independently from the rest of the organization, under the control of the host authorities. Unlike classical territoriality, the system is claims-, not asset-based: The creditors of the branch or agency are entitled to be paid out of the local assets, but also out of assets located elsewhere if these are booked with the local operation, possibly as a result of entries in the bank's own records or of payment- or settlement-system links. Despite its "generosity" — or, to be more precise, its extraterritorial reach — on the asset side, modern territoriality is rather restrictive in so far as eligible claimants are concerned: only local creditors are allowed to file their claims in the proceedings. Following their satisfaction, any remaining dividend is transferred to the head office's estate, which

is treated as a residual claimant in the position of shareholder. Non-local creditors of the worldwide operation are expected to claim at that level.

In contrast to the above, under the "full universality" or "single-entity" doctrine one jurisdiction conducts the main insolvency proceeding. All other jurisdictions play a secondary role, mainly by assisting in the collection of assets. In a genuinely universalist system, the bank's legal person (although not banking groups) is wound up in a unitary process and foreign branches are treated only as offices of the larger corporate entity. The liquidators are concerned with the collection and realization of the worldwide assets and all creditors of the bank worldwide are entitled to prove in the liquidation. In principle, claims of creditors of the head office do not obtain priority over the claims of creditors of foreign branches.

Finally, "modified universality" attempts to alleviate the rigidity of full universality, by emphasizing cooperation among countries. Each country's courts (and, less evidently, the relevant administrative authorities) decide on a case-by-case basis, taking into account the factual circumstances, whether they should initiate and conduct main or ancillary proceedings or they should, instead, defer to the courts of another jurisdiction. The UNCITRAL Model Law on Cross-Border Insolvency and section 304 of the U.S. Bankruptcy Code are mentioned as examples of how modified territoriality may work in practice.

The foregoing analysis may be somewhat misleading. What it calls euphemistically "modern territoriality" is not merely a technical refinement and adaptation of the classical version. Its most characteristic aspect involves the steadfast ring-fencing of assets, which are then realized for the exclusive, or at least preferential, benefit of local creditors. This is a quite extreme solution, which can be justified only to the extent that branches are perceived as effectively independent companies.

Conceptually, full universality appears as the soundest approach, since it recognizes the unity of the bank's legal personality in full (cf. Group of Thirty, 1998). On the other hand, universality is difficult to implement in practice. If it is to operate effectively, only one set of proceedings should be allowed (that is, there should be unity of the proceedings) and its universal reach should be respected universally. Other jurisdictions must recognize the applicability of the legal rules of the forum of proceedings and the actions of its insolvency officials, including by tolerating their mandatory interference with local relationships of the insolvent bank. This is unlikely if, for instance, the forum seeks to apply priority rules, which discriminate against foreign

claimants, or even priority rules which are applied indistinctively, but which diverge fundamentally from local policy choices.

Thus, the unilateral adoption of this system by a bank's home jurisdiction is not enough. All affected jurisdictions must give their prior and mutual consent, in the form of a treaty or similar commitment. For this to happen, thorny issues must be addressed. At the most basic, clear rules of private international law on the selection of the main jurisdiction where proceedings can be brought must be agreed upon. A further question relates to the availability or exclusion of secondary, subsidiary proceedings in host jurisdictions for the purpose of effective local collection of assets. The most difficult issues, however, relate to the reconciliation of divergent national rules of priority, or preferences, and the recognition and enforcement of local rights and agreements, including set-offs, proprietary rights in instruments involving some kind of record-keeping, account-keeping or registration, netting and repurchase agreements, etc. Ideally, the universal insolvency proceedings would be subject to a single legal system, governing all substantive matters relating to the effect of the moratorium, the avoidance or enforcement of transactions, the collection of assets, etc. Nonetheless, in all these issues, nations diverge widely and are unlikely to agree on the disapplication of their own rules within their territory, especially when the protection of their own citizens is at stake. This necessitates wide exceptions from the basic principle that unitary, universal proceedings should be subject to a single law — presumably, the law of the forum of the proceedings, or *lex fori concursus* — and dilutes the values of coherence and equal treatment that universalism is intended to serve.

A theoretically attractive alternative to full universalism would involve classical territorialist proceedings in all countries where the insolvent bank maintains assets, with universal cross-filling of claims and integration of the foreign claims in each set of proceedings in the equivalent local ranks of priority (cf. Westbrook, 1997). In a system of this type, creditors could be represented in the parallel foreign proceedings by the officials of their domestic insolvency. This system is a close alternative to universalism in terms of ensuring neutrality of distributional outcomes. Politically, it presents the advantage that interested countries can accept it more easily, because it respects their jurisdiction over the treatment of local assets and relationships and applies the local order of priorities to the local estates.

Whether universalism as applied in practice works better than modern territoriality, is open to debate. Both approaches can rely on a quite impressive armory of arguments.

Territorialist systems are praised for providing incentives for vigorous and early initiation of insolvency proceedings. Host authorities can protect through their own insolvency-related actions the creditors of the local branch and have, accordingly, a strong reason to monitor more closely the financial condition of foreign banks. Their intervention can, in turn, trigger the early commencement of proceedings in the bank's home jurisdiction. On the other hand, the home jurisdiction is not only responsible, under current Basel arrangements, for the global supervision of its banks on a solo and group basis, but also better placed to monitor their global risk management and financial situation. Thus, it should be more qualified to judge whether the commencement of insolvency proceedings is advisable or not. In contrast, the territorialist system may discourage forbearance of lingering insolvency, but also introduces perverse incentives, potentially leading the host jurisdiction to take action earlier than justified by the global situation, in order to marshal and ring-fence all assets that it can lay its hands on. This will also lead to preemptive actions by the home jurisdiction, which will attempt to repatriate early on as many assets as possible. By extension, this conflict of incentives is likely to generate communication and information-sharing problems during times of distress (cf. Calzolari and Loranth, 2003).

It is also asserted that territorialism enjoys a clear advantage over universalism as far as asset recovery is concerned. Asset recovery does not only comprise the stocktaking of existing assets, but also — and sometimes mainly — the recovery of the proceeds of criminal and/or civil wrongdoing by particular individuals. Of course, the home jurisdiction is always free to pursue wrongdoers, but taking the necessary actions becomes tremendously more difficult when the wrongdoer resides in another jurisdiction, unless close judicial and enforcement cooperation can be secured. However, the problem of pursuing wrongdoers across borders will also be faced — albeit not with the same frequency — by territorialist systems whenever the host jurisdiction seeks to pursue abroad the perpetrators of crimes or civil wrongs involving the local branch.

The basic argument in favor of universalism is that it facilitates bank reorganizations. This is so, because it permits a "global" administration of the insolvent bank, whereby foreign branches, as mere offices or operating units of the larger corporate entity, are restructured together with the head

office. (The same approach, of course, will be inapplicable to the affiliated members of an insolvent international banning group, which are likely to be treated separately in all cases. See Nierop and Stenström, 2002.) This increases the value of the estate in comparison with territorialist systems, which compartmentalize the corporate entity into local units that in many cases are not worth preserving as going concerns on a stand-alone basis. Admittedly, formal reorganization proceedings are rarely used in the case of ailing banks; instead, there is reliance on pre-insolvency workouts and rescue operations (such as capital injections, mergers, liability transfers, etc.). Even so, the unavailability of potentially disruptive foreign proceedings can be beneficial, because, by removing host-country insolvency-related obstacles and "veto players", it facilitates the implementation of centralized informal restructuring operations by the home state.

The problem of legal complexity is also mitigated under universalism, and exacerbated in territorialist systems. For reasons mentioned above, even in universalist systems, the overseas legal relationships of the insolvent bank will be governed by the legal rules of various jurisdictions. However, this will only affect the enforcement of claims and secured rights but not the final distribution of collected assets, which will be handled centrally by the jurisdiction of the main proceedings, based on a more or less integrated order of priorities.

More generally, universalist systems reduce the transaction costs incurred by persons wishing to prove in the proceedings, since the latter only need to participate in a single set of proceedings. In contrast, classical territorialism leads to a multiplication of participation costs, as well as of costs associated with the administration of the parallel national proceedings. In modern territorialist systems, of course, this argument loses importance, because creditors are allowed to participate only in the insolvency proceedings affecting the branch with which they conducted business. But this is achieved at the cost of unequal dividends for similarly placed claimants in different jurisdictions, depending on the vagaries of the bank's asset-booking.

Advocates of modern territorialism finally assert that universalism encourages "priority inflation". It is an established fact that all national insolvency laws tend to include priorities, whose effect is to benefit local creditors, either explicitly (for example, local tax authorities) or implicitly (for example, local insolvency officials and lawyers). This bias may be aggravated under universalism, since assets located in other jurisdictions can

be used to pay off in priority creditors resident within the jurisdiction of the forum. In contrast, the problem is supposed to be mitigated in modern territorialist systems, which exclude foreign creditors anyway. What this argument fails to explain, is how, if at all, modern territorialist improves overall the "net" result for unsecured creditors: the claims of the latter are now fragmented in national classes, with foreign depositors and other creditors ranking behind all local creditors in each set of proceedings. While, then, it is predicted that under universalism all unsecured creditors will suffer some measure of net loses in favor of the home jurisdiction's preferred creditors, but will otherwise be treated equally, under modern territorialism the distributional result for each national class of unsecured creditors becomes inherently ambiguous and unpredictable, but always uneven. Moreover, the alleged bias towards priority inflation in truly universalist systems may be less pronounced, because it will be constrained by the need to recognize foreign claims at equivalent rank.

3. Endorsement of Universalism in European Law: The Winding up Directive

In the European Union (EU), bank resolution policy belongs in principle to the several member states. European law contains a number of specific requirements, which constrain the national discretion in certain respects, but does not include a fully-fledged single normative framework or common decision-making structures. A unified, pan-European legal and administrative framework for bank resolution is still lacking — and unlikely to emerge in the foreseeable future. Even so, the relevance of Union law is gradually growing in this field too. Already, a few European directives have a direct bearing on bank resolution policies. These directives constitute a fragmentary body of harmonized norms of special bank insolvency law. In particular, the Deposit Guarantee Directive (Directive 94/19/EC of the European Parliament and of the Council of 30 May 1994 on deposit-guarantee schemes, OJ 1994 L 135/5) sets out the minimum level of coverage that each member state's national deposit insurance systems must provide to all European depositors of the banks for which this is responsible in its capacity as home state. Simultaneously, certain general norms of European competition and central banking law constrain the member state's ability to resolve troubled banks by way of rescue operations or other types of financial assistance.

The recent, and very important, Winding Up Directive (Directive 2001/24/EC of the European Parliament and of the Council of April 4, 2001, on the reorganization and winding up of credit institutions, OJ 2001 L 125/15), which came into full effect on May 5, 2004, applies specifically to the issue under discussion here, that is, cross-border bank resolution. The directive harmonizes the rules of private international law and some procedural rules applicable to bank collective proceedings, with a view to ensuring the mutual recognition of the national measures relating either to the reorganization or the winding up (that is, liquidation) of banks (or, in European parlance, credit institutions) in difficulty (Campbell, 2002; Deguée, 2004). The directive performs in the banking sector the role played in relation to general corporate insolvency by another European instrument, the Insolvency Regulation (Council Regulation (EC) No 1346/2000 of 29 May 2000 on insolvency proceedings, OJ 2000 L 160/1). The latter creates a single conflict-of-laws regime involving the mutual recognition of collective proceedings relating to non-financial enterprises (for detailed analysis, see Moss *et al.*, 2002). Its sphere of application excludes, however, all financial institutions. These are treated in three different ways: credit institutions are covered by the Winding Up Directive; insurance undertakings are subject to the very similar provisions of Directive 2001/17/EC of the European Parliament and of the Council of March 19, 2001, on the reorganization and winding up of insurance undertakings (OJ 2001 L 110/28); and there is simply no European law on the insolvency of securities intermediaries and undertakings for collective investments in transferable securities (UCITSs), which must, accordingly, be decided in accordance with national private international law.

The general, banking and insurance insolvency instruments, all cover issues of choice of forum, foreign recognition of the national proceedings and (to a certain extent) choice of law, setting the ground for a European order in insolvency law (Omar, 2004). In contrast, they affect minimally the procedural rules of domestic insolvency law and do not impinge on material (substantive) issues. In particular, they leave largely unaffected the rules on the order of priority of claims, which continue to be widely divergent across member states.

The insolvency regulation shares with the two sectoral directives a fundamental universalist policy aspiration. But a major divide opens in relation to the possibility of "secondary" territorial proceedings. The regulation's starting point entails the universal recognition of the main insolvency

proceedings, which are opened in the member state where "the center of the debtor's main interests is situated"; this, for a legal person, is generally deemed to be the place of its registered office. However, territorial (secondary) collective proceedings may also commence in any other member state where the debtor has an establishment [Article 3(2) and 16(2)]. This is intended to increase the efficiency of collection efforts. The secondary proceedings only produce effects in relation to local assets; but within this limited scope they prevail over the main proceedings and are respected across the community [Article 17(2)]. Although the regulation provides explicitly for cross-filings by all creditors and liquidators in all parallel (main and secondary) proceedings (Article 32), thus ensuring equality of creditors' treatment, in terms of procedure and governing law the distance from pure universalism is very substantial. The end result is probably better described as modified classical territorialism with universal cross-filing (Westbrook, 1997).

In contrast, the Winding Up Directive applies unwaveringly the principle of unity of the insolvency proceedings. The home member state is given full and exclusive competence for insolvency proceedings relating to its banks [Preamble, rec. (6) and (16), and Article 3(1) and 9(1)]. Specifically, the directive applies to reorganization measures or winding Up proceedings relating to European credit institutions and their branches established in other EU member states. Banks having their head office outside the EU are only covered if they retain branches in at least two member states (Article 1). Reorganization measures are defined as "measures, which are intended to preserve or restore the financial situation of a credit institution and which could affect third parties' pre-existing rights, including measures involving the possibility of a suspension of payments, suspension of enforcement measures or reduction of claims" (Article 2, seventh indent). The European legislator is agnostic as to the legal form of such measures. Accordingly, both administrative and court-based procedures are covered, provided that the rights of third parties are at issue. This becomes the primary criterion distinguishing reorganization proceedings from ordinary supervisory enforcement actions. In contrast, winding up proceedings are defined as "collective proceedings opened and monitored by the administrative or judicial authorities of a Member-State with the aim of realising assets under the supervision of those authorities, including where the proceedings are terminated by a composition or other, similar measure" (Article 2, ninth indent). These are normally judicial, although some States place them under

the control of administrative authorities (including the bank supervisors). Control over both types of proceedings is assigned to the competent authorities of the home State (Article 3(1) and 9). Secondary proceedings are completely excluded. Nevertheless, a puzzling provision refers to situations where "the administrative or judicial authorities of the host member state deem it necessary to implement within their territory one or more reorganisation measures" (Article 5); if so, they must inform accordingly the home State's supervisory authority (and not the authorities responsible for the opening of insolvency proceedings, if different). In view of the directive's insistence on unitary proceedings, it is not evident what form the host authorities' determination might take in these circumstances (given that it could not amount to the opening of secondary proceedings).

The principle of universality is also respected up to a certain point. The basic rule is that the laws, regulations and procedures of the home State govern the proceedings (Article 3(2) and 10). This ensures mandatory coincidence of forum and governing law — that is, the *lex fori concursus* applies generally, albeit not in all respects. Numerous exceptions (Articles 20–32), however, significantly reduce its effective field of operation and, simultaneously, dilute the principle of universality, in so far as they localize certain types of legal relationships and subject them to the dissimilar legal rules of the various host States (Cercone, 2004). This is, for instance, the case of netting arrangements, which in the context of the bank insolvency proceedings continue to be governed by the proper law of the contract (*lex contractus* or *lex causae*). Concerning contractual rights relating to immovable property, or security rights, the directive respects the principle of territoriality (*lex rei sitae or lex contractus*, depending on the case). The same applies to security rights relating to tangible or intangible assets (including fixed and floating charges, as well as transfers subject to a reservation of title) and contractual rights of set-off which might not be recognized under the law of the home state (*lex rei sitae or lex contractus*, depending on the case). The fate of transactions carried out on regulated markets is decided according to the proper law of the contracts — which will usually be the law of the state where the markets are located. And so on . . .

The reason why the European legislature found it necessary to adopt separate insolvency instruments which forbid secondary proceedings for the regulated enterprises of the financial sector, should be sought precisely in the need to align closely the regulatory and insolvency responsibilities in this area (Wessels, 2004). Disregarding any collection advantages that the

availability of secondary proceedings might present, the Winding Up Directive recognizes that in Europe the regulatory equivalent of the principle of unity — the principle of "home-country control", whereby a banking institution and its branches are placed together under the responsibility of a single jurisdiction, that is, of the home State — already governs the on-going supervision of credit institutions in a pre-failure context. The directive stipulates explicitly that the same principle should also underlie the commencement and subsequent conduct of collective proceedings following failure. In this manner, the Winding Up Directive completes the cycle opened in the 1980s with the European rules on banks' authorization and prudential supervision (now consolidated in directive 2000/12/EC of the European Parliament and of the Council of 20 March 2000 relating to the taking up and pursuit of the business of credit institutions, OJ 2000 L 126/1) and continued in the 1990s with the Deposit Guarantee Directive. This is only reasonable, given the interconnection between ongoing prudential supervision and bank resolution, including by way of collective proceedings. In the opposite case, the authorities in each host member state where an ailing bank has a presence would be able initiate autonomously actions affecting the bank's overall fate, thus leading to conflicts of jurisdiction and disruption of the unitary regulatory control of the home State (cf. Mayes *et al.*, 2001).

A related objective of the Winding Up Directive is to transplant and implement in the insolvency field the principle of automatic and complete "mutual recognition" of home-country actions, without need for further formalities. The national proceedings of the home State are recognized across the Union and produce the same effects in any other member state as in the State where they were opened. Administrators and liquidators are explicitly allowed to exercise across the Union all the powers, which they are entitled to exercise within the territory of their own member state. However, in discharging their powers, they must comply with the laws of the States, within whose territory they take action — especially so, in connection with procedures for the realization of assets and the provision of information to employees (Article 28). In contrast to the Insolvency Regulation (Article 26), the mutual recognition of bank insolvency proceedings is not subject to a public-policy exception. Moreover, the home State's measures are fully effective *vis-à-vis* third parties in other (host) member states, even where the rules of the latter do not provide for equivalent measures, or envisage them in principle but subject their implementation to conditions which are not fulfilled in the case in hand.

Crucially, the directive does not attempt to give expression to the third pillar on which the single European banking market has been built — that is, the "minimum harmonization" of the substantive rules. The directive, in sort, is not aimed at establishing a framework of commonly accepted substantive and/or procedural minimum standards permeating bank resolution practice across member states, but simply to ensure the mutual recognition by member states of the measures that each one decides independently to take to restore the viability or to ensure the orderly termination of locally authorized banks. This is problematical, especially in view of the fact that mutual recognition in regulatory law was based specifically on the effective functional equivalence, as a result of harmonization, of the national systems of prudential supervision.

The Winding Up Directive makes major strides to ensure that its universalist/home-country-control-based stance will not imperil the legitimate interests of creditors in host member states. Thus, the administrative or judicial, as the case may be, insolvency authorities of the home state are required to inform promptly by any available means the supervisory authorities of the member states where branches of the insolvent bank are established of their decision to commence proceedings. The notification should indicate the likely practical effects [Articles 4 and 9(2)]. The directive further requires the publication in the host member states, in appropriate languages, of the decision to commence proceedings (Articles 6 and 13), as well as the individual notification of known creditors in the host member states, if the *lex fori concursus* requires lodgment of a claim as a condition for its recognition. The information provided in the latter case should indicate, in particular, the time limits, the penalties laid down in regard to those time limits, and the body empowered to accept the lodgment of claims or observations relating to claims (Articles 7 and 14). Finally, liquidators are required to keep creditors regularly informed of the progress of winding up proceedings (Article 18). By means of these provisions, the purely procedural interests of all depositors and/or other creditors are given equal weight and protection, regardless of nationality or state of residence.

The directive, however, goes even further by mandating, not only that any creditor resident in another member state be given the right to lodge claims or observations relating to claims, but also that such creditor receive equal substantive treatment and accorded the same ranking with comparable creditors in the home State (Article 16). In this manner, the European legislation seeks to give universal effect to the order of priorities of the home

state, but also to preempt the bias towards national protection and priority inflation. Nonetheless, it does not do so consistently and comprehensively, because, as explained above, it includes wide exceptions from the application of *lex fori concursus* in order to ensure that the latter does not render invalid or ineffectual contractual rights and security interests acquired under the law of another member state.

Last but not least, the Winding Up Directive is the closest one gets to a genuine single-entity approach in current international practice. However, its universalism is not completely universal: it is subject to both geographical limitations, since it applies only within the EU, and limitations in terms of the nationality of the banks covered by its provisions. Thus, its provisions apply to the home operations and EU branches of European credit institutions, but not to their operations in third countries. The directive also includes a special regime for the insolvency treatment of the European branches of third-country banks (Articles 8 and 19). In this relation, it preserves the customary territorialist approach. This is consistent with the separate authorization of third-country banks' branches in each host member state. Where such a bank maintains branches in several member states, then, if the national authorities responsible for one branch decide to commence insolvency proceedings in relation to it, they must inform the banking supervisory authorities of all other member states where the bank is established of their decision and its possible practical effects, if possible before the reorganization measures are adopted or the winding up opened, otherwise immediately thereafter. The directive further invites the insolvency authorities of all member states hosting branches of an insolvent third country bank to coordinate their actions. But it does not go beyond these demands for the exchange of information and coordination of responses.

4. Some Open Questions of the European Bank Insolvency Regime

At such an early stage, it is not possible to evaluate properly the directive's actual impact. If a tentative prediction can nonetheless be made, the directive appears likely to improve the effectiveness of bank insolvency proceedings in the EU. Within its specific European context, it provides a rational and attractive response to the coordination problems, which usually plague the resolution of cross-border bank insolvencies. Its advantages include clear lines of national responsibility, speed, simplicity and reduced costs, and the

avoidance of lengthy litigation for the purpose of recognizing insolvency proceedings in other member states or participating in them.

The directive builds on a pre-existing pan-European harmonized system of on-going prudential supervision, based on the principle of home-country control; it further aligns closely the responsibilities for bank insolvency with those for deposit insurance, since the mandatory deposit insurance systems of the member states operate on a similar jurisdictional basis. The geographical limits of its applicability also coincide with those of the supervisory and deposit-insurance systems. It is less evident that the directive could serve as a viable model for rules of private international law governing the insolvency of banks with activities in the EU and a third country or in third countries only, since third countries are unlikely to share the above-mentioned characteristics (cf. Patrikis, 1999).

Even from a strictly European perspective, however, certain limitations of the new regime must be noted.

To start with, the directive defines reorganization measures and winding up proceedings by reference to their legal effects, not their trigger. A common European definition of bank insolvency is still lacking. Accordingly, the proceedings covered may kick in at very different levels of financial weakness or instability, depending on the law and timeliness of intervention of the home country. This does not ensure consistency in the handling of banking crises, which is a key objective, especially in the case of larger institutions.

Second, the directive does not take a stance on the critical issue of who is eligible to commence insolvency proceedings: only the regulators or the creditors as well? Nor does it set out common principles regarding the procedural rights of participation in the ensuing proceedings of creditors and/or other affected parties.

Third, the directive covers proceedings of both the administrative and the judicial type, without specifying what is the appropriate involvement of the banking supervisory authorities. In fact, its provisions reflect the prevailing confusion regarding the appropriate roles of supervisors and the non-supervisory judicial and/or administrative insolvency authorities, which may be in control of the collective proceedings in various European jurisdictions (see further Mayes, 2004).

Fourth, the sectoral fragmentation of European insolvency legislation hampers a consistent, effective and equitable resolution of insolvent multifunctional banking groups or financial conglomerates, comprising securities houses, insurance companies and/or nonfinancial entities alongside the

banking components. Beyond the divergent stance on secondary proceedings, other differences between the general Insolvency Regulation and the Winding Up Directive concern their respective position regarding certain categories of transactions and rights, their overlapping but not completely coextensive territorial applicability and the treatment of non-European institutions. The simultaneous operation of separate regimes for banks and other companies, with discrepant procedural structures and conflicts rules, may lead to uneven treatment of similar situations. More importantly, it raises the specter of lack of coordination of the official responses to insolvency, at both the cross-border and national levels.

Fifth, the European legislature remains silent on whether the fundamental policy objective of insolvency proceedings should be the maximization of creditors' recovery or the rehabilitation of the insolvent entity — although he appears to indirectly favor reorganization over liquidation.

Finally, although the general tenor of European legislation would appear to indicate a completely home-country-based bank resolution process, this may not be always the case. In particular, there is no clear allocation of decision-making responsibilities for informal restructuring and/or rescue operations, including by way of lending of last resort (Hadjiemmanuil, 2004). In particular, it remains unclear whether European central banks retain the power to engage in operations of the latter type; even if they are, it is not clear whether this is a national responsibility or an ECB one. This is not as much a case of "constructive ambiguity" regarding the availability of refinancing facilities as one of destructive ambiguity regarding the legality of, and responsibility for, the relevant operations. In this respect at least, the current European situation has not moved far beyond the muddled generalities of the original Basel Concordat.

References

Baxter, Thomas C., Joyce M. Hansen, and Joseph H. Sommer, 2004, "Two cheers for territoriality: An essay on international bank insolvency law," *American Bankruptcy Law Journal*, Vol. 78, pp. 57–91.

Basel Committee on Banking Regulations and Supervisory Practices, 1975, "Report to the governors on the supervision of banks' foreign establishments," Basel, report, September 26.

Basel Committee on Banking Supervision, 2004, "International convergence of capital measurement and capital standards: A revised framework," Basel: Bank for International Settlements, report, June.

Basel Committee on Banking Supervision, 2002, "Supervisory guidance on dealing with weak banks: Report of the Task Force on Dealing with Weak Banks," Basel: Bank for International Settlements, report, March.

———, 1992a, "Minimum standards for the supervision of international banking groups and their cross-border establishments," Basel, report, July.

———, 1992b, "The insolvency liquidation of an international bank," Basel, report, December.

———, 1988, "International convergence of capital measurement and capital standards," Basel, report, July.

———, 1983, "Principles for the supervision of banks' foreign establishments," (the "revised Concordat,") Basel, report, May.

Calzolari, Giacomo, and Gyongyi Loranth, 2003, "On the regulation of multinational banks," in *Antitrust, Regulation and Competition*, Mario Baldassarri and Luca Lambertini (eds.), Basingstoke: Palgrave Macmillan.

Campbell, Andrew, 2002, "Issues in cross-border bank insolvency: The European Community Directive on the Reorganization and Winding Up of Credit Institutions," paper presented at the International Monetary Fund Seminar on Current Developments in Monetary and Financial Law, Washington, DC, May 7–17.

Cercone, Roberto, 2004, "European Community Directive on Reorganization and Winding Up of Credit Institutions: Exceptions to the application of *lex concursus* (Title IV, Articles 20-27 and 30-32)," *European Business Law Review*, pp. 685–704.

Deguée, Jean-Pierre, 2004, "The Winding Up Directive finally establishes uniform private international law for banking insolvency proceedings," *European Business Law Review*, pp. 99–128.

Devos, Diego, 1999, "Specific cross-border problems regarding bank insolvencies and European harmonization efforts," in *International Bank Insolvencies: A Central Bank Perspective*, Mario Giovanoli and Gregor Heinrich (eds.), The Hague: Kluwer, pp. 311–326.

Group of Thirty, 1998, *International Insolvencies in the Financial Sector: A Study Group Report*, Washington, DC.

Hadjiemmanuil, Christos, 2004, "Bank resolution policy and the organization of bank insolvency proceedings: critical dilemmas," in *Who Pays for Bank Insolvency?*, David Mayes and Aarno Liuksila (eds.), Basingstoke: Palgrave Macmillan, pp. 272–330.

Hüpkes, Eva H.G., 2002, "Insolvency — Why a special regime for banks?," paper presented at the IMF Seminar on Current Developments in Monetary and Financial Law, Washington, DC, May 7–17.

———, 2000, *The Legal Aspects of Bank Insolvency: A Comparative Analysis of Western Europe, the United States and Canada*, The Hague: Kluwer.

Krimminger, Michael H., 2004, "Deposit insurance and bank insolvency in a changing world: Synergies and challenges," paper presented at the International Monetary Fund seminar on Current Developments in Monetary and Financial Law, Washington, DC, May 24–June 4.

Mayes, David G., 2004, "Who pays for bank insolvency?," *Journal of International Money and Finance*, Vol. 23, pp. 515–551.

Mayes, David G., Liisa Halme, and Aarno Liuksila, 2001, *Improving Banking Supervision*, Basingstoke: Palgrave.

Moss, Gabriel, Ian F. Fletcher, and Stuart Isaacs, 2002, *The EC Regulation on Insolvency Proceedings: A Commentary and Annotated Guide*, Oxford: Oxford University Press.

Nierop, Erwin, and Mikael Stenström, 2002, "Cross-border aspects of insolvency proceedings for credit institutions — A legal perspective," paper presented at the International Seminar on Legal and Regulatory Aspects of Financial Stability, Basel, January 21–23.

Omar, Paul J., 2004, "The emergence of a new European legal order in insolvency," *International Company and Commercial Law Review*, Vol. 15, pp. 262–270.

Patrikis, Ernest T., 1999, "Role and functions of authorities: Supervision, insolvency prevention, and liquidation," in *International Bank Insolvencies: A Central Bank Perspective*, Mario Giovanoli and Gregor Heinrich (eds.), The Hague: Kluwer, pp. 283–292.

Tsanidis, Vassileos, 2004, "Regulation 1346/2000 on Cross-Border Insolvency Proceedings: The universality or territoriality system," *Insolvency Intelligence*, Vol. 17, pp. 99–102.

Wessels, Bob, 2004, "EU Directive 2001/17 on Reorganization and Winding Up of Insurance Undertakings in Europe and its implementation in the Netherlands," *Insolvency Intelligence*, Vol. 17, pp. 129–136.

Westbrook, Jay Lawrence, 1997, "Universal participation in transnational bankruptcies," in *Making Commercial Law: Essays in Honour of Roy Goode*, Ross Cranston (ed.), Oxford: Clarendon Press, pp. 419–437.

World Bank, 2001, "Principles and guidelines for effective insolvency and creditor rights systems," Washington, DC, report, April.

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Comments on Financial Institution Resolution: Cross-Border Issues

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1. Introduction

Thirteen years after the liquidation of the Bank for Credit and Commerce International (BCCI), the High Court of Justice of England and Wales held on March 19, 2004, that the Bank of India was guilty of "knowingly participating in the carrying on of the business of BCCI SA and BCCI Overseas with intent to defraud the creditors of those companies or with a fraudulent purpose". Justice Patten found that the bank had embarked on a systematic and wide-scale fraud involving the manipulation of account balances to conceal losses incurred in the early 1980s and to maintain public confidence in the bank. The Bank of India was ordered to pay the BCCI $43.231 million in compensation. The knowledge of one manager at the Bank of India was sufficient to attribute knowledge to the bank itself for six transactions made between 1981 and 1986. Justice Patten ordered interest to be paid from the date of the BCCI's liquidation in 1991.[1]

This recent case law shows that the resolution of large and complex financial institutions (LCFIs) is time consuming and involves a number of commercial relationships as well as various jurisdictions and regulatory regimes. In that respect, bank insolvency attracts a great deal of attention from regulators and other public authorities because it involves legal conundrums, fraudulent activities, tough regulatory choices, and conflicting interests in a cross-border setting.

[1]Morris and others v. Bank of India (2004), EWHC 528 (Ch).

Why are regulators concerned by LCFI insolvency? In general, LCFI events of default may *spill over* to other participants and counterparties of the LCFI, and those spillovers may lead to *contagion* across markets and ultimately endanger the stability of the whole financial system, giving rise to what is termed a "systemic risk". As far as insolvency is concerned, it is difficult to resolve an LCFI in an orderly fashion, which gives rise to uncertainty across markets.

As LCFIs are increasingly doing business across borders and locating their assets in places outside their home regulator's jurisdiction, legal and regulatory coordination is becoming essential. Because there is a mismatch between regulatory cooperation and jurisdictional regimes, which may have extraterritorial effects, the international community has been discussing methods of bridging the gap between regulatory coordination and insolvency regimes following the report of the Group of Ten (G10) contact group on the legal and institutional underpinnings of the international financial system. Coordination should be based on the principles of speedy and efficient resolution and equitable treatment of creditors.[2]

This paper highlights the fact that there is no single set of arrangements for dealing with the cross-border insolvency of an LCFI. It discusses the exclusion of netting and collateral arrangements from the effects of insolvency. It then contends that systemically important functions need to be insulated in the event of an LCFI insolvency. The paper also raises the question of whether a managerial-based insolvency, that is, one initiated by the management of the bank, is appropriate for LCFIs. Finally, it suggests that central banks should always be involved in bank insolvency, irrespective of whether they are supervisors, and touches briefly upon the impact of bank insolvency on the financial architecture and society's responses to bank insolvency.

It should be noted that LCFI failures that involve fraudulent practices often reflect a failure to observe appropriate corporate governance arrangements. Although they do have a bearing on LCFI insolvency, corporate governance requirements are not considered in this paper.

[2]"Managing systemic banking crises," International Monetary Fund, occasional paper, No. 224-03, p. 9.

2. Coordination of International Insolvency

2.1. *Separate entity doctrine*

Countries applying the single entity doctrine (the United Kingdom, the United States for U.S. chartered banks, and Luxembourg, to name a few examples), which are obliged to include all foreign and domestic creditors in the estate of the insolvent bank, may be prevented from doing so by jurisdictions applying the separate entity doctrine or "ring-fencing". Those jurisdictions (which include the United States for U.S. branches of foreign banks[3]) use the assets of a given branch to satisfy any creditors of that corporation resulting from transactions with the branch in question or from other expenses related to the liquidation of that branch. The remaining assets are used in the liquidation of any other U.S. branches or offices of this foreign bank and after that any remaining assets are returned to the receiver in the home country.

Territoriality — the approach often associated with the separate entity doctrine — has long been considered obsolete. The United Nations Commission on International Trade Law (UNCITRAL) Legislative Guide on Insolvency (2004) recommends that in the case of insolvency proceedings commenced where the debtor has its centre of main interests, the insolvency law should specify that the estate include all assets of the debtor wherever located (Recommendation 36). It further recommends that where the insolvency law adopts a universal approach, as recommended by this guide, the law should also address the recognition of foreign proceedings as recommended by UNCITRAL Model Law on Cross-Border Insolvency.

Nevertheless, an effect of ring-fencing is that it can result in a substantial sum being paid to the home insolvency administrator. Neither approach is therefore inherently detrimental or favorable to foreign creditors, if that is what a home regulator is worried about.[4] Ring-fencing allows a foreign branch facing uncertainty to continue to operate in a somewhat restricted

[3]Thomas C. Baxter, Jr., Joyce M. Hansen, Joseph H. Sommer, 2004, "Two cheers for territoriality: An essay on international bank insolvency law," *The American Bankruptcy Law Journal,* Vol. 78, pp. 57–91.

[4]Bank for International Settlements, 1992, "The insolvency liquidation of a multinational bank," paper, available at www.bis.org.

mode. The ability to remain operational gives an economic advantage to the foreign bank, especially if the absence of ring-fencing would have meant that the branch's banking license had to be withdrawn, potentially precipitating the failure of the foreign bank as a whole.

European Union (EU) legislation has been inspired by the principles of unity, universality, and mutual recognition of authorities with respect to the winding up and reorganization of banks established in the EU. However, one could argue that the legalities of winding up a branch in the European Union of a *foreign* bank established in a third country outside the European Union would not necessarily have materially different results from the approach followed by jurisdictions ring-fencing local assets of foreign branches. Article 19 of Directive 2001/24/EC of the European Parliament and of the Council of April 4, 2001, on the reorganization and winding up of credit institutions (the winding up directive; WUD) provides that the competent authorities of the host member state must inform the other host member states in which a credit institution from a third country has set up branches, preferably *ex ante,* but in any case *ex post.* Community legislation does not impose similar obligations of EU authorities *vis-à-vis* the authorities of the third country in which the credit institution is established.

The WUD does not prevent separate liquidation or reorganization proceedings from being instituted against the branches in an EU member state of a credit institution established in a third country with branches in at least two EU member states. The EU authorities should in this case notify each other, preferably *ex ante* or at least *ex post,* while liquidators should coordinate their actions.[5] Obligations to notify the home country's authorities are not provided by the WUD but may arise from national law or regulatory schemes or from memoranda of understanding (MOUs) between a member state's competent authorities and the third country's authorities.

National insolvency law will in this case determine whether the EU authorities award the assets of a branch to local creditors or pass those assets to the liquidator in the third country. Article 19 WUD can be interpreted as a provision in line with principles found in the UNCITRAL Model Law on Cross-Border Insolvency, as regards branches of third countries' banks that are licensed to operate in an EU member state. That distinction however

[5]Andrew Campbell, 2004, "Issues in cross-border bank insolvency: The European Community directive on the reorganization and winding-up of credit institutions," p. 19.

means that banks established in the EU and EU branches of foreign banks could be treated differently.

In Germany, branches of financial as well as nonfinancial institutions from third countries may be subject to territorial insolvency proceedings brought by local creditors prior to the opening of main insolvency proceedings in that third country. Main foreign proceedings will be recognized automatically once they are opened.[6] If main insolvency proceedings are opened in a third country, secondary insolvency proceedings may be opened in Germany. The liquidator appointed by the German court is obliged to cooperate with and provide information to the foreign liquidator, who may participate in the creditors meeting and provide them with a plan. Remaining assets will be passed to the liquidator in the main proceedings in that third country.

2.2. *Single entity doctrine*

That being said, some qualification is necessary with regard to the European Union, given that its regulatory and legal schemes have been engaged in an extensive harmonization process over the past 30 years.

Currently, the scheme being developed in Europe provides for mutual recognition of competent (judicial and administrative) authorities and their decisions to open insolvency proceedings against the banks that they supervise, implying — and even requiring — cross-border coordination, *ex ante* if possible and *ex post* in any case. This development is possible because of the existence of a heavily harmonized system of banking supervision, a highly regulated banking regime and the harmonization of the protection of finality, netting and collateral arrangements in Europe.

In addition, Community legislation[7] recognizes the validity and enforceability of close-out netting and set-off under the contractually agreed

[6]Sections 354–358 of the "Gesetz zur Neuregelung des internationalen Insolvenzrechts" of March 13, 2003, (Fed. Gazette I, 345 et seq.) extend the scope of Council Regulation (EC) No 1346/2000 of May 29, 2000, on insolvency proceedings.

[7]Directive 98/26/EC of 19 May 1998 on settlement finality in payment and securities settlement systems, OJ L 166 11/6/1998, p. 45; Directive 2001/24/EC of 4 April 2001 on the reorganization and winding up of credit institutions, OJ L 125, 5/5/2001, p. 15; Directive 2002/47/EC of June 6, 2002, on financial collateral arrangements, OJ L 168, 27/6/2002, p. 43.

national jurisdiction, provided that the chosen law recognizes netting and set-off and its choice is not challenged (Articles 23, 25, and 26 WUD). In that respect, the Community model of legislation has become a jurisdictionally neutral system, honoring contracts according to their content, irrespective of whether they are governed by the law of an EU member state or that of a third country. This is a positive trend, which takes account of the particular conditions of legal harmonization that exist in Europe.

In the European Union, the PRIMA rule followed by Community legislation makes rights in securities subject to the law of the country where the relevant securities account or centralized deposit system is located.[8]

2.3. *No single set of insolvency arrangements*

No single set of insolvency arrangements is appropriate for all the banks within the various markets and regulatory schemes. What is important, however, is to achieve fair and equitable treatment of domestic and foreign creditors and effective cross-border regulatory cooperation. In this respect, the UNCITRAL Cross-Border Insolvency Model Law provides a good example of smoothing out the inconsistencies between the two systems (that is, territoriality and universality), which create problems when the two come together in the case of an international insolvency, by applying the principle of the recognition of foreign insolvency proceedings (annex III). The UNCITRAL insolvency guide,[9] although it does not apply to bank insolvency, could be viewed as another example because it discusses various policy goals and provides recommendations.

The International Federation of Insolvency Practitioners (INSOL International) published in 2000 a statement of principles for a global approach to multi-creditor workouts, containing eight principles for best practices for all non-judicial multi-creditor workouts. It is debatable to what extent those principles could serve as a basis for reaching a consensus among creditors of a LCFI in different countries in order to achieve the restructuring of an LCFI. These principles would not be suitable for liquidation proceedings.

[8]See article 24 of the Directive 2001/24/EC on the reorganization and winding up of credit institutions and article 9 of both the directive on settlement finality in payment and securities settlement systems and of the directive on financial collateral arrangements.

[9]United National Commission on International Trade Law (UNCITRAL), 2004, "Legislative guide on insolvency," available at www.uncitral.org.

2.4. *Exemptions contributing to an orderly resolution in the case of insolvency*

The validity and enforceability of netting and the finality of transfer orders in payment, clearing and settlement systems, as well as of collateral arrangements, render the parts of the bank insolvency proceedings related to the staying of payments and the ranking of claims irrelevant.[10] However, it has been acknowledged that there is a risk that unsecured creditors will be left with few assets in the bankruptcy estate to satisfy their claims.[11] Nevertheless, the netting effect may also work to the benefit of the bankruptcy estate and the other creditors.

3. Systemically Important Functions: Do They Deserve to Be Preserved in Bank Insolvency?

3.1. *Definition*

The definition of systemically relevant functions is an issue. It should be noted that considerable work is currently being carried out both in Europe and in the U.S. First, in the framework of the joint Working Group of the European System of Central Banks and Committee of European Securities Regulators (ESCB-CESR) which elaborated standards for securities clearing and settlement. Second, in the United States on the subject of operational reliability and the transfer of critical functions to a dormant bank. In that respect, the proposal made by Eva Hüpkes to insulate systemically relevant functions from disruptions is very relevant and important also in the case of an LCFI insolvency, which would be a more permanent failure.

As regards the definition of that term, the ESCB-CESR standards for securities clearing and settlement (September 2004) are relevant. These standards are based on the Committee on Payment and Settlement Systems

[10]Robert R. Bliss, 2003, "Bankruptcy law and large complex financial organizations: A primer," *Economic Perspectives*, Federal Reserve Bank of Chicago, First Quarter, p. 56. In a recent case law, provisions in a 1992 International Securities Dealers Association (ISDA) Master Agreement were upheld by the New South Wales Supreme Court (NSWSC) in Enron Australia v. TXU Electricity (2003) NSWSC 1169, available at www.lawlink.nsw.gov.au/sc/ under "judgments."

[11]G10 Contact Group on the Legal and Institutional Underpinnings of the International Financial System, 2002, "Insolvency arrangements and contract enforceability," p. 28, available at www.bis.org.

and International Organization of Securities Commissions (CPSS-IOSCO) recommendations for securities settlement systems (2001). Accordingly, work is currently carried out in relation to credit and liquidity risk controls with respect to significant custodians which manage significant arrangements for settling securities transactions. In that respect, follow-up work is planned, *inter alia*, to define criteria which may help regulators to identify significant custodians under Standard 9. One of the measures proposed in the ESCB-CESR standards is the full collateralization of the credit exposures of operators settling significant volumes of securities transactions.

Standards 1 (Legal framework), 5 (Securities lending), 6 (Central securities depositories — CSDs), 7 (Delivery versus payment — DVP), 8 (Timing of settlement finality), 9 (Risk controls in systemically important systems), 10 (Cash settlement assets), 11 (Operational reliability), 12 (Protection of customers' securities), 14 (Access), 15 (Efficiency), 16 (Communication procedures, messaging standards, and straight-through processing), and 17 (Transparency) apply to significant custodians or providers of securities services critical for clearing and settlement, entities providing securities clearing and settlement services, banks, or other securities service providers. At least 13 of the 19 standards could apply to individual entities which offer settlement services among other services as well as to entities which offer solely clearing and/or settlement services.

For systemic stability reasons, Standards 9 and 11 require that custodians settling significant volumes of securities operate without interruption. Operators of net settlement systems have to institute risk controls that as a minimum ensure timely settlement in the event that a participant with a considerable payment obligation is unable to settle.

3.2. *What should regulators look at?*

Similar notions regarding systemically important functions can be found in G10 publications, which use the term "quasi-systems".[12] Regulators should look at following elements:

- *Internalization.* Entities that settle or clear transactions of their customers across their books rather than via a payment, clearing, or settlement system. In this case, changes do not necessarily occur in the records of the payment or settlement system.

[12]Committee on Payment and Settlement Systems, 2003, "The role of central bank money in payment systems," Bank for International Settlements, p. 41.

- *Substantial value.* Entities that settle, on behalf of customers, a substantial amount (by value) of securities transactions or payments.
- *Number or type of customers.* Entities that have a certain type of client, usually other banks or professional investors.
- *Absence of alternatives.* There is no other entity that offers equivalent settlement services to market participants.

3.3. *Why protect those systemically critical functions?*

Several arguments speak in favor of protecting these functions:

- *Reduction of systemic risk.* Securities transactions are the backbone of financial systems and there should be legal certainty surrounding their treatment. Customers' assets should be segregated from the settlement provider's own assets. The transfer of securities should not be hindered at any time. This would help issuers and investors alike.
- *Reduction of settlement risk.* Risk-management measures address credit and liquidity risks. Settlement risks on account of the insolvency of a bank offering clearing and settlement services can be addressed by extra measures following or preceding the insolvency of the operator of clearing and settlement functions. In that respect, the proposal made by Eva Hüpkes would also extend the protection offered by risk management measures in the case of bank insolvency.
- *Securities in custody should be segregated.* In bank insolvency, there is a difference between deposits and custody of securities held separately on behalf of customers. Custody of securities is a function performed by banks outside their balance sheet. That could justify treating securities held on behalf of customers differently in the case of bank insolvency. While depositors may lose their cash that they have deposited with a bank above the threshold of the deposit guarantee scheme, securities that they hold with that bank can always be identified as customer assets in the case of bankruptcy provided that they are held separately from own funds. In the latter case, investment protection schemes will apply.
- *Cross-border coordination.* Eva Hüpkes suggested three measures: the replacement of LCFIs, dismemberment, and immunization. All those measures have to be supported by regulatory and oversight mechanisms, which call for the cross-border cooperation of all relevant authorities and central banks.

3.4. *A managerial-initiated LCFI insolvency?*

Bank insolvency has traditionally been regulatory-based, that is, initiated by regulators. Following changes in the trigger factors for bank insolvency, a research paper has also suggested that management should be allowed to initiate pre-packaged deals and thus combine that regulatory approach with a managerial-based insolvency.[13] How and whether that could work on a cross-border basis remains to be seen. The author does not consider the time to be right to approximate bank insolvency to general corporate insolvency in those countries that have a special bank insolvency regulation.

Such schemes would give managers an incentive to come up with expeditious and cheap plans, since literature suggests[14] that low bankruptcy costs and the swift resolution of assets are crucial in order to limit the systemwide impact of contagious default events. Managerial-based insolvency is not suitable for banks for several reasons. The bank's management has an incentive to delay the insolvency for as long as possible to save the reputation of the firm, to keep their job, and to avoid disclosing any irregularities. By contrast, in jurisdictions where management is liable in the event that it does not file for insolvency on time, management may be too eager to start the insolvency proceedings and do so while the bank is still viable.

Therefore, where LCFIs are concerned, it is sufficient for regulators to decide — on the basis of objective or flexible criteria — to open insolvency proceedings.

3.5. *The involvement of central banks*

It is evident that bank insolvency involves banking supervisors, courts, and deposit insurance agencies. In countries with a two-peak model, the supervision of banks is entrusted to a financial regulator. Central banks traditionally oversee payment and — according to more modern approaches — securities settlement systems and thus have an interest in the stability of the financial

[13]David A. Skeel, Jr., 1998, "The law and finance of bank and insurance insolvency regulation," working paper, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=10133.

[14]Helmut Elsinger, Alfred Lehar, and Martin Summer, 2003, "Risk assessment for banking systems," working paper, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=423985.

system. A question that arises is whether a system of international coordination should *a priori* include, in addition to supervisors, central banks.

There are several arguments why the involvement of central banks is warranted. First, central banks will ultimately be called upon as lenders of last resort.[15] Second, central banks are concerned with the stability of the financial system. In that capacity, central banks have general responsibility for overseeing payment and securities settlement systems whose failure — whether those systems take the form of a bank or not — could pose a threat to the stability of the financial system. Where those systems are banks, the supervisors will have the ultimate responsibility for investor protection and market discipline. However, central banks are the natural overseers of those "systemically relevant functions" and ensure systemic stability.

The Ferguson Report (2001)[16] acknowledged that the consolidation of banks and operators of payment and settlement services raises challenges for supervisors and overseers. Thus, new cooperative arrangements between banking supervisors and overseers, both domestically and cross-border, may be needed in order to identify and properly monitor the related risks.

The need for cross-border arrangements is more pronounced in the case of LCFIs because their failures may affect a number of markets in which they operate. The location of these markets may be different from the place of incorporation and from the location of their assets. The central banks of the affected markets in question should be involved in any regulatory arrangements for three reasons.

First, because those central banks may be called upon to ease liquidity problems of participants whose operability is affected by the LCFI's failure. Second, because substantial amounts of the assets of that country, which can be used to receive liquidity from the payment system of the relevant currency, may be held in the LCFI in question. And third, because those central banks are already involved in cross-border coordination arrangements on account of their role as overseers of payment and settlement systems in which the LCFI participates. The existing arrangements can thus be adapted to the particularities of the LCFI failure.

[15]Xavier Freixas, 1999, "Optimal bailout policy, conditionality, and constructive ambiguity," Universitat Pompeu Fabra, working paper, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=199054.
[16]Group of Ten, 2001, p. 323.

4. Effect on Financial Architecture and Society

4.1. *LCFI insolvency affects financial architecture*

Bank failures occurred throughout the 19th and 20th centuries with dramatic effects on the financial system and the history of some countries. Although those failures were domestic, the panic and shock that they generated had lasting effects on the international banking and central banking sectors. Those failures, with the subsequent buyouts and mergers of failed banks with sound institutions, changed the pattern of the banking system in those countries and created financial conglomerates which have lasted for a century and which still shape the financial landscape today.[17] Larger banks have emerged, other banks have vanished, and the structure of the banking system has changed considerably.[18] A study in 2002 suggested that deposit shocks resulting from bank failures lasted for five years.[19] In addition, bank failures shake people's trust in the financial system because a number of creditors lose their deposits and that affects the average person.[20]

4.2. *LCFI insolvency affects investors' behavior*

It would be interesting to look at how cross-border bank failures have changed the investment pattern of investors in a particular period. Further research would be necessary to find out whether and how bank failures have changed investors' preferences and investment strategies.

[17]For a comprehensive account of the most dramatic and extensive European banking crises, see Harold James, 2001, *The End of Globalization*, pp. 58–63.

[18]During the Asian financial crisis bank regulators forced mergers, which have not proved to be conducive to sounder banks (see Michael S. H. Shih, 2000, "Banking-sector crisis and mergers as a solution," National University of Singapore, working paper, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=244989).

[19]Joseph R. Mason, James W. Kolari, Ali Anari, 2002, "Bank asset liquidation and the propagation of the U.S. Great Depression," Wharton Financial Institutions Center, working paper, No. 35-02; David G. Mayes, 2004, "An approach to bank insolvency in transition and emerging economies," Bank of Finland, working paper, No. 4-04, p. 10.

[20]For an alternative theory on what causes panics, see Mark A. Carlson, 2002, "Causes of bank suspension in the panic of 1893," Board of Governors of the Federal Reserve System, working paper, No. 11-02.

4.3. *LCFI insolvency and art*

What the papers presented here have done is to capture the intriguing complexities of bank insolvency, which will continue to bewilder lawyers and regulators throughout the world, since legal and regulatory systems stem from diverse political choices. For those who think that bank insolvency is an introverted subject, here is some reassurance that it can bear in itself the seed of art.

Artist Mark Lombardi was inspired by the BCCI's extensive network of business relations and the various jurisdictions within which it operated and chose to depict them all in one of his famous "narrative structures". His work, called *BCCI, ICIC, & FAB (1996–2000)*, is currently on display at the Whitney Museum of American Art in New York. This pencil drawing has fascinated both professionals and visitors.

5. Conclusion

There is no single set of insolvency arrangements for LCFIs. There are currently no legal requirements or coordination arrangements in place, other than bilateral MOUs among banking supervisors or regulators.

There is a need for a standard as regards the cross-border coordination of overseers, banking supervisors, and securities regulators. The Report of the Committee on Interbank netting schemes of the Central Banks of the Group of Ten countries the (Lamfalussy report, 1990) has mandated supervisory committees and fostered information exchange among regulators with primary responsibility and other relevant central banks and supervisory authorities. Furthermore, the Ferguson Report and the new Basel II Accord provide guidance in this respect. These arrangements have to be reflected in bank insolvency regimes.

Systemically relevant functions need to be protected by various measures. The CPSS-IOSCO recommendations and the ESCB-CESR standards offer guidance where this is concerned.

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Key Policy Challenges in Financial Institution Resolution: Additional Complexities

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Multiple Regulators and Resolutions

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1. Multiple Regulators within a Single Country

When the new Labor government came into office in the U.K. in 1997, it removed the function of supervising banks from the Bank of England and transferred it to the newly formed Financial Services Authority (FSA), a body which was to supervise virtually all financial institutions. That meant that crisis management had, from then on, to be handled jointly, rather than having a single central locus for decision-making. The FSA would have the most intimate knowledge about the condition of any bank in difficulties, but it had no access to money, to provide lender of last resort, the LOLR (emergency liquidity assistance), to a bank in difficulty. The Bank could provide LOLR assistance, but was now to be at arms-length from each individual bank.

But the Bank is a public sector institution, and so any moneys that it may put at risk of loss in emergency lending are not those of private sector shareholders, but of taxpayers. Ever since Nigel Lawson, the then Chancellor of the Exchequer, had complained strongly about the commitment of (quite a small amount of) Bank funds in 1984 in the course of handling the Johnson Matthey Bank (JMB) collapse and rescue without his prior consent,[1] it had become clear, de facto if not yet de jure, that the Bank could not undertake any lending activity, or give commitments or guarantees, for example in the context of LOLR operations, where there was any significant risk of loss without prior notification to, and approval from, the political authorities in the Treasury.

[1]Lawson (1992), pp. 402–409.

So, shortly after the structural break, when the FSA was founded, a memorandum of understanding (MOU) was agreed between these three parties (Bank, FSA, and Treasury) about how crises were to be handled. It ran roughly as follows: Any bank which found itself in difficulties should contact the FSA, (n.b. *not* the Bank), since the FSA has the role of providing the connection between the individual financial institutions and the authorities. Whilst the FSA would in any case inform the Bank, it could decide whether, or not, the closure of the bank in difficulties might have systemic implications. If the FSA was certain that there could be no such implications — and it would need to be very certain on that point, since *systemic* stability remained the responsibility of the Bank — it could proceed to seek a purchaser for the bank in difficulties, or to close it, though the FSA could not of itself provide any emergency funding.

If there was any question of there being systemic implications, the Bank would be called in to decide on how best to handle the problem from an overall systemic viewpoint. While the politicians and the Treasury (HMT) would be notified, in theory the Bank and FSA could proceed with any course of action that did not commit to any risk of the usage (loss) of taxpayers (Bank) funds on their own responsibility. If, however, there was any such risk, then HMT would also have to approve. Thus crisis management was now to be run in a tripartite way.

In practice, the immediate effect of the MOU was to establish a Tripartite Standing Committee (TSC), involving senior officials in the three organizations, Bank, FSA, and HMT. It meets on a regular monthly basis to review emerging risks and potential threats to financial stability. This is partly so that the relevant officials can get to know each other, (to overcome the "who do I telephone in a crisis" question), and partly so they can try to be forewarned and prepared in advance for crises.

This prior description of crisis management perhaps suggested a sequential approach, with the FSA first deliberating on its own what to do, then bringing in the Bank, and finally these two bodies approaching HMT with a joint proposal. Whilst there may be circumstances in which such a chain of events could occur, in the more usual cases of a crisis unfolding, the procedure is much more likely to be short-circuited. When news of a crisis may break, (and if the news arrived via some market event, rather than an application by a bank to the FSA, the Bank might get to hear of it first), the TSC would be immediately called. The FSA would present evidence, orally or on paper, on the condition of the bank(s) involved, the

Bank would comment on the systemic implications of any proposed course of action to handle the crisis, and HMT would need to get the politicians' agreement to any course of action that might require the use (loss) of public funds.

Thus crisis management is now to be managed by a committee rather than by the Bank of England as the main central decision-maker. That contrast, between a single locus for decision-making and the new committee system, is, however, somewhat exaggerated in reality. The Bank of England's freedom of individual, sole maneuver has always been limited, both by its ability to absorb losses in the course of bank rescues and by occasional limitations in information. In order to remedy both shortcomings the Bank historically looked to the commercial banks for help.

The Fringe, or Secondary, Banking Crisis, 1973–1975, (see Reid, 1982) was a typical example. At that time the Bank undertook little direct supervision of the banking system (Goodhart, 2004a) and knew less about these smaller, secondary banks than the large London clearing banks, who cleared those banks' payments and in which the secondary banks held correspondent balances. So the Bank asked the London clearing banks to distinguish between those of its correspondent secondary banks which were clearly insolvent and those which would become solvent (under normal market conditions). It then formed a "lifeboat" to support those deemed likely to be solvent, with a sizable proportion of the emergency loans coming from the secondary bank's clearing bank, plus negotiated shares in each case from the Bank and the other clearing banks. Another case is the first Barings crisis (1890 model), when, having persuaded itself and the main commercial banks that Barings was solvent and would survive, the vast majority of the guarantees that were provided to support Barings came from the other commercial banks.

Thus, historically, much crisis management was done by the central bank playing the role of lead manager, or facilitator, in a committee of commercial banks, whilst putting up little, or occasionally none, of the funds itself. Two similar examples in U.S. history are Long-Term Capital Management, and in 1907 when J. P. Morgan managed the use of support funds, which in this latter case mainly came from the U.S. Treasury (Wicker, 2000). But, in the case of the U.K., and in other countries where foreign banks now play a large role, that approach, whereby the central bank seeks help from a committee of major private banks, has become more problematical. Returning to the Johnson Matthey collapse (1984), the Bank turned

to its usual stratagem of encouraging the commercial banks in London to "volunteer" to contribute to support the bank in trouble. But now the large, incoming U.S. banks refused to play, citing legal problems in the U.S. if they were perceived as using shareholder funds for extraneous purposes. If the U.S. banks would not contribute to the Bank's begging bowl, it was only amour propre for the other foreign banks to refuse too. Eventually the British clearing banks acceded to the Bank's requests, but only grudgingly and, it was clear, "for the last time".

In any case the quantum of available support from the commercial banking sector was always limited; indeed the London clearing banks found themselves after a time unable, or unwilling, to contribute further to the lifeboat in 1974–1975. When a really *big* crisis blew up, the Bank would always have to go to the government for help, either through emergency changes in the law, for example, suspension of convertibility 1797, suspensions of the Bank of England (1844) Act in 1847, 1857, and (promised, but not needed) 1866 (Acres, 1931), or for direct financial support; August 1914 is perhaps the best example of this latter, (Seabourne, 1986).

With "voluntary" support in crises from the private sector tending to dry up, partially as a consequence of globalization, (and also of the rather narrow, aggressively competitive approach of some U.S. banks), the Bank of England was forced into greater reliance on the Treasury and taxpayers for handling those crises deemed to be systemic. Be that as it may, the Bank of England did not historically have the power or the ability to resolve (large-scale) crises on its own. The concept of the Governor of the Bank single-handedly, and ex cathedra, resolving such desperate times on his own always needed to be qualified.

Even so, the Governor, and the Bank, was undoubtedly the leading player, with the responsibility for devising the overall campaign, even if the private sector banks and the government had important walk-on roles, and could accept or refuse their own roles, and sometimes veto the Bank's plan as a whole. Now the plan of defense is to be agreed by a committee, where each member has a potential veto over the use of emergency liquidity assistance, or LOLR.

Does that matter? As we have all been told, a camel is a horse designed by a committee. Often there is a need for speed in handling crises. What would happen, for example, if a crisis was to occur in the middle of a political crisis, or when a government had just been defeated in an election, but before a new government had been installed? Could HMT always get a

political response to a proposed rescue ploy; if there was no such response forthcoming, would HMT or the Bank feel able to go ahead nonetheless?

We do not know the answers to such questions in part because no such crisis event has, as far as I know, occurred since the TSC was established in 1997. The TSC may have met in the aftermath of 9/11, even though most of the international consequentials were handled elsewhere. Apart from that, there is no public report or evidence of the TSC having ever met in crisis mode from its inception up till now.

There is now a continuing trend to separate supervision from the remaining central banking functions and to allocate it to a distinct, specialized — Financial Services Authority — or, as in Australia, to several separate bodies; the foundation of the China Banking Regulatory Commission (CBRC) being the latest example. See on all this Goodhart (2000). So this account of events in the U.K. may have some wider relevance. Moreover, in many other countries the supervisory function has long been partly, or wholly, separated from the central bank function. In some cases, notably in North America, both in the U.S. and Canada, an official institution charged with oversight of checking the conditions of the main banks was already in existence before their central bank was set up, the Office of the Comptroller of the Currency (OCC) in the U.S. and the Office of the Inspector General of Banks in Canada. Furthermore, in many European countries, such as Germany, France, and the Scandinavian countries, the supervisory authority has been partly, or wholly, separated from the central bank.

In the U.S. there have been eloquent arguments that the central bank needs some "hands-on" supervisory experience of its own in order to help it deal with both its crisis-handling functions and even its macromonetary management, see Greenspan (1997, 2000) and Peek, Rosengren, and Tootell (1998, 1999)[2]. Such arguments would no doubt be echoed by those European central banks holding on to their supervisory functions (for example, Italy, Spain), especially now that their macromonetary functions have been swallowed up by the European Central Bank (ECB). Nevertheless there is relatively little empirical evidence to suggest that there have been systematic differences in the efficiency, or success, of crisis management between countries, depending on whether banking supervision was wholly, partly, or not at all separated from the central bank.[3] In any case crisis events

[2]The arguments in Peek *et al.* (1998) were, however, contradicted by Feldman *et al.* (2002).
[3]Using a large cross-country data set, based on a World Bank Survey, see Barth *et al.* (2001), Barth *et al.* (2001, 2002), have now made a start on such an exercise.

are fortunately so rare that it is quite difficult to test any such hypothesis empirically. Certainly when such separation occurs, the institution that has to handle the resulting crisis may often criticize the functional regulator for not having spotted, or defused, the crisis earlier. (For example, in the case of the two largest recent losses sustained by the U.S. deposit insurance funds — First National Bank of Keystone in September 1999 and Superior Bank, FSB in July 2001) — the Federal Deposit Insurance Corporation (FDIC) felt that its ability to make its own assessments of the risks to the funds from large institutions had been impeded, at least initially, by the primary regulator[4]). That, however, tells both ways. If the supervisory function is held within the central bank, any bank failure is likely to cause collateral reputational damage to the central bank, as the Bank of England experienced not only with JMB and Barings but also the, seemingly never-ending, saga of Bank of Credit and Commerce International (BCCI).

One concern in this respect that I have had myself is that the ethos, and culture, of a specialized supervisory authority is likely to differ from that of a central bank, with the former tending to concentrate on legal and accounting professionals and issues, whereas the latter has greater economic expertise and focus, see Goodhart, Schoenmaker, and Dasgupta (2002). While such differences in culture almost certainly exist, the next question is whether they matter greatly. Our worry was that the legalistic ethos of a separate supervisory authority might make them concentrate attention on customer protection (asymmetric information) issues, and perhaps take their eye off the ball on macroeconomic risk, concentrations of (contagious) risk and systemic issues. Even if that was partly the case, so long as the separate supervisor both obtained, and shared, the information sought, and needed, by the central bank, there should be no wider problem. What is necessary is for there to be sufficient coordination and information sharing between the separate supervisor and the central bank. While one does hear some suggestions and the occasional anecdote that information availability to the central bank deteriorates after separation, it is rare to find any attested, or published, examples of that. As noted earlier, there is no good evidence yet to show any systematic differences in the efficiency of crisis management

[4]As a result of such incidents, the circumstances under which the FDIC exercises its special examination authority granted under the 1950 Federal Deposit Insurance Act were clarified through an agreement with other domestic functional regulators in January 2002 and FDIC examiners are now based in eight large insured institutions representing over 40 percent of the industry's assets.

within a country depending on the extent of such separation between the supervisory agency and the central bank.

One major difference between the U.S. and most other countries lies in the much greater role of the FDIC in crisis management in the U.S. By comparison the Deposit Protection Fund plays no public policy role whatsoever in the U.K., largely acting as a post office, mailing out checks to depositors in failed banks and seeking any necessary funding top-ups from member banks (plus probable ultimate government support if real disaster struck the banks. It is not in the rules, but I believe that this is what actually would happen, as occurred in Finland in 1992–1993). In any case depositor insurance in the U.K. and European Union (EU) is capped, and involves some co-insurance, (that is, payouts of less than 100 percent). When a bank fails in the U.K., the FSA (or any creditor) would apply to the courts to appoint a receiver, if liquidation is certain, or an administrator if there is some hope of keeping the bank in operation, for example, in an arranged merger/purchase by another bank. In contrast, when the licensing authority in the U.S., the OCC for national banks, the state authorities for the state banks, revokes the original bank charter, that bank is then put into the hands of the FDIC to handle the situation.

When a bank gets into trouble, the news is likely to spread, and it will lose liquidity in the interbank market. In so far as the bank has high quality liquid assets, it can raise cash by selling them or using them as collateral against borrowing, for example, repos. Whether, in the U.S., it uses its high quality collateral to borrow from the Fed at the discount window or from the money markets depends on the relative costs and reputational (and other non-price) costs and effects of so doing. But so long as discount window borrowing is fully collateralized by high quality assets, it is in some important respects not really last resort lending at all, since it is just a very close substitute to using those same assets for raising funds in private sector markets.

An interesting feature of the U.S. system has been that true last resort, emergency liquidity assistance, to U.S. banks in severe difficulties was provided, between 1982 and 1992, by the FDIC in the form of open bank assistance, (rather than by the Fed). During these years they provided 141 banks with $11,630,356,000, of which $6,200,062,000 was recovered, and $5,430,080,000 lost. This was a high loss rate. The sums provided, and the losses, were even larger in the case of the thrifts, the savings and loans institutions, and the Federal Savings and Loan Insurance Corporation, which effectively became bankrupt.

There were doubts whether the expenditure of such funds, which were ultimately backed by the taxpayer, to save failing banks was efficient or worthwhile. Risks of contagion were often exaggerated, (Kaufman, 1987, 1994, 1995a, b, 1996, 2000a, b; Kaufman and Scott, 2003), and the regulators, including the FDIC, might be under pressure to keep banks open when this was not necessarily the most (least) cost efficient process. It was in this context that the FDIC Improvement Act (FDICIA) was passed in 1991.

Since that date purchase and deposit assumption has been much the most preferred resolution technique. The Act's main provision affecting the resolution process[5] included the least cost test. Under this test, any resolution must be less costly than a liquidation. Prior to FDICIA, the FDIC could use any technique less costly than a deposit payoff, but not necessarily the cheapest of these alternatives. The earlier "essential" criterion had been often invoked when dealing with a failing institution whose services were considered essential to the community. The provision is intended to prevent the FDIC from providing support for non-insured deposits and other creditors. It tends to discourage whole bank solutions where, as an alternative, the FDIC sees the possibility of maximizing the premium paid for deposit franchises by parceling out the bank to different acquirers. In determining least cost, the FDIC is required to evaluate alternative structures on the net present value basis using a realistic discount rate.

Post-FDICIA, the only exception permitted to a least cost solution is where a finding has been made that the problem is "systemic", that is, where the application of the FDIC's least cost mandate would lead to "serious adverse effects on economic conditions or financial stability". Such a finding requires the support of a two-thirds majority of both the FDIC and the Federal Reserve boards and the consent of the U.S. Treasury Secretary after he/she has consulted the U.S. President. Note that the OCC, despite often being the functional regulator, has no formal role in this exercise. Nevertheless, the OCC is an arm of the U.S. Treasury, and the Comptroller would presumably have a chance and the ability to submit his/her own comments and report to the Secretary of the Treasury.

Note the similarities between the procedures established in the U.K. and in the U.S. In both cases the supervisors, the central bank, and the politicians at the Treasury, all have to agree together that a rescue is needed for systemic

[5]The Act also included provisions introducing risk-based deposit insurance premia, measures to increase the FDIC's borrowing authority for the Bank Insurance Fund (BIF) from $5 billion to $30 billion, stronger enforcement powers in dealing with banks, and restrictions on the bidding for brokered deposits by banks in difficulty.

reasons; all three parties have an effective negative veto, (though probably the central bank and the politicians could in effect overrule the FSA/FDIC if push really came to shove; but the likelihood of the politicians/central banks wanting a rescue against the best advice of the FSA/FDIC seems remote). Again in both cases no call for any systemic rescue has yet been made, since FDICIA in 1991 or the establishment of the TSC in 1997. There is, therefore, no experience of how the process might work, or not, in a crisis. Once a situation had been agreed to be systemic, it would, presumably, be for the central bank in each case to take the lead in managing the crisis, but even that might depend on the personalities, experience and self-confidence of the various officials involved.

Be that as it may, the growing trend towards separation between banking supervisory agencies and central banks means that some (formal) mechanisms for having them coordinate crisis management will be required. Similarly the experience of the severe fiscal burden of repairing a banking collapse, (for a reckoning of such costs, see, amongst others, Bordo *et al.*, 2001; Caprio and Klingebiel, 1996, 1999; Hoggarth *et al.*, 2001; and Lindgren *et al.*, 1996), will mean that the Ministry of Finance (MoF)/Treasury and the relevant minister(s) will also want and need to be consulted about the conduct of crisis management. So, some kind of tripartite mechanism, involving the supervisor(s), the central bank and the MoF/HMT, plus politicians, seems likely to emerge, whether on a formal, or an informal, basis. Nevertheless such committee-type mechanisms remain generally untested. Economic conditions have remained comparatively stable and benign over the last decade, and, while there have been, and indeed remain, threats to financial stability, these have not, so far, generally crystallized into systemic banking crises in Western Europe and U.S.

Japan has had a less happy experience. In their case the FSA, the Bank of Japan (BoJ), the MoF, and the politicians have all been involved in trying to handle their banking problems, but the mechanisms for coordination and cooperation have seemed somewhat ad hoc, and less than ideal either in formulation or operation. Relationships between bureaucracies sometimes appear, to an outsider, to be less than fully cooperative. There is, I believe, a very high level committee of the BOJ, JFSA, and the Prime Minister's office[6], but little regular contact between the BoJ and Japan's

[6]The Financial System Management Council, called into action whenever the Prime Minister envisages a serious threat to financial stability. It did meet to consider how to handle the Resona Bank crisis in May 2003 and the Ashikaga Bank nationalization in December, 2003.

FSA at working level. Indeed anecdotal reports suggest that requests for information, etc., have to go formally through the top of each institution.

If an appropriate committee structure is set up in advance, there seems no fundamental reason why crisis management *within each country* should not be effectively managed. We shall see.

Of course, it is best if banks in trouble can be reorganized, and new management established, before losses are suffered and economic capital exhausted, see Mayes and Liuksila (2003). One problem, however, with requiring early closure, for this purpose, is that the managers and private shareholders have a legal right to continue so long as they have not infringed any law. An enforced early closure/reorganization/removal of managers imposed by the authorities is likely to be met by a law suit against them, for example against the central bank, unless a "smoking gun" evidence of illegal practice, for example, continuing to run an insolvent business, can be clearly proven in court. Indeed the window of opportunity between closing a bank so early that the owners may sue and so late that the depositors may sue may have become vanishingly small. What is then needed is a legal mandate to initiate early closure before a bank has exhausted its capital.

As Krimminger (2004) puts it, "The laws must have clear criteria for initiating insolvency proceedings. This is particularly crucial in banking insolvencies where otherwise insolvent banks may be able to continue indefinitely by raising funds from depositors and act as a drag or diversion of economic capital. Clear, mandatory criteria permit prompt and decisive action before the bank's equity is exhausted. The criteria should be mandatory to require supervisory action as capital or other indicia of institutional soundness erode. In effect, mandatory action requirements create the supervisory discipline that augments market discipline". So the application of prompt corrective action in countries outside the U.S. would require such countries, in most cases, to introduce new legislation modeled on the U.S. FDICIA. This is not currently under consideration, at least not in the U.K.

2. Crises with International Complications Involving Regulators in Several Countries

A crisis will often, perhaps usually, involve financial losses, often severe. Even within a single country working out a decision how these might be allocated among shareholders, other creditors (often other banks), depositors, taxpayers, and other private sector (financial) bodies is politically and

presentationally difficult. In the Japanese case there was some unwillingness to grasp this nettle, which added to delay and, probably, to overall cost.

The problem is, of course, far worse when it involves burden sharing between countries, where these countries will not only have quite different objectives (that is, minimize their own loss), but also differences in legal arrangements.

Moreover the problems of introducing prompt corrective action, that is, of reorganizing a bank and changing the management before the bank is clearly bankrupt, will tend to become much worse when dealing with an international group with cross-border subsidiaries. The problems of the bank may be localized, but the reorganization would presumably affect the bank as a whole. Moreover the head office and subsidiaries will be regulated under differing national legal systems.[7] What is legal in one jurisdiction may not be so in another. David Mayes (2004), especially in section 2.1 on "Cross-border complications", sets out the difficulties nicely. These have also been discussed at some length in the preceding session of this conference.

As Krimminger (2004) points out, "a significant complicating factor is that the national legal rules and policy choices that govern the resolution of international financial institutions may conflict and, at a minimum, may preclude effective action at the time of insolvency. There are several inter-related issues. First, there is no international insolvency standard for banks or other financial institutions. While it may be appropriate that different nations — with different economic and cultural histories — have adopted varying laws and policy choices to govern domestic financial insolvencies, it is essential that the basic legal mechanisms applicable to international linkages permit effective action to mitigate contagion effects around the globe. Second, current laws around the globe do not adequately address the

[7]The problem has been addressed within the EU by its insolvency regulations representing new, statutory efforts to create a common "universal" approach to cross-border insolvencies within a unifying political entity. The resolution of failed banks is addressed by EC Directive 2001/24/EC of April 4, 2001 on the reorganisation and winding up of credit institutions. In short, the EU's Insolvency Regulation seeks to establish an EU-wide insolvency process providing for non-discrimination and equal treatment of creditors, recognition of other EU insolvency proceedings, and cooperation between insolvency authorities as an overlay on national insolvency law. "For insolvencies among EU members, the Insolvency Regulation embodies the universal approach by treating the entire bank and its branches as a single entity subject to resolution under the law of the 'home Member state'. Even within the EU there remains the possibility for conflict because countries can, and have, exercised the option to opt out of the Insolvency Regulation," Krimminger (2004).

complexities created by international holding company structures. These complex structures certainly create difficulties in regulatory coordination under normal conditions. During a period of financial instability, the differing regulatory jurisdictions within a nation and between nations create even more difficult challenges in pre-failure coordination. International supervisors are taking steps to improve understanding and coordination before insolvency. However, if insolvency occurs, the different legal rules and policies that apply to banking, insurance, and securities components of a holding company structure could impair the ability to respond effectively to prevent cross-border crises. Current insolvency laws may not provide the level of flexibility available to regulators once the actual insolvency occurs. Third, in a world of 24/7 financial operations and markets, the many legal rules that are based on the pace of the nineteenth century or even twentieth century may not be up to the task. It is essential that insolvency rules give decision-makers the flexibility and authority to take action in "real time" to avoid compounding the effect of a single large insolvency through the linkages between markets and payments systems."

The nature of the problems will differ somewhat depending on whether the entity of the foreign-owned bank in the host country is a branch of the main bank, or a separately capitalized subsidiary. In the case of the branch this is an integral component of the main bank, in principle like any other (domestic) branch, so that asset and liability management, and official supervision for capital adequacy, large exposures, connected lending, concentration of lending, etc., will be undertaken in a consolidated fashion respectively by the home bank and by the home bank's supervisor.

Two areas of concern, at least, nevertheless remain in the case of the treatment of host country branches. The first relates to deposit insurance. There is sometimes a question of which deposits will be insured, and to what extent, by the host country in foreign bank branches, and what assets may be available to the host country, in case of closure of the main bank, to meet such insurance claims. Taking this latter question first, if the home country deals with a bankruptcy/liquidation on a single entity basis, so that all depositors are paid on a pari passu basis wherever located, then there is no problem, but if the home country runs a "ring-fencing" system as does U.S. and Australia, then a host country may find itself suffering what will seem an undue insurance pay-out. One solution may be to require any large-sized branch to become a subsidiary, so that the host country can more easily require the subsidiary to maintain a sufficient ratio of local assets to

local deposits. Again if the host country deposit insurance is less generous than the home country's arrangements, there may be some unhappiness among local depositors in the case of a failure. A depositor with a U.S. bank office in London, or elsewhere in the EU, would rank behind all depositors, (whatever their nationality or domicile), who had placed such deposits in branches located in the U.S. for recovering funds with the help of the FDIC, and could only rely on the much more limited, (capped and co-insured) U.K. deposit insurance fund. Given the absence of a collapse of any large international retail bank, at least since BCCI in 1991, (which was, fortunately, atypical in many respects), there is probably little customer appreciation of the differences between, and limits on, deposit insurance protection in differing circumstances, for example, in home as compared with foreign branches of the same bank, and, in some cases, with respect to the currency denomination of the deposit.

The second issue concerns liquidity. In order to remain in business, a bank has to honor the convertibility requirement, that is, to be able and prepared to pay out cash on demand to those with demand deposits or time deposits becoming due, (though sometimes a bank can reasonably blame practical transportation problems for a short-term failure to meet this obligation). Within a single banking enterprise, liquidity management will generally be centralized, and access to cash distributed around the country by Head Office. One problem with a branch of a foreign bank is that it will often be open when its head-quarters, and its home central bank, is shut either because of time zone differences or because of different national holidays. If the branch should run into liquidity problems in such cases, it may be difficult, perhaps impossible, to contact the relevant officials either at the head-quarters of the bank concerned, or at the home central bank, and, if and when contacted, such officials may not be able to do much to rectify the situation, at a time when all markets are shut in the home country. However, in several cases in the past, whenever a real potential crisis did blow up, the relevant home central bank officials were roused, and were generally able to respond satisfactorily.

Perhaps a more worrying case is when a banking entity in the U.K. may not have assured access to full liquidity support from its home central bank. This may be because the institution with a bank branch in the U.K. does not come under the umbrella of its home central bank. The U.S. investment houses with their banking activities in London may come into this category. So the host central bank may be put in the difficult position of

either lending to the foreign branch, possibly in foreign currency, possibly against limited, or low quality collateral, or of requiring the (temporary) closure of the branch with all the reputational (and legal?) implications that that might bring with it. Under such circumstances a host country's central bank would feel considerably more comfortable if every foreign branch maintained dedicated liquid assets sufficient to meet two days abnormal withdrawals; the two days requirement allows for one day of holiday in the home country and one day for the time zone difference. At present there is no international agreement on the maintenance of liquidity in foreign bank branches, though it is recognized that host countries do have the right to impose liquidity requirements on foreign bank branches. This subject may be reviewed in international fora in due course.

In some respects the host country prudential authorities will feel more in control when the foreign bank establishes a subsidiary, rather than just a branch. A subsidiary becomes a legally separate entity with its own capital, and subject to the supervision and full regulatory requirements of the host country. A problem, however, is that the formal legal distinctions and separation are not matched by a similar economic separation. For example the home — headquarters — bank may put pressure on the subsidiary bank to take an action, such as a transfer of assets, which will be to the home — main — bank's benefit, but may be detrimental to the conditions of the host subsidiary, and potentially to the welfare of the host authorities and taxpayers, whereas the reverse is unlikely ever to occur.

Let us assume two countries, A and B, where a bank headquartered in A has a subsidiary in B. Assume that the B subsidiary is profitable, but that the headquarters in A, perhaps at the behest of the authorities there, transfers much of the subsidiary's profits and assets to prop up the main bank. Moreover, the bankruptcy laws in A might ring-fence assets in A so that A depositors were paid off before B depositors got a look-in. Whether on purpose, or not, in a globalized financial system losses occurring in a bank in one country could be effectively passed through to the depositors or to the fiscal authorities in another country.

The worst problems, however, are likely to occur over problems connected with burden sharing in the event of any attempted rescue and recapitalization.

Assume that a crisis arises in a bank with subsidiaries in two countries, and headquartered in a third, because loans made in one of the two subsidiaries go bad. Let me take a numerical example, with headquarters

Table 1. Division of bank and subsidiaries' assets and liabilities in a crisis

	A	B	C	Sum
Assets	120	110	40	270
Deposit Liabilities	100	100	100	300

in country A and subsidiaries in B and C. Loans made by C become non-performing, so that the supposed local assets and deposits are divided as shown in Table 1. Although in the bank as a whole liabilities exceed assets, the deficiency is, in this example, concentrated in subsidiary C. So, the first question is whether the parent bank can just walk away from this subsidiary and leave the host country, and its deposit insurance fund (if any), to pick up the bits. The ability of the parent to distance itself from problems in the subsidiary may depend on circumstances. For example, were losses in the subsidiary caused by local factors, for example, government interference (as in Argentina), over which the parent bank could have had no control, or was the loss caused by managerial failures which the parent bank should have prevented, for example, Barings in Singapore, Allied Irish Bank in the U.S.? Again, it is easier for a parent to walk away from a subsidiary in dire straits if the name of the subsidiary is distinct from that of the parent. Particularly if the name is the same, and if the key operational decisions have been taken at parental headquarters, reputational effects make it hard for a parent bank just to cast a subsidiary adrift.

Assuming that the supervisors in A choose to liquidate the headquarter bank, can the B supervisors keep the subsidiary going in business as a separate stand-alone bank? The experience of BCCI (Hong Kong) suggests that the indirect reputational effect, combined with lack of public information available at the time, would be too great. Assume that country A has a pari-passu bankruptcy law, so that if all assets and liabilities were put into a single pot and spread out equally, then each depositor would get paid 90 cents in the dollar, would not there be an enormous temptation on the politicians and supervisors in B to undertake some de facto ring-fencing of their own, by repaying local depositors in full from local assets, and then returning just ten assets to the head-office liquidator, so that depositors in A and C would get 85 cents in the dollar, not 90. Assume next that A has a ring-fencing bankruptcy procedure. A and B depositors get paid in full,

whereas C depositors would get just 70 cents in the dollar. The lesson for host countries is to be especially careful and conservative whenever the home country ring-fences.

The problems are likely to be even more difficult when there is a wish, by A country supervisors, to recapitalize the bank, and keep it as a going concern. There is no difficulty if A is prepared to face the fiscal burden all on its own, but A country politicians and taxpayers will surely demur. After all the failings arose in country C. Should not those who allowed that to happen, that is, the authorities in C, share in the costs of recapitalization? Moreover the benefits of banking intermediation are shared amongst the depositors, and local borrowers, in this case roughly equally, in A, B, and C. Why should not the cost of recapitalization also be shared out equally amongst the three countries? I rather doubt, however, whether the politicians and taxpayers of B would see the argument quite that way.

So recapitalization of a failing international bank with multiple subsidiaries would likely involve a politicized negotiating game with the whole panoply of potential threats, outside options and so on, as employed in game theory. There would, in the case pictured here, probably be multiple possible equilibria.

Even when the various issues involved in recapitalization are confined within a single country, as in Japan in the last decade, the question of resolving the distribution of burden among various potential classes, for example bank shareholders, bank creditors and debtors, and taxpayers, was so difficult and politically charged that decisive measures to contain the crisis and to return the banking system to health were unduly delayed. The complications of resolving an international distribution of burdens would be even worse.

I have wondered, for example in my Per Jacobsson lecture, on "Some new directions for financial stability" (Goodhart, 2004b), whether there might be a role for an impartial international arbiter, to expedite the negotiations. That arbiter could be the ECB in the European case, or the IMF, the World Bank, or the Bank for International Settlements more widely. My more practically experienced friends, however, have been skeptical. A country which does not like the arbiter's ruling may reject it, and would put forward plenty of reasons for so doing. Moreover all the countries involved would have to agree, ex ante, to accept the arbiter's ruling. Would such agreement be forthcoming? Nevertheless the possibility of some possible court of arbitration in such cases has some merit.

But negotiations, especially international negotiations, and arbitration take time, often a very long time. If a bank, or worse a banking system, has been seriously weakened by bad debts, time is of the essence. Can we afford to run a banking system which is so interpenetrated that the resolution of any banking crisis involves inter-national negotiations?

Such inter-country problems are, however, likely to become more frequent in the future than they have been in the past. Major financial crises have occurred most frequently in retail banking and thrift intermediaries, and these have been kept primarily national in ownership.

It would become much more difficult to maintain bank supervision, and crisis management at the national level were commercial banking systems to become much more fully integrated amongst countries, especially, but not only, in the EU. This latter integrationist outcome is what has been, in principle, the objective of the Lisbon process and of other European Community initiatives. Be that as it may, the (major) nation states within the EU have continued to drag their heels in allowing for international competition in their partly-protected domestic retail markets, including equity markets as well as retail banking. The recent take-over by Banco Santander Central Hispano of Abbey National in the U.K. may be interpreted either as the exception that proves the rule, or the first path-breaking step towards cross-border retail banking in the major EU countries.

There is a contrast in this respect between the bigger nations in the EU and the smaller countries. In the smaller countries there has been less disposition, perhaps because of less power, to maintain the purely national characteristics of domestic banking. In the Scandinavian countries the largest banking conglomerate, Nordea, now covers all the four countries, despite these countries' differing positions within the EU and Eurozone. This interpenetration was in some part accelerated by their financial crisis in the early 1990s. Again the Benelux countries have seen increasing bank interpenetration with Fortis and Dexia bank becoming international, rather than national. And recently there has been a takeover of a locally large Austrian domestic bank (Bank Austria) by a German bank (Hypovereinsbank).

The penetration and involvement of foreign banks is most marked in East European countries, both those now in the EU and some prospective candidate countries. So, in most East European countries, a large proportion, often a majority, of bank deposits and bank assets are placed with foreign-owned banks, in almost all cases, as already noted, in subsidiaries of such banks, not in branches. So there is a major division within the EU between

the large countries with a primarily nationally owned retail banking system and the smaller countries with a large proportion of foreign-owned banks in their banking system.

It is to be expected that the large countries will establish the structures and procedures within the EU that best suit themselves. With their banking systems remaining mostly domestically headquartered, (and political pressures for supporting national champions), and with any fiscal burdens from crisis management falling on national Treasuries, the big countries will persist in insisting on the maintenance of nationally controlled bank supervision, and on control over lender of last resort lending and crisis management. This was the gist of the letter on this subject issued by Chancellor Brown of the U.K. and the Finance Minister Eichel of Germany on the occasion of the Oviedo Ecofin meeting in April 2002. Such national control over supervision and crisis management suits the big countries in the EU. Despite the desire of some at the ECB for greater centralization, absent banking inter-penetration in the big countries and any federal fiscal competence, the wishes of the large nation states will prevail here.

Nevertheless the intended progress of structural change, especially, but not only, in the EU points towards greater cross-country integration of retail banks and other financial intermediaries. Moreover, certain groups of smaller countries in the EU, in Eastern Europe, Scandinavia, and, perhaps, Benelux, have already got to this juncture. Within the EU the problem could, *in principle*, be resolved by centralizing supervision and crisis management. But that runs up against the constitutional problem that crisis management is often extremely expensive, and there is no central, federal fiscal competence to handle it in the EU. If the burden has to be met by national Treasuries, then supervision and crisis management will remain at the national level with all the problems that that entails. This is but another facet of the more general problem for the EU arising from the disjunction of having a federal monetary system but a national fiscal system. However the EU handles this problem, there is going to be no good, nor easy way to handle burden-sharing between other sovereign states. This is a problem waiting to become yet more serious over time.

References

Acres, W. M., 1931, *The Bank of England from Within*, 2 Vols., London: Oxford University Press.

Barth, J. R., G. Caprio, and R. Levine, 2001, "The regulation and supervision of banks around the world: A new database," in *Integrating Emerging Market Countries into the Global Financial System*, Robert E. Litan and Richard Herring (eds.), *Brookings-Wharton Papers on Financial Services*, Washington, DC: Brookings Institution Press.

Barth, J. R., L. G. Dopico, and J. A. Wilcox, 2001, "Bank safety and soundness and the structure of bank supervision: A cross-country analysis," paper presented at the 2001 Financial Management Association annual meeting, Toronto, Canada, October 18.

Barth, J. R., L. G. Dopico, D. E. Nolle, and J. A. Wilcox, 2002, "An international comparison and assessment of the structure of bank supervision," Social Science Research Network, working paper, February, available at http://ssrn.com/abstract=306764.

Bordo, M., B. Eichengreen, D. Klingebiel, and S. Martinez-Peria, 2001, "Is the crisis problem growing more severe?," *Economic Policy*, 32, April, pp. 53–82.

Brown, G., and H. Eichel, 2002, "Structures for European financial stability and supervision of financial institutions," draft joint letter to Rodrigo Rato, April 11.

Caprio, G., and D. Klingebiel, 1999, "Episodes of systemic and borderline financial crises," World Bank, mimeo.

———, 1996, "Bank insolvencies: Cross-country experience," World Bank, policy and research, working paper, No. 1,574.

Frydl, E. J., 1999, "The length and cost of banking crises," International Monetary Fund, working paper, No. 99/30.

Feldman, R., J. Kim, P. Miller, and J. Schmidt, 2002, "Are banking supervisory data useful for macroeconomic forecasts?," paper presented at the Federal Reserve Bank of Chicago 38th Conference on Bank Structure and Competition, May 9.

Goodhart, C. A. E., 2004a, "The Bank of England 1970–2000," in *The British Government and the City of London in the Twentieth Century*, R. Michie (ed.), Cambridge, UK: Cambridge University Press, chapter 17.

———, 2004b, "Some new directions for financial stability," Per Jacobsson Lecture, Zurich, June, available at www.perjacobsson.org/lectures/062704.pdf.

———, 2000, "The organizational structure of banking supervision," London School of Economics, Financial Markets Group, special paper, No. 127, October.

Goodhart, C., D. Schoenmaker, and P. Dasgupta, 2002, "The skill profile of central bankers and supervisors," *European Finance Review*, Vol. 6, pp. 397–427.

Greenspan, A., 2000, "Banking supervision," speech to the American Bankers Association, Washington, DC, September 18.

Greenspan, A., 1997, "Technological change and the design of bank supervisory polices," speech at the Federal Reserve Bank of Chicago Conference on Bank Structure and Competition, May 1.

Hoggarth, G., R. Reis, and V. Saporta, 2001, "Costs of banking system instability: Some empirical evidence," Bank of England, working paper.

Kaufman, G. G., 2000a, "Banking and currency crises and systemic risk: A taxonomy and review," *Financial Markets, Institutions, and Instruments*, May, pp. 69–131.

———, 2000b, "Banking and currency crises and systemic risk: Lessons from recent events," *Economic Perspectives*, Federal Reserve Bank of Chicago, Third quarter, pp. 9–28.

———, 1996, "Bank failures, systemic risk, and bank regulation," *Cato Journal*, Spring–Summer, pp. 17–45.

———, 1995a, "Comments on systemic risk," in *Research in Financial Services: Banking, Financial Markets, and Systemic Risk*, Vol. 7, G. G. Kaufman (ed.), Greenwich, CT: JAI, pp. 47–52.

———, 1995b, "The U.S. banking debacle of the 1990s: Overview and lessons," *Financier*, May, pp. 9–26.

———, 1994, "Bank contagion: A review of the theory and evidence," *Journal of Financial Services Research*, April, pp. 123–150

———, 1987, "The truth about bank runs," Federal Reserve Bank of Chicago, staff memoranda, No. SM-87-3.

Kaufman, G. G., and K. E. Scott, 2003, "What is systemic risk, and do bank regulators retard or contribute to it?," *The Independent Review*, Vol. 8, No. 3, pp. 371–391.

Krimminger, M. H., 2004, "Deposit insurance and bank insolvency in a changing world: Synergies and challenges," International Monetary Fund Conference, Washington, DC, May 28.

Lawson, N., 1992, *The View from No. 11*, London: Bantam Press.

Lindgren, D. J., G. Garcia, and M. Saal, 1996, "Bank soundness and macroeconomic policy," International Monetary Fund, paper.

Mayes, D. G., 2004, "Who pays for bank insolvency?," Bank of Finland, working paper, circulated on Internet at financial_stability@yahoogroups.com, January 14, 2004.

Mayes, D. G., and A. Liuksila (eds.), 2003, *Who Pays for Bank Insolvency*, Basingstoke, UK: Palgrave.

Peek, J., E. Rosengren and E. Tootall, 1999, "Is bank supervision central to central banking," *Quarterly Journal of Economics*, Vol. 114, pp. 629–653.

——, 1998, "Does the Federal Reserve Bank an informational advantage? You can bank on it," Federal Reserve Bank of Boston, working paper No. 98-2, April.

Reid, M., 1982, *The Secondary Banking Crisis*, *1973-75: Its causes and course*, London: Macmillan.

Seabourne, T., 1986, "The summer of 1914," in *Financial Crises and the World Banking System*, F. Capie and G. Wood (eds.), London: Macmillan, in association with the City University of London, Center for Banking and International Finance.

Wicker, E. R., 2000, *Banking Panics of the Gilded Age*, New York City: Cambridge University Press.

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The Role of the Safety Net in Resolving Large Financial Institutions

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1. The Wider Context of Resolving Large Bank Insolvencies

It is inherent in tackling problems in financial institutions that are judged to be "systemically important" that they will not actually be closed for business even if they reach the point of insolvency.[1] The authorities, with or without the participation of the private sector, will find a way forward, whether it involves a guarantee, a capital injection, nationalization, division into a "good" and a "bad" bank or some other technique.[2] In the short term it may simply take the form of permitting an institution that would otherwise have to close, to continue in business.[3] Systemic importance implies that the costs to the economy as a whole of permitting an insolvency will be greater than the costs of the alternative course of action. Such a "cost" relates not

[1]There are of course different sorts of systemic events. More generalized stress across the system as a whole, rather than concentrated in a single large institution, will also generate action, quite possibly from monetary policy. Here, most of the discussion is of problems in a single institution but many of the same concerns apply, only more strongly, with the wider problem. In the same way that it may be difficult for other banks to recapitalize a single systemic bank, it will be difficult to recapitalize a range of banks if the whole sector is under economic pressure.

[2]According to Bovenzi (2002) the most likely outcome for a systemic bank in the U.S. would be that the FDIC immediately set up a bridge bank to continue the operations of the bank until a longer term resolution can be found, under what is effectively nationalization (Herring, 2004).

[3]"All" that is necessary is a set of actions that will convince creditors and depositors (and in theory the relevant court) that the bank in question can meet its on-going obligations. It is only actual default or announcement of expected failure to pay that will trigger an application to the courts and the opening of insolvency proceedings.

just to the direct and knock-on impact of the particular failure[4] but also to the continuing impact on the behavior of the financial system even if no such failure ever occurs.[5] On the plus side it helps generate confidence in the system, increase usage and efficiency and cut transactions costs, on the negative side it offers a moral hazard, the possibility of increased risk and the distortion of the structure of the industry by encouraging banks to become "too-big-to-fail".

Intervention in systemic cases will necessarily result in some transfer of the costs away from those who would be directly affected under insolvency, more widely across the economy and probably over a longer period of time. This and the impact on the continuing operation of the industry thus also introduce concerns over equity as well as net financial cost. Most assessments of these net costs are partial (Schwierz, 2004) and are mainly concerned with appraising, after the event, whether public money was properly used. They do not normally include an assessment of the moral hazard or costs of regulation.

This, often largely implicit, guarantee of intervention forms part of the "safety net" that the authorities provide to ensure the efficient operation of the financial system in the event of or anticipation of a severe shock either to an individual institution or to the system as a whole. It is the primary purpose of this paper to consider how this guarantee should fit into the safety net. In many countries the different parts of the safety net, implicit guarantees, lender of last resort, deposit insurance, regulation, supervision, etc., although closely related in practice, tend to be rather unrelated in design.[6] Furthermore, while for deposit insurance there is an extensive literature covering how such insurance should be priced,[7] the same does not apply to the safety net as a whole.

[4]We use the term "failure" to denote the point at which the authorities step in to takeover the bank. Such a failure may occur because a bank has inadequate assets to be allowed to continue or through fraud. In many cases we implicitly use it to embrace the occurrence of "default," where the bank actually fails to meet a current obligation through insufficient funds. A bank that is about to default may go to the authorities just beforehand, so which term actually applies will depend on the exact circumstances. While a bank fails if it defaults the reverse is not necessarily the case.

[5]This is of course in addition to the ongoing costs and benefits of prudential supervision.

[6]Even in the U.S., which has one of the most integrated frameworks, systemic support is treated exceptionally under FDICIA (The Federal Deposit Insurance Corporation Improvement Act of 1991).

[7]See Morrison and White (2004) for a recent example.

We cannot address the whole of this issue but in the ensuing sections our primary concern is that for many systemically important institutions the implicit guarantees have to be considered in an international context. This generates seven main arguments, which are dealt with in turn.

- In organizing its structure a large cross-border financial institution has some ability and incentive to organize its structure so that it can try to maximize the potential benefit from different countries' (implicit) guarantees;
- This in turn leads countries to try to limit the extent that such guarantees and other aspects of the safety net apply outside their jurisdiction, which in itself may inhibit the most efficient and equitable resolution of problems; and
- In the European Union (EU)/European Economic Area (EEA), the principle of "home country control" means that large discrepancies can exist between authorities' systemic responsibility and their ability to offer credible implicit guarantees.

These discrepancies could lead to two forms of failure in the safety net:

- Some systemic banks may be too big for the authorities in a small country to save, and
- Some authorities may be unable to stop the closures that cause systemic problems, hence possibly turning a problem into a systemic event unnecessarily.

Avoiding these failures in the safety net implies four steps:

- Case by case agreements among the authorities about how to handle such problems in principle before they occur,
- A strong emphasis on prompt corrective action while banks have positive value and enhanced cooperation among supervisors — including the effective operation of market discipline on regulatorily compliant poor performers,
- Considerable regulatory harmonization, and
- Intervention using public not private law as soon as a bank is thought not to have positive net worth, so that losses are small enough to be manageable.

In the EU/EEA environment there are further problems with other parts of the safety net, particularly deposit insurance, if a bank wishes to change

its cross-border corporate structure, and specific resolution agencies at an international level may be required.

2. The International Dimension

While the traditional literature treats the question of how to handle systemic problems as if they are something which could be dealt with within a single jurisdiction, increasingly, institutions that are large enough to be systemic will be operating in a number of countries and subject to a number of jurisdictions. Thus, not only may there be anomalies within a given country over the way in which actual and potential systemic events are handled but the regime also has to be able to cope with multiple jurisdictions. Since there is little in the way of international law which covers this area, this essentially means that the outcome will depend upon the way in which the authorities involved manage to cooperate.[8] At present, despite a raft of MoUs (memoranda of understanding) among authorities promising cooperation, it is difficult to guess how the practice will work out, as outcomes will depend on the specific circumstances.[9]

This provides the basis for an unfortunate conflict. Insolvency is avoided nationally in systemic cases because it is too costly. However, avoiding it involves state intervention. Such intervention in an international environment involves cooperation. But intervention in the face of insolvency

[8]While cooperation sounds the sensible way to go in the absence of a specific event, such action may be more difficult to achieve at the time when one country seeks to blame another for being "responsible" for the problem. Where the event that brings down the bank occurs solely in the home country a host might feel entitled to compensation and vice versa.

[9]Holthausen and Rønde (2004) consider the case where supervisors in the home and host countries follow the MoUs in a manner that seeks to protect their national interests by limiting the information they provide to their partners about the part of the bank under their supervision. While this shows that the result is going to be less favorable than could be achieved through side-payments, it confuses two issues, namely cooperation among supervisors and cooperation in resolution, where the key parties are not supervisors but those with the access to public funds. While cooperation among supervisors may be cautious, particularly, where the consequences of failure or the sources of the threat to the bank rely on confidential information about other entities, there is much less incentive for it to be non-cooperative as might be the case with governments faced by a crisis. There, protecting national interests first and the joint interest second has clear plausibility.

normally needs to occur very rapidly if it is to succeed. Having to obtain international agreement on the way forward in real time may not be realistic given the problems the national authorities have experienced over systemic events.[10] Prior agreement is necessary, beyond what is currently in place and this paper suggests how this might be done, extending the proposals in Mayes *et al.* (2001) and Mayes and Liuksila (2003).

Designing schemes for intervention cannot be undertaken in isolation, as the nature of the expected intervention in the various countries will in turn affect banks' behavior. Knowing that more favorable treatment would be likely to apply if it can make itself systemic, will itself influence how a bank organizes its corporate structure, structures its balance sheet and manages its risks. It also affects the cost of finance for them (Granlund, 2003).[11] Large financial institutions whose business runs across countries would actually have a fiduciary duty to their shareholders to try to make sure that they organize their incorporation and structure in such a way that tends to maximize shareholder value in the event of difficulty. The net result is in part an encouragement to become too large or too complex to fail (Stern and Feldman, 2003).[12]

For cross-border institutions, where there is a choice, the temptation must be to try to ensure that the lead authority is one more likely to apply a method of resolution that offers the greatest protection to shareholders. In one sense the degree to which such (regulatory) arbitrage can be applied is limited, as many banks do not have much choice over where they can be headquartered. However, their access to the various parts of the safety net can be quite considerably affected by the forms of incorporation they chose. In the EU, for example, they will be subject to home country control if they opt to use a branch structure but host country control if they set up subsidiaries; although its lead or "consolidating" supervisor will be its home country in both cases. They can choose which arrangement is most appropriate for each market. Ironically, while opting for a corporate

[10]While the lessons from the grab for local assets that followed the failure of BCCI may have been learnt, the replacement arrangements have, fortunately, not been effectively tested.

[11]Stern and Feldman (2003) explore the extent to which being thought too big to fail affects credit ratings and the cost of capital.

[12]Size has a number of different facets in achieving systemic status, not simply the size of the potential loss and the number of people directly affected. Simply being too complicated to sort out fast enough would suffice as would a critical role in particular markets.

structure that enables home country control to operate may make more sense from the point of view of organizing the bank's business efficiently, it might also make the bank less complex and hence more feasible for the home country to close.

The authorities will tend to respond to cross-border banks' choices to limit their own exposures, so this is not a single step decision. In particular, the authorities will want to take account of the fact that the distribution of the impact across countries varies according to whether it is the shareholders, depositors (the insurance funds), other creditors, employees or direct or indirect contagion through the system that absorbs losses. As is explored in the next section, the bank's choice may not offer a credible option to the authorities for action according to the prevailing commitments in the event of failure.

3. Too-Big-to-Save?

There have been various instances of failure of insurance funds in the face of large claims, with the payout ending up being less generous than expected (Eisenbeis, 2004). In an international context the demands on the host country can build up well beyond the importance of the bank in purely domestic operations. The assessment of the extent of the protection potentially available in a market therefore comprises both the likely rules that will be applied and the capacity to exercise them. Some banks are so large that they will be effectively "too large to save" for the authorities in a small country (Mayes, 2004). Although the home and host authorities between them may have the resources necessary to avoid a failure and, indeed, the question of how such joint action by the various authorities involved would be achieved has been addressed, it is not clear how the practice would work (Brouwer *et al.*, 2003). Cooperation in the current problem of supervision of international banks is more advanced than the cooperation over the hypothetical issue of crisis management.

Interestingly enough until the discussions about the restructuring of Nordea (set out in the appendix), there has been relatively little concern, outside Switzerland, over the extent to which an insurance fund, as currently structured in the EU, might have to pay out to foreign depositors. Deutsche Bank in New Zealand, for example, states quite explicitly in its disclosure documents that New Zealand depositors are covered on exactly

the same basis by the German deposit insurance fund as are its depositors in Germany.[13]

There are conflicting interests among the authorities. To take a simple example, a bank may be of systemic importance in some host countries, where it has branches or subsidiaries, but not in the home country (Mayes and Vesala, 2000). There are no clear rules for international compensation in these circumstances. The host country has to cope with the systemic problem but it cannot control the resolution of the bank in question where that is the responsibility of the home authority. It is noticeable that New Zealand, which faces this problem, is insisting that all systemically important banks be locally incorporated even if they are foreign owned (Bollard and Ng, 2003).[14] However, even having an identifiable local institution that can be in some sense isolated from the rest of the banking group does not address all of the issues.[15] A group which is solvent but in difficulty might quite legitimately want to shrink foreign activity rapidly to focus on its "core" market (Peek and Rosengren, 2000). Hence the actions in the host country may be quite damaging even when there is no issue of insolvency or breaking of the regulations.

[13]The key parts of the two page Key Information Summary, which all banks in New Zealand are required to display in branches for the benefit of customers, are "Deutsche Bank AG New Zealand (DBAG NZ) is a branch of Deutsche Bank AG. Therefore, obligations of DBAG NZ are obligations of Deutsche Bank AG. The rights of creditors located in New Zealand in a bankruptcy of Deutsche Bank AG would be governed by the German Bankruptcy Act. … all unsecured creditors of Deutsche Bank AG would be treated equally in a bankruptcy of Deutsche Bank AG. … unsecured creditors of DBAG NZ would have the benefit of a Deposit Insurance Fund operated by the Federal Association of German Banks, of which Deutsche Bank AG is a member. The fund protects all deposits with a member bank by non-banks irrespective of the location of the bank with which a deposit is being made." There are of course provisos about how the courts may operate in practice.

[14]In this instance, it is not a concern over the structure of the deposit insurance fund as neither Australia (where most of the foreign banks are incorporated) nor New Zealand have one, but rather over the existence of domestic depositor preference in Australia and the possibility of different attitudes to a systemic problem in the two countries in a crisis.

[15]Kaufman (2004) points out that even though a bank may be operating as a subsidiary in a country, the subsidiary may not be an independent institution that can operate on its own, as all of the main services and operations may be provided by the parent or other parts of the group. In such a case a host country has little means of keeping the local part of the bank running on its own in the event of failure, irrelevant of the legal corporate form.

This cross-national issue is potentially a much more serious problem than its domestic counterpart, as currently the financial system operates as if this difficulty did not exist. The switch in behavior from believing that a satisfactory safety net exists to fearing that it does not would exacerbate the crisis. Fortunately, none of the international banks that are large compared to the countries in which they operate has come close to failure. There is therefore the opportunity to address the issue without the pressure of a pending case.

As this is a small country problem it has not been comprehensively addressed in the international fora dominated by the Group of Ten (G10). The countries most affected have had to take action ahead of more generalized agreement. Switzerland has unilaterally acted as it is home to two banks in this category (Hüpkes, 2003). Similarly, the Nordic countries, which face inter alia the problem of handling Nordea, the most striking example of such a cross-border bank in Europe (Schoenmaker and Oosterloo, 2002), are making specific case by case arrangements. A general EU/EEA-wide agreement is some way off despite the existence of the Winding-up Directive (Hadjiemmanuil, 2003).[16]

4. Other Factors Affecting the Choice of Structure and Regulatory Location

It is not just how shareholders will be treated in the event of difficulty that matters for the bank's choice of structure and regulatory location. Clearly the major emphasis will be on the attractiveness of the operating environment, both in terms of the costs it imposes on the bank (and hence on its customers) and in its appeal to customers (Mälkönen, 2004).

The choices open to a bank wishing to alter its structure may be more limited than is immediately apparent. The structure of deposit insurance regimes

[16]The Winding-up Directive (Directive 2001/24/EC of the European Parliament and of the Council of 4th April 2001) does at least follow the generally accepted principles of treating the bank as a single entity, acting under a single set of proceedings and having equal treatment of all classes of customers in the EU/EEA irrespective of where they are. More importantly from the point of view of the present paper, this single approach, run by the authorities in the home country, applies to reorganization proceedings before the bank reaches the point of insolvency. In both of these cases, even though the host countries may not have matching provisions in their own laws and procedures, those of the home country will be applied (Campbell, 2003). This provides for asymmetry within a market as the host country laws may permit administrative intervention where the home country does not. Hence banks competing for the same customers directly will be differently treated.

varies considerably inside the EEA. Although there is a common minimum for the deposits to be insured, the way the insurance is funded and administered varies from case to case. Such insurance is therefore not portable. If a bank is taken over or decides to alter its corporate form, it cannot simply withdraw its "share" of the deposit insurance fund and place it with the deposit insurance corporation of another country. Insurance funds tend to operate on a ratcheting up basis. If the funds available fall relative to the insured deposits then they have to be topped up. Excess funds permit a contributions holiday. An individual bank that is losing deposits may gain exemption from making further contributions. Exit where all depositors are repaid in full from the bank's assets is not common, normally exit entails drawing on the fund.

5. The Design of the Safety Net

The authorities normally try to strike a balance between trying to avoid threats to the financial system and having an action plan in place to offset the unacceptable consequences should they occur. There will also be outcomes for which they have no explicit plans, because the events have not been thought of or because their expected frequency or cost is too low to make such preparation worthwhile. Regulation to reduce the risk of systemic problems will have an ongoing compliance cost. However, having an action plan in place or believed to be in place has twin aspects. In part there will be little in the way of costs unless it is activated. However, it will also confer continuing costs and benefits just because of its existence.

We do not address here the parts of the safety net that relate to a malfunction in the system, particularly that relating the lender of last resort function performed by central banks. Under normal circumstances banks should not have difficulty gaining access to liquidity through the market and the central banks in the EU/EEA in particular stand ready to provide adequate liquidity to keep markets functioning well in the event of problems. Even though lending in the Euro area needs to collateralized, central banks will be making a judgement about any potential loss they might face from their actions, so there will be a grey area on the edge of failure or default.[17]

[17]Kahn and Santos (2004) produce a model in which the lender of last resort and deposit insurance functions are effectively substitutes. In such a world there is an obvious conflict of interest as the deposit insurance fund would like a bank to be closed early to minimize its losses whereas the lender of last resort would hope that the bank could survive its problems so that there was no pressure on the system. Normally the functions are clearly divided and the exposures and beneficiaries not so closely matched.

Most of the safety net, however, is only triggered in the event of default or failure. Its parts, in terms of deposit insurance, emergency lending, guarantees etc. may well be the responsibility of separate organizations including the central bank and the ministry of finance.[18]

For any such scheme to be efficient, the parts need to support each other.[19] A system of resolution without direct access to public funds, as suggested in Mayes *et al.* (2001), will only be workable if the losses to be borne by the shareholders and creditors are limited. If they are a noticeable percentage of GDP, they will retain their systemic character but not of course to anything like the extent that they would if the bank had been allowed to close and enter normal insolvency proceedings. The robust exit approach therefore has to be buttressed not just by the normal sorts of regulations and supervision to ensure prudential behavior but by market discipline and requirements for prompt corrective action should the bank get into difficulty.

In an international environment the authorities have to decide how to handle their potential exposure to foreign creditors and depositors (and indeed shareholders if they are intending to keep the organization running in current ownership or to buy them out). In the case of Switzerland, the question of managing the exposure has been addressed directly by imposing a limit, of 4bnCHF, on the payout by the deposit insurance fund, despite the obligations to refund up to a maximum that apply on an account by account basis. Some countries handle these potential liabilities differently, either by not providing insurance or, as in the case of the U.S. and Australia, by providing domestic depositor preference. As mentioned earlier, in the EU/EEA the position is more complex as the obligation over which jurisdiction has to provide the insurance and hence pay out depends on the corporate form

[18]There clearly two forms of coordination that are required in the case of financial difficulty in a cross-border bank. The first is among the organizations with the same responsibilities in the different countries — among the central banks, for example, in coordinating emergency lending. The second is between the organizations with different responsibilities. A central bank considering emergency lending will want the supervisory authority's opinion on the solvency of the bank, itself the result of coordination among the supervisors.

[19]Beck (2003), for example, shows a neat contrast between Germany, where the parts do fit together, and Russia, where some of the incentives appear to be perverse.

of the bank. A bank operating as a subsidiary in a second country will have its eligible deposits covered by that "host" country, while one that operates as a branch will have them covered by the home country where the parent company is incorporated.[20]

In the case of systemic institutions it is not clear that it is the deposit insurance part of the safety net that is relevant to decisions about corporate structures, balance sheets and risk taking. If the institution is going to be kept trading, then the insurance fund will not be called upon. This is not strictly true if the organization that is going to provide the systemic support is itself the deposit insurance fund (as in the Norwegian crisis of 1991) (Moe *et al.*, 2004). To some extent the relevant concern will be the extent of the potential Lender of Last Resort actions by the central bank or the degree of regulatory forbearance. In the main it will be a concern over which state will provide the capital injection or guarantee necessary to keep the bank open and trading.

All of this will be a guess, not simply because of the traditional constructive ambiguity that exists — the authorities will not commit themselves in advance to what support will be offered in case that encourages banks to take greater risks. It will be mainly because the authorities have not actually decided in advance and will treat each occurrence case by case. As the second Brouwer Report (Brouwer *et al.*, 2003) points out, at the European level, MoUs as to who would do what in a crisis do not extend as far as any commitment to pay.

If behavior in the Nordic crises is anything to go by, then the unstated expectation would be that the authorities would limit the losses to the liability of the shareholders and the jobs of managers and directors immediately involved at the very least. In Sweden and Finland, even the shareholders were not wiped out in all cases. The reaction was particularly instructive in Sweden, where there was no deposit insurance at the time. It is not clear that a country with no deposit insurance would actually offer no protection in systemic cases — even if, as in the case of New Zealand, the authorities

[20]The system is not quite as simple as this, as the bank can opt to have its insurance topped up in the local market to the level prevailing there. Banks can thus avoid being at a competitive disadvantage in a foreign market if their home country deposit insurance is less generous.

go to some lengths to spell out the lack of insurance and the limits to their obligations (Orr, 2004).[21]

There is thus an expectation of no or limited loss combined with an increasing likelihood that the authorities may not have the capacity to deliver it. While there is a fairly close match between the regulatory responsibility and the responsibility for deposit insurance this is not so for intervention. The authority that triggers an insolvency is not necessarily in a country that has a systemic problem as a result. The incentives for prompt corrective action, forbearance or use of public funds will not necessarily match up. It is not immediately obvious what impact this might have on risk-taking by systemic banks normally and in the event of difficulty. A well-worked out and believable scheme of international coordination in the event of difficulty might reduce moral hazard but the worry that there might be an inability to coordinate in the event of a crisis might also lower the hazard compared to the traditional national circumstance where a bailout is likely to be the expected outcome in the absence of a clearly planned alternative. Only the well worked out scheme addresses the issue of what to do if a crisis were actually to arise.

6. The Need for Action over Systemically Important Banks

It is important not to over-emphasize the difficulty of getting agreement among the authorities over cooperation in the hypothetical case of difficulty in a cross-border institution of systemic proportions. Differences in framework and interests among regimes can be small in some cases. Although there is considerable room for detailed difference, agreeing that one supervisor would act on behalf of the others in the Nordic/Baltic region, following a regime under the auspices of the Basel2, should not prove particularly difficult while banks are adequately capitalized, given the very

[21]Although our main concern here is with the failure of a single "systemic" institution, much of the information that would be used to assess the authorities' likely reaction will stem from more widespread financial crises as these are the more typical occurrence. The more widespread the crisis, the more likely it is that there were generalized market-wide measures employed to help offset the impact and not just measures focused on individual institutions. The more general the crisis the more likely it is that governments will undertaking sweeping changes, even if these are not permitted by the pre-existing legislation. In a crisis a government can rush through new legislation and use emergency powers.

substantial convergence of the legal framework and the rules applied.[22] The other countries could feel confident that supervision was being applied to adequate standards.[23] The problem comes when banks are underperforming or show other causes for concern. The rules for corrective action do not necessarily coincide quite so readily, not least because there is considerable scope for judgement. However, a large part of how any insolvency regime might operate is affected by the effectiveness of the actions available to avoid reaching the point of insolvency in the first place.

Three circumstances need to be covered by supervisory coordination or cooperation:[24] adequate capitalization, inadequate capitalization requiring prompt corrective action and insolvency/intervention where corrective action has failed. These will be subject to different regulation in the various countries and hence the agreement between authorities has to cover all three. The widespread nature of this need will in itself encourage the regulatory systems to converge. Indeed there has been considerable policy borrowing already with countries looking closely at each other's rules when making revisions. Such convergence has of course been greatly assisted by the framework of banking regulation in the EU/EEA and the Lamfalussy process, including the setting up of the Committee of European Banking Supervisors, to parallel the Committee of European Securities Regulators (Roldan, 2004).

[22]The range of possibilities of how to handle cooperation in financial regulation and supervision of solvent institutions in Europe has been widely discussed and the options are clearly set out in Lastra (2003) inter alia.

[23]Some level of exchange of information is likely to be agreed to help substantiate that confidence (probably in the form of an MOU).

[24]Schoenmaker and Oosterloo (2002) make a helpful distinction between the various ways in which authorities can work together. They can retain their independence and simply cooperate or work more closely through explicit routes of coordination and defined responsibilities. (They can also of course set up a joint organization, which could be new or simply a subordination of one organization to another.) The typical MoUs range between cooperation and coordination and there is no hard and fast line that can be drawn between the two. To quite a large extent, how the authorities work together will be a matter of actual practice rather than the rules that govern it. Exchange of information, for example, is something that is always controlled by the organization that has it. It will only be after the event that one might discover that information has been withheld or the terms of the MOU interpreted in a more restricted sense than anticipated by the aspiring receiver of the information. In the context of the revisions to the agreements between the Nordic and Baltic regulators an arrangement that involves more explicit coordination, including agency agreements is anticipated rather than simply cooperation under relatively loose MoUs.

While it is easy to separate out the role of the authorities when handling a solvent institution from handling an insolvent one, the area in between is more difficult to differentiate. Different skills are required in conducting monitoring and compliance activities of supervision from those used when the authorities take over the bank or try to judge what form of support should be offered. When the need for corrective action arrives, increasing elements of skills under insolvency begin to come to the fore. The authorities increasingly restrict the scope of action for the bank, both to protect the depositors and creditors and to enhance the chances of successful recapitalization. This gives a clear problem of institutional structure, if resolution of an insolvent institution is going to be undertaken not just by a different organization but by organizations with different country mixes, following the different incidence of the activities of the bank in the two circumstances. The distribution of customers and the distribution of losses under insolvency can be very different.

Corrective action should not await instructions or pressure from the supervisors but should occur through the normal market mechanisms (Llewellyn and Mayes, 2003). Initial pressure will occur within the board of the bank if they feel performance is inadequate. Such underperformance may not be detectable to outsiders and may be based on comparison with other banks — gaining market share, for example. The internal corporate governance of the bank will be the first line of corrective action. Beyond that, under-performance of the bank may be perceived by outsiders even though the bank meets all the prudential criteria of the authorities and is hence not a concern to them. At that point market discipline would work through a variety of routes both pressuring the directors to act through changes in share prices, subordinated debt prices, ratings etc. and through the market for corporate control.[25] Thus concern over the effective operation of the process for corrective action is within the ambit of those supervising adequately solvent institutions.

The mere fact of being a cross-border bank of systemic importance does not necessarily affect the operation of much of market discipline but it might make sale of the bank on the market difficult. It may rule out a number of most likely aspiring acquirers because it would reduce competition too much in one or other of the markets, possibly entailing a break up as part

[25]Llewellyn and Mayes (2003) suggest a list of at least ten stakeholders who monitor the bank and can take action as a result of market signals or indeed provide the market signals through their actions.

of an acceptable deal. If a prospective purchaser expects to have to satisfy several different authorities this may itself act as a deterrent. The impact of the regulatory structure on the speed of drift towards difficulty can therefore occur well away from any expectation of failure. Competition law at both the national and EU level will affect behavior. Only other very large banks are likely to have the resources to takeover or merge with the under-performing bank. Such a consequence may delay addressing the problem and entail that the buyer needs to be foreign to avert the competition concerns.[26] Such a purchase or merger would only worsen the problems of the discrepancy between home country control and host country systemic responsibility.

Once the bank becomes a source of concern to the authorities, even if it is not actually in breach of the regulations, the actions of the authorities will affect the probability of failure. If a bank is undercapitalized it will trigger some process of prompt corrective action. There is no guarantee that a home country authority would pursue this with the same vigor as the host would. How recapitalization plans should be viewed and how active the search for suitors would be tends to be kept confidential until approaches become formal. While forbearance is formally discouraged in most administrations, what this means in practice can vary enormously. Hence host and home country authorities can have very different views about what should be done.

As Bliss (2003) points out, if a voluntary resolution, assisted by the authorities as honest broker, can be achieved at this stage it will greatly assist the chances of success for a large complex financial institution, as illustrated by LTCM.[27] In an insolvency the arrangements are deliberately designed to achieve collective action among the multitude of claimants by ensuring them a pre-ordained priority and equal treatment with similar creditors. Individual creditors then cannot hold the others to ransom by refusing to agree. For voluntary arrangements to work prior to insolvency, there has to be a willingness for all of the parties to participate. In the cross-border context there also has to be the willingness by the affected to recognize the

[26]As appears to be the case with the Abbey National in the UK. A merger with another large UK bank Lloyds-TSB, was not permitted and the current proposal from the Banco Santander Central Hispano comes from outside the UK but only after a delay of years.

[27]The LTCM example is interesting because it was the Federal Reserve Bank of New York that got the parties round the table. It is the authority which has the concern for systemic stability that has the greatest motivation for action. In many cases in Europe the lead regulator may not be a central bank. Thus for the central bank in the lead regulator's country to step in as the broker it has to be sufficiently informed to act in time.

validity of some institution as the honest broker. This could be difficult if it is a central bank in a foreign country with which the bank's private counterparties in a particular host country may have had few dealings. Bliss also notes (2003, p. 28) that the arrival of "vulture funds", which are concerned to maximize the short-run payoff without wishing to run the continuing business may make such voluntary action more difficult. The cooperative "London Approach" is likely to be decreasingly applicable.

A particular advantage of voluntary action in cooperation with the creditors rather than intervention by the authorities directly is that it does not entail the premature termination of contracts and the triggering of closeout netting. Any scheme for reorganization that admits the bank has in some sense failed may trigger the immediate termination of some contracts as may reduction in credit ratings. This in itself will tend to reduce the value of the bank and hence make resolution more costly, even if the design reduces the systemic consequences of the failure.

The key to making the system fit together is that the incentives to creditors, debtors and the authorities for early resolution must all bite. In each case judgements must be made about the potential benefits from delay rather than action. Management is likely to favor delay as resolution will probably involve loss of their jobs but for the owners, a resolution which involves their retrieving at least some value will be better than the none they will achieve if the bank reaches the point of compulsory official intervention. Collective voluntary action may have a better pay off than simply selling shares on the market. The problem comes when the downside is limited[28] or where individuals can do better than equal treatment by holding out or exiting early. Even the authorities can have conflicting incentives, if intervention, even voluntarily, can be taken to imply some form of regulatory failure (Eisenbeis, 2004). If it were certain that early action would be an improvement rather than hoping that a turnaround in the economy or fortunate private offer would solve the problem, there would be no conflict. It is difficult to conceive of a system which does not work, at least in part, because of the knowledge that the authorities will have no alternative to intervening as the various trigger points are reached. And that those interventions will be less attractive than voluntary preemption.

[28]There has of course been a series of suggestions about how the downside for executives might be extended even after they leave the company, by making their ability to exercise share price related benefits subject to a substantial time delay (see Wood, 2004, for example).

7. Trying to Minimize the Cost

The first line two lines of defense in trying to organize the smooth resolution of problems in large cross-border financial institutions are thus a regulatory regime that discourages getting into difficulty in the first place and a corrective action regime that not merely involves action by the supervisors when compliance is threatened but earlier effective operation for the pressures from market discipline. However, these first two lines of defense can be breached, especially by financial accidents or fraud. If a bank nevertheless gets to the point of default or failure, it would greatly ease the problem of resolving cross-border banks if a means could be found where no public sector money is involved.[29] The problems of one country having to consider paying beneficiaries in another then need not occur, although there could still be competition for control of the assets. In such circumstances of limited loss, the problems of getting prior agreement on a system for cross-border resolution would be lessened.

The key step in our proposals is to minimize the amount of any public funds needed to effect the resolution satisfactorily. This in turn reduces the size of the problem that has to be resolved by bargaining among the different countries affected. In so far as there is exposure, the more this can be dealt with by prior agreements that come into force automatically then the easier it will be to achieve the resolution. This can apply to the principal unavoidable exposure, namely that to the deposit insurance funds, which will need make good depositors' balances covered by the insurance to the extent of the write-down that was necessary to bring the bank back to positive net worth. In some respects this can remain as a claim on the bank's books, as its existence should be sufficient to prevent a run by the insured depositors. It is an asset against which the central bank would be prepared to lend to provide emergency liquidity without the need to sell further assets at a deep discount.

[29]Eisenbeis (2004) suggests that the simplest route would be for the authorities to withdraw the license and takeover control for the resolution of the bank from the shareholders while it still has positive value. This is possible already in the U.S. framework under FIDCIA as the FDIC is required to step in when the capital ratio falls below 2 percent of assets (USA 12 U.S.C. § 1831o (h)). However, whether this particular window is wide enough to catch the bank before it becomes insolvent is debatable. Nevertheless, the earlier the authorities can step in, the lower any losses to either private or public sector (beyond the shareholders) are likely to be. Unfortunately, the authorities in the EU/EEA do not in the main possess any such powers to step in before the point of default or failure occurs.

The proposals for bank resolution in Mayes *et al.* (2001) (rehearsed briefly in Table 1) avoid having to use public funds to bail out the creditors of problem banks (or the shareholders). Adopting a regulatory framework along these lines would still be of benefit. Their key ingredient is that the shareholders bear the initial loss and beyond that any remaining losses are apportioned among the creditors and depositors, without the need to close the bank. However, even if this scheme can be applied, it is unlikely to be possible to avoid actual or potential fiscal costs altogether, even if direct costs incurred in the resolution procedure are ultimately repaid. The same knock on effects would apply if other approaches to resolution avoiding closure were used and there was, say, a bailout in the form of emergency (unsecured)

Table 1. The Mayes, Halme and Liuksila (2001) proposals

1	The authorities should use public rather than private law to regulate the closure and resolution of banks so that:
2	The authorities should step in at prescribed benchmarks and takeover the bank from the shareholders (the benchmark discussed in the book is zero net worth, so that shareholder value is zero at that point and there is no question of expropriation, other intervention points are possible).
3	The authorities should then make an immediate appraisal of the extent of the deficiency in the bank as of the moment of failure or default. (In the case of non-systemic banks the expectation is that normal insolvency procedures would apply and the bank would be closed or kept in being by the receiver according to which course of action appeared to maximize the return for the creditors, including the deposit insurance fund. In the case of systemic banks dealt with here, closure is not an option by definition).
4	The losses, if any, would be apportioned, respecting priority, equally across the categories of creditors so that net worth is returned to zero. Such apportionment would follow the procedures under insolvency and hence would make not make anybody worse off than they would be under insolvency (probably noticeably less so as the costs are much lower). There are various ways this process of writing down could take through debt or equity restructuring.
5	The bank would be re-opened for business, under the new ownership, with a public guarantee, without any material interruption of trading. (It is assumed that the whole process takes place over the proverbial weekend so that the authorities have 48 hours or more to implement the process.)

loans that were eventually repaid, as in the Swedish crisis (Moe *et al.*, 2004). Since the bank involved is of systemic size, it is unlikely that the realization of a major loss will be without knock-on fiscal consequences, even if the smooth resolution procedures we have suggested are applied. There will be some job losses and consumption reductions and hence increased demands for public spending and reduced tax revenues, however, far less than if the bank were to become insolvent and the systemic consequences of failure and actual closure realized.

Secondly, if depositors have had to bear some of the loss and those deposits have been insured in part or in full by the state, there will be a net increase in public sector debt. Even in a completely private or funded scheme a loan might be necessary until the deposit insurance fund can build up its resources again from its members. The scheme may of course collapse, pushing the state into paying out in order to avoid a loss of confidence and the sorts of systemic events they hope having the safety net avoids.[30]

Thirdly, under the resolution procedures summarized in Table 1, the authorities have to make a rapid assessment of the net worth of the bank before writing down the claims of the creditors in priority sufficiently to return the bank to positive net worth. There are bound to be errors in this calculation. If the claims have been written down too far, creditors would need to be compensated. In theory shareholders might need to be compensated if it turned out that net worth had after all been positive at the time of takeover.[31] Similarly if further losses are discovered, these would be a charge on the previous creditors or the state, not on the new owners of the bank.

This takes us to the most important exposure for the public sector. It is not possible for the bank to reopen for business unless there is a public guarantee for the business undertaken after the point of seizure by the authorities (item 5 in Table 1). This could be a considerable contingent liability if the problems of the bank lie with its continuing operations rather than simply with an appropriate lowering of the value of its assets to take full account of the likely non-performance of its loan portfolio. If the failure is related to a severe downturn in the economy, the economy may perform worse than forecast and hence generate more failures among the bank's borrowers than anticipated. While the authorities are still responsible for the running of the

[30] Kane (1987) offers a good illustration of the fiscal problems posed by the failure of a deposit guarantee fund.

[31] Some forms of equity restructuring could make such compensation automatic.

bank prior to returning it to the private sector they will be liable for any further losses just as they will benefit from gains.

Thus, there will be some actual and contingent losses that the authorities will have to assume. How these are to be borne will have to be decided beforehand and the resolution agency or administrator will have to be able to act quickly under a prescribed code without further need to refer to the governmental principals. This presupposes two requirements. First that burden-sharing has been agreed according to some simple principle, say, the country distribution of insured deposits, if the home country is not to assume the entire burden. Second, that the administrator of the bank has some direct access to funds. This could be readily achieved if the administrator were appointed by the central bank(s) involved.

8. Judging When to Intervene and Assessing the Loss

Although the Mayes *et al.* (2001) scheme involves taking over the bank when its net worth falls to zero the authorities need to be able to detect when that occurs. If they wait until there are signs of an emerging run or the bank itself admits that it could default, the insolvency is likely to be considerable.[32] Mayes and Liuksila (2003) suggest that the basis for supervision should change as soon as a bank is thought to be failing to comply with the minimum requirements for capital adequacy. At that point the focus should cease to be just on regulatory capital and should move to establishing a valuation of the bank on an economic or net worth basis. Thus attempting to evaluate the net worth of the bank would not be confined to the proverbial weekend should the bank appear insolvent but to a longer period. While this may not be possible if the bank is subject to a very unusual shock or to a fraud or other sudden discovery of a loss of capital, it should increase the chance of intervening before the loss deepens too far. In the case of a cross-border bank it will be the lead supervisor that has to make these judgements for the institution as a whole. It is not immediate apparent why this should alter the logic of the scheme.

[32]The actual requirement is that the authorities should step in at the earlier of "failure" or default, where failure is defined as negative net worth, that is, where an orderly liquidation of the bank's assets would not cover its liabilities. The orderly requirement is necessary, as in an insolvency it is the duty of the liquidator to try to maximize the value of the pool of assets available to meet the claims. It is not just a matter of the current or "fire sale" value of those assets.

One means of moving the focus away from regulatory capital would be to activate a different branch of the supervisory authority that handles failures or to bring in a separate resolution agency to perform the valuation. Having this procedure will help increase the incentive on the bank to make its own voluntary recapitalization by making the prospect of resolving the bank successfully with a total loss to shareholders more real. Special efforts are needed to try to establish such a valuation. As Kaufman (2004, p. 6) remarks "as a bank approaches insolvency, its reported books approach fiction more than fact".

It is impossible to make an accurate valuation of a bank's assets and liabilities in a hurry. To treat the stakeholders in the bank fairly in a resolution, they should not be made worse of than they would be under insolvency. However, the only way to find out what the outcome of an insolvency would be is to have it. Assets are realized over a substantial period of time in a manner which the liquidator thinks will maximize the pool available for redistribution, subject to the relevant agreement by the courts. Any valuation today of what that outcome will be is necessarily hypothetical.

In any case an insolvency valuation is necessarily on a dismemberment rather than a going concern basis, although the liquidator can choose sale of businesses as the way to maximize value. Banks will usually be worth more as going concerns even if their value is negative (Guttentag and Herring, 1983). A mark-to-market valuation according to the most recent International Accounting Standards is not a solution because the market price itself would be affected by the situation of a systemic institution. If a systemic bank's assets come on to the market or are thought likely to do so, prices will fall and the apparent solvency of the bank would fall. In a systemic case the value of the loan portfolio would be affected as the chance of default by borrowers would increase.

As long as the value of the bank appears to be negative, taking control away from the shareholders does not deprive them of value as their shares are worthless. It is the depositors and other creditors whose exposure increases as the value of the bank falls further. It is this limit to shareholders' losses that can tempt a bank in difficulties to take increasing risks (gambling for resurrection). While prompt corrective action will seek both to limit risk-taking and encourage measures to recapitalize and reduce losses, the authorities still have to acknowledge the rights of shareholders while the bank has positive value.

What closes a bank, in the absence of intervention, is not having assets worth less than liabilities but being unable to pay, that is, default. The LOLR arrangement is predicated on the idea that it is temporary illiquidity or the need to sell assets prematurely and in a hurry at over-discounted prices that is the problem. These arrangements should prevent a bank defaulting before it "fails" in the net worth sense. However, in practice a bank is likely to be able to continue to meet its day-to-day obligations to pay even though its net worth on a liquidation basis may be negative. It would require an unfortunate handling of liquidity for this not to be true.[33] The normal requirement for triggering insolvency is either default or the likelihood of it, not the existence of negative net worth. As long as there is no rush to call in claims, trading can continue.

The key is to act in the window between zero net worth and default — if it exists. Acting beforehand in cases other than fraud or serious breaches of the regulations will be difficult even in the case of a bank that has become substantially undercapitalized. In theory banking licenses can be withdrawn thereby triggering closure. But that in itself destroys value and hence puts a burden of responsibility on the public sector that it is not normally willing to acquire. It will be open to legal claims and the actions could easily look like expropriation. As the Pafitis case shows[34] there is considerable limitation on how the authorities can seek to push unwilling shareholders into action.

The concern about the failure of a systemic bank has two sides. First, there is the immediate disruption to financial markets if the bank stopped trading. The knock on effect of so many failed or interrupted transactions would be difficult to offset without considerable real harm to the economy. Second, in trying to avoid the failure or avoid being caught up in it, there will be a rush to liquidate assets, resulting in a system-wide fall in asset prices.

What is particularly worrying in these sorts of circumstance is that policy tends to be reactive (Goodhart, 2004b). Action is not taken until the problem has realized, influential people have lost money and the government has come under pressure from the economic consequences and the crisis of

[33]Goodhart (2004a) points out that the current pre-occupation in the Basel Committee discussion with holding capital against risk may actually have gone too far in changing the emphasis away from liquidity. Supervisors might want to focus somewhat more on liquidity in fulfilling the aims of financial stability, especially if Basel2 and the new accounting conventions end up being somewhat pro-cyclical in their initial impact.

[34]*Panagis Pafitis and other v. Trapeza Kentrikis Ellados AE and others* (Case C-441/93), CMLR, 9 July 1996.

the time. Being prepared for such a problem is not particularly expensive. No grand organization is required even if there were to be a European level agency. No change is needed in banking supervision in normal times. The legislative burden would however be considerable if the law is to be changed to the basis we suggest and the discussions between the authorities concerned will no doubt be difficult even if the resolution arrangements are on a case by case basis.

In practice there are delays before the deposit insurance fund provides a partial or full payout to the insured. If the intervention has come early, the size of the claim will in turn be limited — quite possibly sufficiently that the fund can cover it in the short run from its resources and only replenish its funds more slowly from its private or public sector sources (depending on its design) according to the normal rules.

If, as in the U.S., it is the deposit insurance fund of the home country that takes responsibility for the resolution after the decision to intervene has been taken, the claim on "public" funds and the ability to disburse them are in the same hands. This does not apply to the deposit insurance funds in host countries. If an international bank operates through subsidiaries and not branches then the administrator has to rely on the prior commitment of the other funds. Of course some host countries may have no deposit insurance scheme. Then the management of the losses will be more complex, as each individual deposit will have to be written down, as it will be where the deposit insurance scheme itself involves a haircut, as in the U.K.

The guarantee offered against future losses is more difficult. It is a contingent liability and will only be drawn on where the rapid assessment of losses at the time of intervention was an underestimate or it is impossible to run the bank on a break-even basis. Even so the guarantee is unlikely to require the actual provision of funds in the short run. This will not be the case so readily, if the confidence building gesture takes the form of providing a substantial deposit (at market rates). Nevertheless, such an approach entails that either the home country issues the guarantee on its own, in the hope of the host countries joining in with the appropriate shares thereafter, or that their commitment can be achieved at the time.

9. Equal Treatment and the Need for a Common Pool Approach

The treatment of cross-border banks in difficulty is more straightforward if creditors and debtors are only distinguished by the types of claims they

hold on the bank and are not differentiated by the countries in which they happen to reside.[35] As soon as there is any preference for domestic over foreign creditors in a particular class then each country will want to try to arrange administration of the problem so that it can gain control over the assets within its borders.[36] One would expect that where domestic depositor preference applies, banks and foreign authorities will ensure that the structure of the bank is such that much of the impact would be neutralized.[37]

10. The Need for a Resolution Agency

The great advantage of the U.S. system is that the authorities have decided each of the main issues about how a resolution should be handled, namely:

- At what point should intervention take place?
- Who should be responsible for the intervention?
- What principles should be applied in resolving the problem bank?

In the EU none of these have been agreed at an international level and some are not clear even at the national level.

In Mayes *et al.* (2001), we left open the institutional form of how the intervention should be carried out. We argued that it might well be possible simply to have a framework available without any specific new agency being set up for the purpose. The lead authority could then agree the procedures to be followed and a list of acceptable receivers/administrators who could be appointed should the need arise. They would bring in the best person available at the time. This approach still seems feasible where the potential arrangements are agreed on a case by case basis and there are not many cases. Even in the U.S. it is normally argued that the number of systemic banks

[35]Bliss (2003) sets out the problems that that the U.S. approach can generate in encouraging a conflict among the different national authorities as foreign agencies seek to ring fence the parts of the bank within their jurisdiction to limit the impact of U.S. depositor preference if the bank were to be resolved as a single entity in the U.S.

[36]It is noticeable that the RBNZ has suggested this as one of the reasons why banks should have to incorporate locally, even if they are not systemic.

[37]In the Winding-up Directive, the EU recognizes these difficulties and tries to treat resolution with both the single entity approach and with creditors of the same class being treated equally, whatever their country of residence or wherever their claim lies within the complex group involved. The directive applies not just to insolvency but also to other reorganizations (Campbell, 2003).

would only fall in the range 10–30 (Feldman and Stern, 2003). However, since we are also advocating early action, this might be more plausible if either there were a specific organization in place or at least a section in one of the existing authorities, charged with the task.

It is important to distinguish between the regimes for supervising solvent banks and the regimes for handling insolvent banks, that is, banks that have "failed" or are defaulting. The choices over how to handle a solvency regime have been documented (Schoenmaker, 2003). Supervision could be organized at an international level, it can be run by a lead supervisor in the "home country" or it can be organized on a cooperative/coordinated basis among the host and home countries, with the home country taking the lead.

It is implicit in MHL that the supervisory agency would decide when intervention should take place and that only once the need for intervention was established would some resolution agency then step in. In the event of a surprise default, this would clearly be the case. However, if a bank has become undercapitalized in the eyes of the supervisory agency it would be possible for the resolution agency to step in earlier and for them to perform the net worth assessment rather than the supervisory agency. The bank in question would then be facing two sets of inquiries, one from the supervisory agency concerned with regulatory capital and its replenishment, management of risk and compliance with regulations, and the other from the resolution agency simply concerned with valuation issues and preparations for how the institution might be managed in the event of failure. This could become burdensome, but it is not clear that having two separate agencies would be worse than having two arms of the same agency do the job. The problem in the second case is then that the information has to be transferred between agencies at the point of failure.

It is easy to understand the arguments for trying to centralize all these functions in a single agency, especially in the central bank, because all of the judgements could be related: corrective actions while undercapitalized; emergency lending in liquidity problems; intervention on the assessment of failure. However, the key issue for when to step in is the exposure to loss. In the U.S. case the incentive is aligned because it is the deposit insurance agency that is the resolution agency. The central bank would only be exposed to the extent its liquidity lending turned out to be to an insolvent institution.

In the European environment such neatness is almost impossible. While there is likely to be a good match between home country supervision and

deposit insurance, there is little match with systemic responsibility. The question then arises of how far each of the functions needs to be coordinated in the same manner. If there were to be a single resolution agency appointed in advance for each "systemic" bank, would that imply particular forms for the organization of supervision, deposit insurance, regulation or even lender of last resort? Clearly the lead supervisor would need to share the information of when the bank became undercapitalized, so the resolution agency could start work. In the EU environment the interests of all the deposit insurance agencies would be aligned under the common pool principle as they would not be able to alter their share of the total liability by individual rather than joint action. However, they might very well disagree as to whether a particular action would maximize the funds available. By symmetry then, there would be a straightforward argument for making the deposit insurance agency of the lead supervisor's country the resolution agency (or the agency with the greatest exposure).[38]

The existing structure of many deposit insurance agencies in the EU makes them unsuitable for taking on any resolution role. Their role in normal times involves management of the funds and in a crisis their task is relatively passive, responding when the need to pay out occurs. A resolution agency needs to be able to perform two main functions. It needs a "resolution department" to carry out the restructuring of the bank and the executive tasks while the bank is in public control. It also needs what Liuksila (2004) calls a "supervisory department" which makes the judgements. The supervisory department decides upon the level of net worth and on the size of any haircut to be applied. It acts as the tribunal that decides on the petitions of the interested parties.

Schoenmaker and Oosterloo (2004) argue that it would be best to have a European level agreement on how to handle the resolution of systemic banks but the authorities involved have to have a viable arrangement in place. They cannot wait for general agreement. This inevitably implies case by case solutions but may be sufficient. In the case of Finland, for example, this relates to just one bank, although it could relate to a second. In the case of Estonia, however, all major banks are foreign owned and such agreements are, therefore, needed in three cases, one of which is the same, Nordea, as

[38]There is no necessary match between lead supervisor and largest deposit insurance exposure, as the deposit insurance relates to some retail deposits, while the lead role will depend more on the structure of the overall business.

for Finland.[39] Clearly it would be sensible to be ready to move to a European level agreement if one could be achieved, but such case by case agreements are themselves a step to more efficient European integration.

Appendix: The Example of Nordea

The Nordea Banking Group, which is currently headquartered in Sweden and has banks in Norway, Denmark, Sweden and Finland, branches in other countries including Estonia, Poland, Singapore and a branch in New York, an investment services arm and an insurance company, is planning to take advantage of the European Company Statute after it comes into force in October 2004 and operate as a single bank based in Sweden with branches in all the other countries by some time in 2006. This is likely to be the first such move by a major international bank and will be a substantial departure from the traditional parent and subsidiary model, even though that itself is a rather poor description of the way many international financial services are organized in complex groupings. Nordea is clearly of systemic importance. As at March 2004 it had a 40 percent share of the Finnish banking market, 25 percent of the Danish, 20 percent of the Swedish and 15 percent of the Norwegian. Its share of the insurance markets was somewhat smaller: Finland 35 percent, Denmark 20 percent, Norway 9 percent and Sweden 6 percent.[40]

The current framework for supervision and the treatment of the solvent bank is straightforward. Each of the constituent banks is supervised by the authorities in its country of location (host) and the group is supervised in Sweden. The same applies to the parts of the insurance arm, although in Finland, at any rate, it is a separate supervisor. However, beyond that the structure becomes more complicated. Nordea Bank (Finland) has the branch in New York and the branch in Estonia.

There is thus overlapping responsibility. In the New York case the branch is supervised by the Finnish authority (Rahoitustarkastus), the New York

[39]Hansapank, largely owned by Swedbank, has a 50 percent market share, Eesti Ühispank, largely owned by SEB, has a 30 percent market share and the branch of Nordea, 11 percent. The only other significant bank with an 8 percent market share is a branch of Sampo, Finland's second largest bank. While Sampo is clearly a systemic bank in Finland it is more marginal in Estonia but complicated by also having a large multinational insurance company in the group.

[40]All data from Rahoitustarkastus.

Fed and New York state authorities. All are involved in on-site inspections. In the Estonian case the position changed on 1st May when Estonia joined the EU. Up till then the position was similar to New York with overlapping supervision. Now Estonia, in theory, has no role in prudential supervision but in practice Rahoitustarkastus has agreed with Finantsinspektsioon in Estonia that the latter will continue in its previous role, effectively as its agent, until the wider arrangement is put in place for 2006. (Conduct of business regulation is still a national concern and hence the supervisory authorities would continue to have some role under any arrangement.)

Looking forward, however, it is for the Swedish Finansinspektionen to work out with the other supervisors how it wants to run the new structure of supervision to come into force in 2006. It could in theory just employ its own local staff, presumably recruited from among the ranks of the newly unemployed supervisors in the other countries, since being able to speak the local language and having some experience are essential. The other authorities would then only gain access to information about Nordea officially through what the Swedish authority disclosed under the MoU. Thus although the Finnish authority remains responsible in its charter for the stability of the financial system it would be only supervising less than half of the system.

There are thus serious problems in setting up what to do under insolvency. It would not of course be of any value to remove the systemic responsibility from the Finnish supervisory authority because having to cope with the consequences would still remain a national reality. Fortunately in practice the outcome is likely to be some form of cooperation among the existing authorities, without the sort of Chinese walls that would prevent the building up of a systemic picture. It also seems probable that there will not be duplication in the supervisory process. However, the nature of the final agreement is going to be very much the product of common sense rather than one where a path is clearly dictated by the legal framework. While the EU authorities are keenly interested in how the process is working out, there is no expectation of any EU-wide agreement on how such arrangements should function before the Nordea arrangements come into force in 2006.

There are parallel discussions on how to organize deposit insurance, which in theory should be entirely absorbed by Sweden. Under the current EU rules there is a right to apply for a top up where the host country's scheme is more generous than that of the home country but that in Finland is the least generous of the four Nordic countries and Tagatisfond in Estonia, which was

only set up in 1998, will only reach the EU minimum at the end of 2007. Hence on a strict interpretation of the current rules Nordea would therefore have to subscribe to the Swedish deposit insurance scheme. However, this does not mean that it can somehow withdraw its contributions from the existing scheme or request that its share of the funds of the scheme be transferred to Sweden. In any case both the Finnish and Estonian schemes are still building up their funds to the level thought sensible for covering the risk.

This issue is rather further from resolution. Clearly there it is necessary to sort out first of all how, if at all, Nordea can switch insurers of its depositors in Finland (and the other EEA/EU states). Indeed, one option would be to try to change the rules and to permit host country insurance of deposits.[41] Then systemic responsibilities in legal, fiscal and financial terms would match. The mismatch would be between the Swedish responsibility for supervision and the Finnish deposit insurance fund's position as a contingent creditor. However, unlike in the U.S., it is not the insurance fund that is the initiator of the insolvency process but the supervisory authority. The insurer has to pay out as laid down but is not the decision-maker over how losses might be limited or minimized. Given equal treatment, this would imply that interests of the Swedish insurance fund and the funds in the other countries would be the same.

Differences would occur if Swedish insolvency law were noticeably different from that in the other countries or of course in the predilection for the use of public funds differed across the countries concerned. In this case the answer from the ways in which the Nordic crises of the late 1980s–early 1990s were handled is that preferences are not the same. Moe *et al.* (2004) show that Denmark, Finland, Norway and Sweden handled their crises differently, in part affected by their differing depth. In principle, however, one supervisory authority can act on behalf of the others in triggering insolvency/the requirement for a capital injection/public guarantee.

What is not resolved in this discussion is how the respective governments would act in the event of failure or insolvency. The role of the central banks is clearer, especially since the formation of the Eurosystem. Rules for the provision of emergency liquidity assistance are laid down, including the list of acceptable collateral. The different branches of the bank would

[41]The Deposit Insurance Directive is drawn in fairly general terms, so it is not yet clear how much leeway there is for the member states to come to bilateral agreements.

continue to hold accounts with the local central bank as their financing requirements would be currency specific. The central banks would not provide direct capital injections as they did in the Nordic crises. It seems unlikely that there will be explicit published inter-governmental agreements about what to do in the event of failure or other hypothetical circumstances involving public funds.

The issue is further complicated by the structure of the ownership of Nordea. The Swedish state is the largest single shareholder at 19.5 percent (as of March 2004). Danish, Swedish and Finnish institutions own a further 41.2 percent[42] and 12.7 percent by the public in those same countries. This leaves 26.1 percent in ownership outside these countries. The Swedish state is therefore going to face special pressures in the run up to any insolvency, since as a part owner it will be expected to participate in recapitalization. This gives a complex incentive to the other owners, who might legitimately guess that they would benefit from holding out as the Swedish authorities would not let such an important bank fail. If this proved correct they could avoid some of the cost (and risk) of the recapitalization.

References

Beck, Thorsten, 2003, "The incentive-compatible design of deposit insurance and bank failure resolution: concepts and country studies," in *Who Pays for Bank Insolvency?*, D. Mayes and A. Liuksila (eds.), Basingstoke: Palgrave-Macmillan, pp. 118–141.

Bliss, Robert R., 2003, "Resolving large complex financial organizations," Federal Reserve Bank of Chicago, working paper, No. 2003-07.

Bollard, Alan, and Tim Ng, 2003, "Financial system regulation," paper given at the Financial Ombudsman conference, July 23, available at www.rbnz.govt.nz/banking/supervision/0137359.html.

Bovenzi, John F., 2002, "Resolving large complex financial organizations," speech at the 38th annual conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May 10.

Brouwer, Henk, Gerbert Hebbink, and Sandra Wesseling, 2003, "A European approach to banking crises," in *Who Pays for Bank Insolvency?*, D. Mayes and A. Liuksila (eds.), Basingstoke: Palgrave-Macmillan, pp. 205–221.

[42]This includes a small share held by the Finnish state.

Campbell, Andrew, 2003, "Issues in cross-border bank insolvency: The European Community Directive on the Reorganization and Winding-Up of Credit Institutions," University of Wales, Aberystwyth, mimeo.

Deutsche Bank AG New Zealand, 2004, *Key Information Summary*, March 31.

Eisenbeis, Robert A., 2004, "Agency problems in banking supervision: The case of EMU," paper presented at the conference on The Structure of Financial Regulation, Bank of Finland, September 2–3.

Goodhart, Charles A. E., 2004a, "Some new directions for financial stability?," Per Jacobsson Lecture, BIS annual meeting, Zurich, June 24.

———, 2004b, "Financial supervision from an historical perspective," paper presented to the conference on The Limits to Financial Regulation, Bank of Finland, September 2.

Granlund, Peik, 2003, "Do bank exit regimes affect banking conditions?," in *Who Pays for Bank Insolvency?*, D. Mayes and A. Liuksila (eds.), Basingstoke: Palgrave-Macmillan, pp. 180–204.

Herring, Richard, 2004, "International financial conglomerates: implications for bank insolvency regimes," paper given at Rahoitustarkastus, May.

Holthausen, Cornelia, and Thomas Rønde, 2004, "Cooperation in international banking supervision," European Central Bank, working paper, No. 316.

Kahn, Charles, and João Santos, 2004, "Allocating bank regulatory powers: Lender of last resort, deposit insurance, and supervision," conference on The Structure of Financial Regulation, Bank of Finland, September 2–3.

Kane, Edward J., 1987, "Who should learn what from the failure and delayed bailout of the ODGF?," National Bureau of Economic Research, working paper, May.

Kaufman, George G., 2004, "Banking regulation and foreign-owned banks," public lecture, Victoria University of Wellington, April.

Lastra, Rosa M., 2003, "The governance structure for financial regulation and supervision in Europe," *Columbia Journal of European Law*, Vol. 10, pp. 49–67.

Liuksila, Aarno, 2004, "Draft law for a resolution agency," International Arbitration Management Corporation, Washington DC, mimeo.

Llewellyn, David T., and David G. Mayes, 2003, "The role of market discipline in handling problem banks," in *Market Discipline in Banking: Theory and Evidence*, George G. Kaufman (ed.), *Research in Financial Services: Private and Public Policy*, Vol. 15, Oxford: Elsevier, pp. 183–210.

Mayes, David G., 2004, "Preparing for cross-border bank failure," *The Financial Regulator*, Vol. 8, No. 4, pp. 58–63.

Mayes, David G., Liisa Halme, and Aarno Liuksila, 2001, *Improving Banking Supervision*, Basingstoke: Palgrave.

Mayes, David G., and Aarno Liuksila, 2003, *Who Pays for Bank Insolvency?*, Basingstoke: Palgrave-Macmillan.

Mayes, David G., and Jukka Vesala, 2000, "On the problems of home country control," *Contemporary Politics and Economics of Europe*, Vol. 10, No. 1, pp. 1–26.

Moe Thorvald G., Jon A. Solheim, and Bent Vale, 2004, "The Norwegian banking crisis," Bank of Norway, occasional paper, No. 33.

Morrison, Alan, and Lucy White, 2004, "Is deposit insurance a good thing, and if so, who should pay for it?," Center for Economic Policy Research, discussion paper, No. 4424, June.

Orr, Adrian, 2004, "Bank deposit insurance and why we don't have it in New Zealand," available from www.rbnz.govt.nz/banking/regulation/0154814.html, downloaded July 27.

Roldan, Jose Maria, 2004, "Committee of European Banking Supervisors," April 26, available at http://www.c-ebs.org/SP2.htm.

Rosengren, Eric, and Joe Peek, 2000, "Collateral damage: Effects of the Japanese bank crisis on real activity in the United States," *The American Economic Review*. Vol. 90, No. 1, March, pp. 30–45.

Schoenmaker, Dirk, 2003, "Financial supervision: From national to European?," *Financial and Monetary Studies*, Vol. 22, No. 1.

Schoenmaker, Dirk, and Sander Oosterloo, 2004, "Cross-border issues in European financial supervision," paper presented at Bank of Finland/CASS Conference on The Structure of Financial Regulation, September 2–3.

Schwierz, Christoph, 2004, "Economic costs associated with the Nordic banking crises," in Moe *et al.*, pp. 117–1444.

Stern, Gary, and Ron J. Feldman, 2003, *Too Big to Fail*, Washington DC: Brookings Institution.

Wood, Geoffrey, 2004, "Regulation or governance," City University, mimeo.

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Comments on Key Policy Challenges in Financial Institution Resolution: Additional Complexities

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Financial markets today are dominated by large complex financial institutions (LCFIs). These LCFIs span international boundaries and functional areas. The financial markets in which LCFIs function are increasingly international and functionally interrelated. In contrast, regulatory and supervisory agencies are national and in some countries, such as the U.S., separated by functional area.[1] The insolvency administrators, who oversee and control the resolution of LCFIs when they become financially distressed, be they courts or administrative agencies, are also national. Again, in some countries, including the U.S., insolvency administrators are divided by functional

[1]In the U.S., depository institutions (banks, in the U.S. sense) are supervised, depending on their charter, by the Federal Reserve, the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), or state banking regulators. Thrifts are supervised by the Office of Thrift Supervision (OTS). Securities broker/dealers (investment banks in U.S. taxonomy) are supervised by the Securities and Exchange Commission (SEC). Insurance companies are supervised by state insurance regulators. Futures markets and their participants are supervised by the Commodities Futures Trading Commission (CFTC). Federal Home Loan banks are supervised by the Federal Housing Finance Board. The housing goverment sponsored entities (GSEs), Freddie Mac and Fannie Mae, are supervised by the Office of Federal Housing Enterprise Oversight (OFHEO). Some significant financial market participants, most notably hedge funds, are effectively unsupervised. Bank and financial holding companies are supervised by the Federal Reserve. Where subsidiaries involved in different functional areas are combined into holding companies, supervision is divided with different agencies supervising different divisions.

area.[2] Thus, there is an inconsistency between the organizational structure of LFCIs and financial markets on the one hand, and regulatory and legal structures on the other. This inconsistency presents a number of obstacles to effective supervision and resolution of LCFIs.

The regulatory, supervisory, and legal frameworks in which financial institutions operate should seek to achieve three desiderata: (1) the timely detection and forestalling of financial distress; (2) predictable and timely closure of insolvent financial institutions; and (3) the orderly resolution of insolvent firms. Achieving these three objectives decreases the incidence and costs of financial distress and provides legal certainty. It may also mitigate the risk of systemic disruptions to financial markets if intervention is timely and resolution is effective and is perceived to be in the interests of counterparties.[3] LCFIs present challenges to achieving each of these three objectives.

Timely intervention, closure, and resolution require timely, accurate, and comprehensive information about the financial condition of the entire firm. The ability to quickly move assets between subsidiaries (sometimes at the direction of supervisors) to favor one subsidiary at the expense of another in the event of insolvency, or (more rarely) to perpetrate fraud, makes piecemeal examination and supervision less effective in detecting insolvency. Potential pre-insolvency asset shifting and cross-firm reputation risks make isolating the effects of financial distress to "other" parts of the firms difficult and uncertain. Large derivatives positions, which characterize many of the LCFIs, and their attendant legal treatment under insolvency, pose a particularly severe burden on supervisors to intervene in a timely manner.[4] Effective supervision requires both the proper incentives for supervisors

[2]In the U.S., banks are resolved by the FDIC, though the closure decision lies with their primary regulator. Broker/dealers are resolved by the SEC. Insurance firms are resolved in state courts under state insurance laws. Most other financial firms (including bank and financial holding companies) are resolved under federal bankruptcy laws in federal bankruptcy courts. The GSEs may be placed into conservatorship under the supervision of OFHEO, but no legal mechanism exists for liquidating them. Where holding companies contain banks, broker/dealers, or insurance companies, each relevant jurisdiction resolves its relevant constituent part in separate (and sometimes adversarial) proceedings. Where a distressed firm spans multiple national jurisdictions, multiple insolvency proceedings will be initiated. The rules governing cooperating across jurisdictions are complicated and not always cooperative (see Baxter, 2005).

[3]See Bliss (2003).

[4]See Bliss (2003) and Bergman *et al.* (2003).

to act and effective mechanisms for them to intervene in a timely manner. Orderly resolution requires cooperation across resolution agents in different jurisdictions and sufficient time to collect information, value assets and claims, and maximize the recoveries for the benefits of all creditors.

1. Barriers to Effective Supervision

Barriers to effective supervision can arise when there is a misalignment of risks and responsibilities. Supervisors face a number of incentive problems *vis-à-vis* their own constituencies and nominal objectives.[5] LCFIs present a number of particular problems for supervisory incentives. One of the problems is "who supervises?" Unlike the U.S., where supervisory responsibilities remain divided (with limited mechanisms for effecting information sharing and inter-agency cooperation), the European Union (EU) has clarified this question by mandating home country supervision of EU-parent financial institutions operating across EU national boundaries. However, this leaves a number of incentive problems unresolved. Mayes (2005) addresses problems that arise through the interaction of deposit insurance schemes and home country supervision. The basic problem lies in the disconnect between who is supervising the bank and who potentially bears the losses if the bank fails. The structure of deposit insurance in the EU is evolving as the issues that Mayes raises are worked through and the expansion of EU banks within the EU, notably Nordea, bring these issues to the forefront.

Much of the discussion to date, including Mayes (2005), has focused on the problems of depositors and deposit insurance. Potential political problems may arise if tax payers in one country are asked to underwrite deposit insurance losses arising from the paying off depositors in another country.[6] On the other hand, even if deposit insurance schemes can be arranged to distribute costs equitably across countries, there remains the problem of other externalities. The failure of a small bank is likely to have limited local consequences and therefore present few problems for local supervisors. However, a bank may be "small" in its home country, but "large" in the host country. In such situations, the incentives of the home country regulators

[5]See Bliss (2004) and Eisenbeis (2004).

[6]Similar discontent and ensuing political pressures may arise in deposit insurance schemes that have solvent banks picking up the losses incurred in resolving insolvent banks.

and resolution authorities — who control the closure and resolution — and those of the host country regulators — who are effectively powerless to influence the closure decision and resolution, though they must deal with the consequent disruptions to their financial markets — will not necessarily be aligned. This scenario could play out either through home country regulators delaying closure or closing preemptively. Gambling for resurrection may be appealing if the bulk of the (perhaps exacerbated) costs of failure would be borne elsewhere. Alternatively, a home country supervisor may see prompt closure and liquidation as the most effective means of dealing with a distressed small (in the home country) bank, while the host country regulators might prefer to keep the bank operating by selling it, perhaps at a subsidized price, or even providing some form of tax-payer subsidized recapitalization.

It is important to keep in mind, however, that deposits are not the sole or even primary liability of financial institutions or even necessarily of banks (in the U.S. sense), particularly when it comes to LCFIs. For instance, Citibank, the major bank within Citicorp (the holding company), holds only 46 percent of the assets of the holding company.[7] Its bank deposits account for 81 percent of its bank liabilities (40 percent of holding company liabilities). But of these, only 35 percent are classified as domestic deposits.[8] Thus, only a small fraction of the liabilities of Citicorp (14 percent of total holding company liabilities) are deposits in the sense being considered in most discussions. Nonbank LCFIs, such as Fannie Mae, have no deposits (not being depository institutions), though there is considerable concern that in the event of problems their creditors may be prove to be effectively insured.[9] Since non-depository creditors are not negligible at LCFIs, any

[7]These data come from the National Information Center, Federal Reserve web site. Data are as of June 30, 2004.

[8]Under U.S. law only domestic deposits meet the definition of "deposits" required to qualify for deposit insurance and to enjoy protection depositor preference laws. Remaining types of "deposits", including foreign deposits, are general creditors.

[9]The credit spreads on GSE debt is commonly thought to reflect implicit guarantees that the GSEs would not be allowed to fail. This is not an entirely unwarranted assessment, notwithstanding frequent assertions that the GSE debt is not guaranteed. GSEs importance in both mortgage and derivatives markets raises the possibility that Fannie Mae and Freddie Mac may prove too-big-to-fail. Given their large derivatives positions and the legal uncertainty surrounding their status, they may prove too complex to resolve in an orderly manner, leaving bailout as the only viable option. Their political clout may further add to the probability of bailout.

closure and resolution policy should take their interests into account. The alternative is that non-depository creditors may contract to protect their interests in ways that reduce the ability of firms to manage their balance sheet, particularly in times of financial stress,[10] and then bolt at the first sign of trouble, reducing the options of regulators to intervene constructively to prevent the insolvency of a weakened firm.

Transnational deposit insurance issues are not the only factor impacting the effectiveness of supervision of LCFIs. Where multiple agencies are involved in supervision, either collectively or separately, a number of problems arise. Division of supervisory responsibilities arises from functional supervision of different lines of business within the same corporate entity (for example, in the U.S.), host country supervision of foreign-parented subsidiaries (as distinct from home country supervision of branches of foreign parents), and from separation of supervision, deposit insurance, lender of last resort, and ultimately political authority to impose costs on tax payers. Goodhart (2005) examines the coordination problems that arise from the division of responsibilities and interests that arise from the separation of authority over various functions. His focus is primarily within country, though the issues he raises can only be exacerbated when a multi-national LCFI becomes distressed.

Various efforts have been made to mitigate the effects of divided supervision. The EU clarifies supervisory responsibilities by locating them with the home country supervisory authority. This does not solve the problems of subsidiaries and extra-EU LCFIs. In the U.S., the Federal Reserve is granted umbrella supervisory authority for holding companies and considerable powers to intervene should it feel the holding company is in financial difficulty. These complex structures are predicated on the assumption of harmonization of objectives, alignment of interests, and complete and useful information sharing.

It is unrealistic to assume that these prerequisites are fully met. Different regulatory agencies have different objectives. Banking agencies are usually concerned with safety and soundness (of banks) and systemic risk, but are apt to take a narrow view of who is to be protected (depositors and deposit insurer), at least until a crisis occurs. Securities regulators may be more concerned with investor protection from fraud, insider trading, and market manipulation than in the financial soundness of securities firms.

[10]The use of collateral, restrictive covenants, and due-on-downgrade provisions are examples of such defensive contracting.

State insurance regulators may be attuned to the political calculus of price and business practice regulation. In many cases these differential biases are statutorily mandated. However, the hypothetical business models that underlie legislation and regulations — for instance, that banks take (domestic) deposits and make loans, and little else, and that securities dealers do not make loans — are at variance with the realities of modern financial markets.

Legally-mandated inconsistent objectives are exacerbated by institutional and social/psychological factors. Goodhart (2005) details the conflicting institutional incentives entailed by separating supervision, deposit insurance, and lender of last resort (and tax-payer funded bailout) functions. However, even where objectives may be expected to be aligned, for instance between the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation, inter-agency social dynamics sometimes impede cooperation and information flows.[11] Differences in objectives cause differential information to be collected by the various regulators. This makes it difficult, if not impossible, to consolidate information across operating units at any but the crudest level. Such highly aggregated information may be adequate when a firm is doing well, but is apt to be insufficient when the firm becomes financially distressed. Judgments about whether and how to intervene and how to best resolve a distressed firm requires detailed consolidated information about the firm's assets, liabilities and risk exposures. Insufficiently detailed consolidated information is apt to reduce the options of resolution authorities and increase the costs of liquidating assets.[12]

2. Barriers to Orderly Resolution

Bankruptcy procedures have evolved to solve a basic problem: how to maximize the value of the firm for the benefit of all creditors. Central to this process is the temporary "staying" of creditor's claims while the courts collect the firm's assets and creditor claims and then decide how best to

[11]For example, when Superior Bank was collapsing the OTS, the responsible supervisor, impeded efforts by the FDIC to gain access to the firm to conduct their own assessment.

[12]Resolution of financial firms tends to be rapid and the ability to realize the value of assets being sold will depend on the availability of detailed information on which to base valuations. Regrettably, experience has shown the distressed firms cannot be relied on the have adequate accounting systems.

resolve the firm. Two basic options (with some variants) are open to the resolution agent: to liquidate the firm, realizing the highest possible value for the assets under the circumstances, and pay off the valid creditors' claims under some priority rule; or, if it is determined that the firm has going concern value that would be lost in liquidation, to renegotiate the creditors' claims to rehabilitate the firm and return it to economic viability (variously termed conservatorship, administration, or, in the U.S., Chapter 11). These alternatives rely critically on the ability to stay claims. Absent such stays, creditors would rush to seize and liquidate assets. Stripped of its assets, the firm would cease to exist (and going concern value would be lost). Those creditors who have successfully seized assets would have no incentive to maximize the liquidation value of those assets once their own claims were covered as any excess must usually be paid back to the insolvent firm.

The existence of multiple resolution authorities undermines the goal of an orderly and coordinated resolution. Two approaches exist to handling multi-jurisdiction insolvencies: ring fencing and single entity approaches. Under ring fencing, multiple, parallel legal processes proceed independently, each seeking to resolve the claims of creditors under their purview using assets under their immediate control. Under a single entity approach, a lead resolution authority is agreed and authorities in other relevant jurisdictions take subsidiary (ancillary) roles, acting as agents of the lead authority. The U.S. practices ring fencing when foreign banks operating in the U.S. become distressed. When a U.S. bank with foreign operations becomes insolvent, the U.S. adopts a single entity approach.[13] The EU has moved towards having the home country resolution authority take the lead with the EU host countries performing ancillary roles. The practical effect of this mandated cooperation is mitigated by giving force to local laws in the ancillary proceedings. Cooperation may be conditioned on the desire to ensure that domestic creditors are left no worse off than they would have been under a local proceeding.[14]

[13]U.S. regulators have been successful in applying the ring fence approach in the past, due in large part to the U.S. being a natural locus for foreign banks' investment assets. It is unclear whether foreign jurisdictions have been willing to cooperate when the FDIC has asserted claims on foreign-located assets that would naturally have the effect of lowering the payments to foreign creditors.

[14]When BCCI failed, most of BCCI's EU assets were located in the U.K. U.K. courts cooperated with the Luxemburg court overseeing the European bankruptcy proceedings, but applied U.K. laws and procedures. This had the effect of benefiting creditors of the U.K. offices of BCCI over other creditors.

Ring fencing naturally discriminates against foreign creditors of the insolvent firm. This in turn makes cooperation with ring fencing jurisdictions virtually impossible. "No worse off" caveats to ancillary proceedings may also lead to efforts to control assets locally rather than pooling them for the common benefit. In either case, the desire to seize control of assets makes administration (conservatorship) difficult as the freedom of the firm to continue transacting may be severely circumscribed. Evidence from the only large(ish) multinational bank failure to date, Bank of Credit and Commerce International (BCCI) in 1991, suggests that agents will act in national self-interest to the detriment of foreign creditors rather than cooperating for the common good.[15] This creates strong disincentives to cooperation and undermines the collective action needed to effect a rehabilitation of a distressed firm. Thus, liquidation of a distressed multinational LCFI is highly probable, even if the firm has considerable going concern value to be lost.

Likewise, barriers exist to cooperative attempts at early intervention to prevent the dissolution of a distressed financial firm. While central banks (lender of last resort) and politicians (committing tax payer funds) may be willing to act to prevent or ameliorate the catastrophic failure of a large systemically important domestic financial institution, there is little evidence that they will be willing to commit domestic funds to the benefit of potential foreign creditors. A similar dynamic between multiple functional resolution agents in the U.S. has the same effect. The resolutions of MCorp (1989) and the Bank of New England Corporation (BNEC) (1991), both large failed multi-bank holding companies, demonstrate the lack of coordination across resolution agents. Both produced extensive (and expensive) litigation between bankruptcy trustees and regulators over conflicting claims to the assets.[16]

An additional obstacle to the orderly resolution of LCFIs results from the special treatment accorded derivatives contracts under insolvency laws. As Grosshandler (2004) details, the treatment of derivatives in the event of insolvency is markedly different that that afforded other creditors' claims.

[15]When BCCI failed, the U.S. unilaterally seized domestic assets and paid off domestic creditors in full. This reduced recoveries to other creditors.

[16]BNEC involved the sale of non-bank assets, the proceeds of which were down-streamed to the distressed bank subsidiary and later seized by the FDIC. Both cases involved extensive borrowing by the distressed subsidiary from solvent sister subsidiaries, resulting in the latter's insolvency (and the seizure of their assets) when the distressed subsidiary was closed and the FDIC (standing in for the bank) defaulted on the inter-subsidiary loans.

With the possible (and untested) exception of derivatives involving insolvent U.S. banks as counterparties, the stays applicable to most financial contracts do not apply to derivatives and related collateral. Thus, derivatives counter parties to insolvent (or even merely distressed) firms may unilaterally close-out and terminate their contracts without waiting for court approval. They may also immediately liquidate any collateral pledged under those agreements.

This ability of derivatives counter parties to effectively run becomes critically important where the distressed firm has substantial derivatives positions. Even if the close-out and liquidation of collateral leave the firm still solvent, the loss of business and ability to manage risk may undermine its economic viability. A substantial fraction of LCFIs have large derivatives' positions.[17] Furthermore, sudden closeout of a large derivatives dealers positions may have a destabilizing effect on derivatives market, raising systemic risk concerns.[18] The threat of a derivatives run may put pressure on regulators to intervene prior to the triggering of close-out (as happened in the case of Long-Term Capital Management).

3. Summary

The underlying reality is that we have resolution procedures originating in the 18th and 19th centuries, regulatory structures based in the late 19th and early 20th centuries, and financial firms operating in markets that have rapidly evolved in the late 20th century and into the 21st century. The problems facing the resolution of LCFIs discussed herein and in Goodhart (2005) and Mayes (2005) are in part inevitable and in part historical. The underlying legal issues detailed in Grosshandler (2004) reflect previous, perhaps unconscious, tradeoffs that are now deeply engrained in the structure of financial markets.

Resolution processes and (at least in the U.S.) regulatory structures are unlikely to change appreciably. The forces of nationalism are strong and the entrenched interests of regulatory agencies make change difficult. The peculiar treatment of derivatives is deeply embedded in the structure

[17]These exposures may exceed the firm's capital. In 2004, the market value of bilateral netted derivatives credit exposures at J.P. Morgan totaled 738 percent of its risk based capital. For Citibank the figure was 240 percent. (OCC, 2004.)
[18]See Bliss and Kaufman (2004).

of derivatives markets and cannot be undone without great risk to the functioning of these markets.[19] Given the difficulty in enacting mechanisms for achieving a true cooperative and coordinated resolution of insolvent LCFIs, an even greater emphasis must be placed on early identification of LFCI distress and coordinated intervention by regulators. The problems of coordination become immeasurably more difficult once it is no longer clear that the distressed firm is still solvent. However, early intervention, particularly for nonbank financial institutions, may have to rely more on moral suasion and voluntary cooperation than on legal mandate.

References

Baxter, Thomas C., 2005, "Cross-border challenges in resolving financial firms," in *Systemic Financial Crisis: Resolving Large Bank Insolvencies*, D. Evanoff and G. Kaufman (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd.

Bergman, William J., Robert R. Bliss, Christian A. Johnson, and George G. Kaufman, 2003, "Netting, financial contracts, and banks: The economic implications," in *Market Discipline in Banking: Theory and Evidence*, Vol. 15, *Research in Financial Services*, G. Kaufman (ed.), Amsterdam: Elsevier Press, pp. 303–334.

Bliss, Robert R., 2004, "Problems of multiple regulators and insolvency regimes," presented at the Bank of Finland conference on The Structure of Financial Regulation, Helsinki, working paper.

———, 2003, "Resolving large complex financial organizations," in *Market Discipline in Banking: Theory and Evidence*, Vol. 15, *Research in Financial Services*, G. Kaufman (ed.), Amsterdam: Elsevier Press, pp. 3–31.

Bliss, Robert R., and George G. Kaufman, 2004, "Derivatives and systemic risk: Netting collateral and closeout," Loyola University Chicago, working paper.

Eisenbeis, Robert, 2004, "Agency problems in the design of bank regulatory and supervisory structures," presented at the Bank of Finland conference on The Structure of Financial Regulation, Helsinki, working paper.

Goodhart, Charles A. E., 2005, "Multiple regulators and resolutions," in *Systemic Financial Crisis: Resolving Large Bank Insolvencies*, D. Evanoff and G. Kaufman (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd.

[19]Bliss and Kaufman (2004) argue that the size and attendant liquidity of the derivatives markets are inexorably linked to the protection of netting, collateral and closeout rights, and that the current highly concentrated dealer market is in part made possible by these protections.

Grosshandler, Seth, Sandra M. Rocks, Penelope Christophorou, David E. Aman, Malda Hibri, Gary Silber, and Trevor Lain, 2004, "Securities, forward, and commodity contracts and repurchase and swap agreements under U.S. insolvency laws," paper presented at the conference Systemic Financial Crises: Resolving Large Bank Insolvencies, Federal Reserve Bank of Chicago, September 30–October 1.

Mayes, David, 2005, "The role of the safety net in resolving large financial institutions," in *Systemic Financial Crisis: Resolving Large Bank Insolvencies*, D. Evanoff and G. Kaufman (eds.), Singapore: World Scientific Publishing Co. Pte. Ltd.

Office of the Comptroller of the Currency (OCC), 2004, "OCC bank derivatives report, second quarter 2004", Washington, DC, available at www.occ.gov/ftp/deriv/dq204.pdf.

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Lessons from Case Studies of Large Insolvencies

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BCCI & Barings: Bank Resolutions Complicated by Fraud and Global Corporate Structure

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1. Introduction

Although countries differ with regard to bankruptcy procedures, there appears to be widespread agreement on the goals that such procedures should accomplish. This paper draws on the examples of two international banks that failed due to fraud, the Bank for Credit and Commerce International (BCCI) and Barings, to show how fraud and a global corporate structure can undermine the effectiveness of bankruptcy procedures in achieving these goals.

Hart (2000, p. 3–5) has identified three goals that all good bankruptcy procedures should meet.[1] First, a good procedure should deliver an *ex post* efficient outcome that maximizes the value of the bankrupt business that can be distributed to stakeholders. Second, a good procedure should promote *ex ante* efficient outcomes by penalizing managers and shareholders adequately in bankruptcy states so that the bonding role of debt is preserved. Third, a good procedure should maintain the absolute priority of claims 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 states than in normal states.[2] These objectives apply equally to banks and nonfinancial corporations. But, in the case of banks, a fourth

[1]Given that economists do not have a satisfactory theory of why parties cannot design their own bankruptcy procedures, Hart (2002, p. 6) is careful not to describe these procedures as "optimal".

[2]Hart (2002, p. 8) also allows for the possibility that it may be useful to reserve some value for shareholders in order to constrain moral hazard incentives.

objective is usually appended: a good bankruptcy procedure also limits the costs of systemic risk. Thus a good bankruptcy procedure for a bank is one that maximizes the *ex post* value of the firm's operations subject to the constraints that management and shareholders are adequately penalized, *ex ante* repayment priorities are retained and systemic costs are appropriately limited.

Kaufman (2004) has recently proposed a four-part procedure for resolving large insolvent banks that is largely consistent with these objectives.[3] First, prompt recognition of economic insolvency and legal "closure" according to a disclosed, explicit "closure rule". (This limits losses penalizes shareholders and managers in the event of insolvency.) Second, prompt estimation of recovery values and the corresponding losses to be allocated across uninsured depositors and other creditors according to *ex ante* priority of repayment. (This maintains repayment priorities in the bankruptcy state and helps limit systemic costs by giving creditors prompt access to their funds.) Third, prompt reopening of the bank under temporary government agency control with full guarantee of existing deposits net of imposed losses, if any. (This also helps limit systemic costs in two ways: (1) by permitting the bank's viable customers, including counterparties in risk transfer instruments, which must actively mange their positions, to continue doing business without interruption; and (2) by protecting depositors from additional losses and thereby, removing their incentive to run.) Fourth, prompt privatization through recapitalization or liquidation. (This facilitates realization of the maximum total value for the bank either through a merger or piecemeal liquidation.)

Kaufman stresses prompt corrective action because delay may prevent even good bankruptcy procedures from accomplishing the four goals. Insolvency procedures tend to be initiated later than they should be, often long after a bank is deeply insolvent. Not only does this directly increase the loss to be allocated across creditors, but also this may contribute to an acceleration of losses if the insolvent bank gambles for resurrection. In addition, once initiated, resolution tends to move very slowly. This may further exacerbate losses if assets cannot be adequately safeguarded and actively managed. Moreover, it increases the probability of systemic spillovers to

[3] Kaufman and Seelig (2002) provide a broader discussion of the need for speed in providing insured depositors and other creditors with access to their funds. Mayes (2004) and Mayes and Liuksila (2004) have made similar proposals.

the extent that counterparties are unable to clarify and hedge their positions, borrowers are unable to make use of their collateral or draw on outstanding commitments and depositors lose access to their funds.

Fraud has the potential to undermine the effectiveness of even a good insolvency procedure. A successful fraud may delay recognition of insolvency long after the point of economic insolvency. Moreover, it impedes the insolvency process once initiated in several ways. It may delay procedures by necessitating a lengthy process of discovery to reconstruct accounts identify assets and institute forfeiture proceedings. The *ex ante* priority of claims may be disrupted if fines or criminal penalties are imposed before creditors are paid. The loss of reputation associated with fraud will erode the remaining going concern value (if any) and may reduce the amounts outsiders are willing to bid for the bank's assets. Furthermore, the entire process will certainly be more heavily lawyered and the transactions costs greater than if the an insolvency of comparable magnitude occurred without fraud.

Similarly, the international scope of a bank's operations may also impede the effectiveness of good insolvency procedures. The fragmentation of oversight that is inherent in a global network is likely to delay recognition of insolvency, quite apart from the expanded scope that it affords managers to conceal insolvency if they wish to do so. Once insolvency is recognized, moreover, it is much more difficult to institute insolvency proceedings. First is the question of which jurisdiction initiates the proceedings. The jurisdiction in which the bank is chartered? The jurisdiction in which most of the bank's assets are located? The jurisdiction from which the bank is managed? (As we shall see in cases below, these need not be the same.) A related question, since the answer may vary from jurisdiction to jurisdiction, is what entity initiates the insolvency proceedings. The creditor? A bankruptcy court? A regulator? Or the insolvent bank?

Moreover, it is quite possible for insolvency proceedings to be initiated more or less simultaneously in several different jurisdictions that have conflicting rules on how the resolution should be conducted including such details as the perfection of collateral, the right of set-off (if any) and the recognition of close-out netting. At a minimum there will be substantial coordination challenges with regard to information sharing, the allocation of business units to legal entities and regulatory domains, procedural differences in the acceptance of claims against the bankruptcy estate, differences in the treatment of custody assets, and differences in repayment

priorities such as depositor preference schemes or subrogation rights of the deposit insurer (if any). Even under ideal conditions, the resolution of an international insolvency will incur much heavier transactions costs than the resolution of a purely domestic institution with comparable losses.

BCCI and Barings provide interesting examples of these challenges to efficient resolution. Each failed because of fraud and each had an international network of operations. But there are substantial differences as well. While BCCI failed because of a massive, widespread fraud, Barings succumbed to fraud by a single individual. And, while BCCI designed an international organizational structure to defy external scrutiny, Barings had adopted a much more transparent international structure that, nonetheless, escaped effective oversight by an external entity. First we will review the collapse of BCCI. Then we will take a closer look at Barings.

2. BCCI

With the benefit of years of investigations it now appears that BCCI's financial statements were falsified ever since the bank was founded in 1972 (Basel Committee, 2004, p. 49). That this escaped detection for nearly twenty years shows how effectively the complex international corporate structure shielded it from scrutiny by external accountants, supervisors or regulators. From the outset, BCCI adopted a dual banking structure. The nonbank holding company established in Luxembourg in 1972 (BCCI Holdings SA), under the protection of very tight secrecy laws, owned two separate banks that were licensed and supervised in two separate jurisdictions, well insulated by bank secrecy laws: BCCI SA in Luxembourg and BCCI Overseas in the Cayman Islands.

Although BCCI SA was registered as a bank in Luxembourg, its banking business was conducted not in Luxembourg, but through 47 branches in 13 countries. BCCI Overseas did conduct a banking business in the Cayman Islands as well as through 63 branches of BCCI Overseas in 28 countries. As the Shadow Financial Regulatory Committee (1991) noted, "BCCI's headquarters were established in countries with weak supervisory authorities, strong secrecy laws, and neither lenders of last resort nor deposit insurers who would have financial reasons to be concerned about the solvency of banks that are chartered in their jurisdictions." Contrary to what the organization chart seemed to imply, neither Luxembourg nor the Cayman

Islands was the operational headquarters of BCCI. Instead, most managerial decisions were made in London with oversight from the founder, Aga Hassan Abedi. After Abedi sustained a serious heart attack in 1978, his chief lieutenant, Swaleh Naqvi took charge until late in 1990 when investors in Abu Dhabi acquired a controlling interest and shifted the locus of decision making to Abu Dhabi.[4]

This dual banking structure made it difficult for any one supervisory authority to monitor the activities of BCCI on a consolidated basis. To further fragment external scrutiny of the bank, moreover, BCCI hired separate auditing firms for each bank, a situation which continued into the late 1980s when Price Waterhouse refused to sign the accounts unless it could audit the entire group.

The Basel Concordat on Banking Supervision gave Luxembourg responsibility for exercising consolidated supervision over the BCCI group. But since BCCI conducted no banking business in Luxembourg and Luxembourg did not offer deposit insurance or lender of last resort facilities to the group, the local bank supervisory authority lacked an incentive to oversee BCCI. Moreover, it lacked the resources to monitor the worldwide operations of BCCI. It urged the Bank of England to accept the responsibility because the operational headquarters for the BCCI group and its largest branch network were in England. The Bank of England, however, was unwilling to accept the burden of supervising the global operations of a bank that it did not charter.

After the collapse of Banco Ambrosiano in 1983, a bank with a corporate structure remarkably similar to that of BCCI, the Basel Concordat had been revised to deal with institutions that had adopted corporate structures that exploit gaps in the international supervisory framework. Unfortunately, this proved largely ineffectual with regard to BCCI. BCCI had already entered most major markets before the revision of the Concordat in 1983. When a foreign bank seeks entry, the local supervisory authorities have significant leverage in applying the fit and proper test. But once the foreign bank has received a banking license, the scope for exercising discretion is diminished. In most jurisdictions the authorities must have evidence that the bank has committed serious violations of local laws or is insolvent before a license

[4]Much of what we know about how the massive fraud was perpetrated is thanks for the plea bargain Naqvi reached with the U.S. authorities. Because Naqvi was "under restraint" in Abu Dhabi, he did not give testimony to the Bingham Commission (Bingham, p. 81).

can be revoked and any such ruling is sure to be tested in court.[5,6] Finally, supervisors are understandably reluctant to take actions that diminish the prospects that depositors will be repaid and so, in the absence of objectively verifiable evidence that BCCI was insolvent, they permitted the bank to continue operations.

Since the supervisory authorities believed that they lacked the authority to compel BCCI to modify its corporate structure so that it could be supervised on a consolidated basis, they improvised a cooperative oversight structure, a regulatory "college", to gain a broader view of the activities of the bank.[7] The college included representatives from the Caymans, France, Hong Kong, Luxembourg, Spain, Switzerland, and the United Kingdom.[8] The U.S. Federal Reserve Board (the Fed) was not a member of the group, but participated occasionally in an observer status and did share information with the college (Group of 30, 1998, p. 86). This improvised arrangement proved wholly inadequate to the challenge of monitoring BCCI.

The discovery and disclosure of the massive fraud at BCCI and the subsequent closure of the group occurred because of the confluence of three different pressures. First, in June 1990 Luxembourg gave notice to

[5]On July 6, 1992, the Basel Committee (1992) strengthened the Concordat in order to prevent a repetition of the BCCI scandal. The new feature was to require that a bank obtain the consent of both its home country regulator and host country regulator to establish a branch in a jurisdiction outside its home country. And if the host country is uncomfortable with the quality of home country supervision, it can impose "restrictive measures" on the branch. Such measures may range from closing the branch to obliging the branch to be restructured as a separately capitalized subsidiary to setting a deadline for the bank and its home supervisory authority to meet acceptable standards.

[6]Subsequent changes in legislation in many countries gave regulators greater powers. For example, in the United States the Foreign Bank Supervision Enhancement Act of 1991 gave the supervisory authorities greater powers to deal with an international banking group that is not supervised on a consolidated basis by a competent authority. For example, the Federal Reserve Board obtained primary supervisory responsibility for all foreign banking entities in the United States. The post-BCCI Directive in the European Union (EU) strengthened the powers of EU host countries in dealing with foreign banks seeking entry. Among other features, the host country would be required to determine whether the banking group's home-country supervisors have the responsibility to monitor the banks' global operations on the basis of verifiable consolidated data and the authority to prohibit corporate structures that impede supervision and to prevent banks from establishing a presence in suspect jurisdictions.

[7]See Bingham (1992) for an account of the regulatory college and its seven meetings.

[8]Understandably, other countries which hosted offices of BCCI felt that their exclusion from information flows within the college unfairly contributed to losses experienced by their residents.

BCCI that it must leave Luxembourg within twelve months. Managers of BCCI and the college believed that the group would collapse if it could not establish a new regulatory home (Bingham, 1992, p. 86). This led to an attempt to rescue BCCI with subsidies from Abu Dhabi and a new three-part organizational structure with separately incorporated subsidiaries in Abu Dhabi, the Cayman Islands, and the United Kingdom. None of these three potential host countries, however, was willing to take over responsibility for consolidated supervision of the group.

Second, pressure from the New York District Attorney's office, Congress, and the Fed with regard to on-going investigations concerning charges of money laundering, drug trafficking, wire fraud and the concealment of BCCI's control over First American, Independence Bank, and the National Bank of Georgia.[9] It was anticipated that revelation of these charges would make it impossible for BCCI to continue operation.[10]

Third, irregularities in the 1990 accounts for BCCI led the Bank of England to commission a report from Price Waterhouse, which by this time had become the sole external auditor of BCCI. A draft of this Section 41 Report was delivered to the Bank of England on June 22, 1991. It described fraud on a massive scale, including (Bingham, 1992, p. 140) "(1) falsification of accounting records; (2) external vehicles used to route fund transfers and 'park' transactions; (3) the use of nominee and hold-harmless arrangements; (4) the fraudulent use of … [funds belonging the rulers of Abu Dhabi]; (5) the creation of 70 companies to facilitate and disguise lending to the Gulf Group; (6) collusion with third party banks to make loans to BCCI customers, so as to avoid disclosure of such lending on BCCI's balance sheet; [and] (7) collusion with customers and others to give false

[9]Senator John Kerry, acting as chairman of the Senate Foreign Relations Committee's Sub Committee on Terrorism, Narcotics, and International Operations wrote to Alan Greenspan about BCCI on April 12, 1991. He emphasized BCCI's lack of consolidated supervision and objected that the reorganization of the group into three banks would still not provide consolidated supervision. He urged the Fed not to approve any transfer of assets of BCCI or Credit and Commerce American Holdings until the Fed could be satisfied that the assets would be subject to the oversight of a single, consolidated supervisor. (See Bingham, p. 123.)

[10]The U.S. authorities were thought to be critical of their European colleagues (Bingham, p. 126) because they "had not inspected BCCI sufficiently rigorously, … had enabled BCCI to exploit the fragmented structure of the group so as to indulge in intra-group transactions designed to deceive the U.S. authorities, … had taken too narrow a view of their local responsibilities, … had failed to keep the U.S. authorities informed, … had been insufficiently ruthless in pursuing the truth, and … had placed too much reliance on the auditors."

confirmations to the auditors of fictitious and non-recourse loans and loans received as nominees ….” Price Waterhouse concluded they could not give an opinion on the 1990 accounts and could not even be sure that BCCI SA was a going concern.

On July 5, at mid-day the Bank of England applied to the U.K. court for appointment of a provisional liquidator. The Luxembourg authorities took parallel action as did the Governor of the Cayman Islands. The U.S. quickly followed as did many other jurisdictions in an attempt to safeguard the bits of BCCI that were within their control.

The closure of BCCI was accomplished with remarkably little impact on financial markets.[11] Not only was this due to the care with which the authorities implemented the intervention, but also to the fact that most sophisticated market participants had cut lines to BCCI long before. Moreover, BCCI was not a major participant in payment and settlement systems nor was it active in the over the counter (OTC) derivatives markets. The aftermath, however, left customers of the 380 banking offices of BCCI in nearly 70 countries, mostly retail depositors,[12] to deal with the chaos of an international bankruptcy proceeding. Only some of these deposits were insured and none of the deposit insurance schemes gave depositors immediate access to the insured amount.[13]

The Basel Committee’s (1992b) review of the insolvency liquidation of BCCI identified four major conflicts in national insolvency regimes that complicated the liquidation of the BCCI’s assets and reduced the amount that could ultimately be distributed to creditors.

First, different countries may have very different insolvency regimes for banks and branches. The United States follows a separate-entity doctrine in which the agency or branch of a foreign bank is treated as if were a separately incorporated legal entity for purposes of liquidation (Basel Committee, 1992b, p. 2). Creditors of a U.S. agency or branch would be paid from the assets of the agency or branch and other assets of the bank in the United States as well as all of the assets of the agency or branch worldwide that the

[11]This section draws heavily from Herring (2003).

[12]Several local authorities in the U.K. and third world central banks also suffered loss.

[13]The British scheme offered coverage for 75 percent of sterling deposits up to a limit of £20,000. Jackson (1996, p. 40) notes this largest payout from the Deposit Protection Fund, almost £100 million. Oddly, the amount paid out appears to have been less than what depositors were entitled to claim. Under the British scheme, only sterling-denominated deposits were eligible.

U.S. liquidator could marshal. Only after all of the claims of creditors of the U.S. agency or branch were satisfied would creditors of other offices of the bank have access to the remaining assets of the agency or branch, if any.

In contrast, Luxembourg and the United Kingdom follow a single-entity doctrine in which the bank and all of its foreign branches are treated as offices of a single corporate entity. All creditors of the bank and its branches worldwide are entitled to participate in the liquidation, with no preference given to claims of the creditors of a particular branch. The attempt to secure a claim to the worldwide assets of the single entity clearly conflicts with the efforts of countries that follow a separate entity doctrine to withhold the assets of the local branch for satisfaction of the claims of creditors of that branch.[14] In addition to the United States, notable other countries that followed the separate entity doctrine in the liquidation of BCCI included France and Hong Kong.

The two approaches have differing implications for market discipline. Although pooling all assets for distribution in a single, home-country liquidation appears to treat all creditors more equitably, it may undermine incentives for creditors with international operations to seek to do transactions in well-supervised jurisdictions. The U.S. agency of BCCI had assets that exceeded its liabilities because the U.S. supervisory authorities had increased BCCI's asset-maintenance requirement to 120 percent of liabilities to unaffiliated persons in January of 1991 (Group of 30, 1998). Supervision in other jurisdictions was not nearly as intense.

Second, different countries have different liquidation procedures. In the United States, general bankruptcy law does not apply to banks. Instead, the primary bank supervisor would liquidate the branch of a foreign bank. Although the Federal Deposit Insurance Corporation has a number of options to consider with respect to an insolvent bank with insured deposits (see section 3 below), the only option with regard to a foreign branch is liquidation (Basel Committee, 1992b, p. 3).

In contrast, in Luxembourg and the United Kingdom, the supervisor is not the liquidator. Courts in the United Kingdom apply the same liquidation law to banks as to other commercial entities, while in Luxembourg the court will decide on a case-by-case basis whether to apply the general

[14]The Basel Committee (1992b, p. 2) notes an apparent inconsistency in the U.S. approach to bank liquidation. While the U.S. applies the separate-entity doctrine to the liquidation of agencies and branches of foreign banks, it applies the single-entity doctrine to the liquidation of U.S.-chartered banks with foreign branches.

commercial liquidation law to a bank. Supervisors in Luxembourg also have more flexibility than their counterparts in the U.K. and the U.S. with regard to options for dealing with a foreign branch that may include a conservatorship or suspension of payments. Not only do different liquidators have different powers, they may have different objectives as well. These may vary from maximizing returns to domestic creditors or to creditors worldwide to safeguarding financial stability, preserving going-concern value or protecting employment. Clearly conflicts among liquidators can delay the ultimate resolution of an insolvent institution and reduce the amount available for distribution to all creditors.

Third, the right of set-off differs across bankruptcy regimes. The Basel Committee (1992b, p. 3) defines set-off as "a nonjudicial process whereby mutual claims between parties, such as a loan and a deposit, are extinguished". The right of set-off can be exercised in the United States with regard to claims denominated in the same currency with regard to the same branch. Claims denominated in different currencies or on different branches may not be set-off (Basel Committee, 1992b, p. 4). In contrast, consistent with the single entity approach in the United Kingdom the claims need not be denominated in the same currency, on the same branch or even on branches in the same country. Although Luxembourg also adheres to the single entity doctrine, the right to set-off may not be exercised after a liquidation order and may be exercised before a liquidation order only when the claims "are fixed in amount, liquid and mature".

In principle the right of set-off gives a bank creditor who also owes money to that bank, a position like that of a secured creditor. In practice, however, the right may be severely circumscribed and subject to considerable uncertainty depending on the particular circumstances. For example,[15] the position of a depositor in a bank headquartered in Luxembourg with branches in London and New York may differ markedly depending on where the deposit and loan are booked. The depositor would appear to be in the strongest position if the deposit is placed with the London branch because English law provides the broadest scope to exercise the right of set-off. But the Luxembourg liquidator might attempt to sue the depositor for full repayment of the loan nonetheless. And, if the loan is booked in New York, the U.S. liquidator may sue for full repayment of the loan even though the depositor has exercised the right of set-off in England. The situation is still more complex if the bank has a branch in a jurisdiction that does not

[15]This example is drawn from the Basel Committee (1992b, p. 10).

permit set-offs. The Basel Committee (1992b. p. 11) concluded, "The lack of an international convention providing for mutual recognition of insolvency set-off or of generally applicable choice of law rules can mean that the expectations of parties at the time contracts are entered into may not be fulfilled…." In the event of the insolvency of a large, multinational bank, this uncertainty could itself be a source of inefficiency and instability.

Finally, the closure of BCCI revealed another wild card in the international bankruptcy deck that can trump normal insolvency procedures. In the United States, criminal charges may be levied against a bank, even when it has entered insolvency procedures. BCCI was, in fact, prosecuted under the Racketeer Influenced and Corrupt Organizations Act (RICO). The RICO proceeding gathered all of the U.S. assets of BCCI with the notable exception of the assets of the deposit agencies in California and New York, which had been ring-fenced for the benefit of local depositors. (Only the surplus above the amount owed to local depositors was forfeited.) As the Basel Committee (1992b, p. 4) observes, RICO gives the authorities broad prosecutorial powers authorizing them "to seize and forfeit assets in pursuit of the fruits and proceeds of a crime. Assets can be traced into the hands of innocent parties, in effect upsetting expectations about the finality of transactions".

This could override *ex ante* repayment priorities and reduce the amounts available for distribution to creditors. But in this instance, RICO proceedings substantially increased the returns to creditors. More than $1.2 billion was realized from BCCI assets in the United States. Judge Green, who presided over the BCCI case, the longest running forfeiture proceeding in the history of federal racketeering law, reported (Green, 1999a, p. 2) that "Most of that sum … [was] forwarded for distribution to the victims of BCCI's collapse".

The RICO prosecution might have intensified the worldwide scramble for assets, but the U.S. attorney general negotiated an unusual plea agreement, which forged an alliance with the court appointed liquidators of BCCI in England, Luxembourg, and the Cayman Islands ("the liquidators"). The liquidators had agreed to pool whatever assets could be recovered to be distributed equitably among all BCCI depositors and creditors.[16] In return for

[16]The pooling agreement reflected the view that the intermingling of the affairs of BCCI SA and BCCI Overseas was so extensive that it would have impracticable without very considerable delay and enormous expense to determine their separate assets and liabilities. BCCI SA Bahrain, BCCI Overseas China, BCCI SA Cyprus, BCCI SA Japan and BCCI SA United Arab Emirates also participated in the pooling agreements. Later the pooling agreement was extended to the principal ICIC companies.

cooperation from the liquidators in identifying BCCI assets in the United States and agreeing to plead guilty as successor to the BCCI corporations, the U.S. attorney general agreed to remit half of all forfeited assets to a Worldwide Victims Fund to be distributed by the liquidators. The other half was designated as a U.S. Fund. After covering the costs of prosecution from the U.S. fund, the residual was also transferred to the liquidators. This alliance was opposed by competing liquidators of ring-fenced branches elsewhere in the world as well as various other creditors who had hoped to secure preferential access to BCCI's assets in the United States. Judge Green (Green, 1999a, p. 13) rejected those competing claims noting that the plea agreement "reflects on a truly global measure extraordinary efforts and amazing cooperation of a multitude of signatories representing a myriad of jurisdictions to fully settle actions against the corporate defendants… and to locate and protect all realizable assets of BCCI for the ultimate benefit of the depositors, creditors … and other victims of BCCI".

The nearly eight years of litigation required to complete the RICO proceedings is an indication of the complexity of resolving a bank that has experienced massive, widespread fraud. The RICO proceeding was highly unusual in that the criminal defendants, represented by the liquidators, invested significant resources in assisting the U.S. in identifying and realizing forfeitable assets that included not only bank deposits, but also real estate and undeveloped land. As a result of these efforts the list of forfeited property was amended six times from 1992 to 1998 to include substantial additional assets. Judge Green decided 175 claims against the forfeiture, including objections from liquidators of BCCI branches, depositors, commercial banks whose wire transfers of funds were interrupted by the closures,[17] trade creditors, and tort claimants against BCCI such as the Republic of Panama and employees who claimed to have been stigmatized.

RICO charges were also brought against the sovereigns of Abu Dhabi, who had formally taken control of BCCI in 1990 and were record shareholders of First American, as well as six individuals. The resolution of the civil and criminal charges against the sovereigns of Abu Dhabi increased amounts remitted to the fiduciaries by more than $170 million and led to the

[17]Judge Green (p. 50) concluded that most of the interrupted wire transfers were subject to forfeiture ruling that "Persons who have … voluntarily transferred their property interest to the defendant are no longer the owners of that property, and are in no greater position to asset a claim to that property … than are other creditors and victims who cannot trace their former property into the defendant's account".

transfer of six plane loads of BCCI records that enabled the liquidators to identify additional assets and prosecute additional cases. RICO judgments were also reached against six individuals amounting to a total of $8.78 billion (Green, 1999b, p. 70).

The net result of this aggressive litigation on behalf of the creditors of BCCI is that they have fared much better than expected. When BCCI was closed, the liquidators projected a loss of $10 billion which would yield a return to shareholders "between zero and ten cents on the dollar".[18] Although creditors had to wait until December 10, 1996, for their first payment equal to 24.5 percent of the face value of their claims, by June 25, 2003, they had received payments amounting to 75 percent of the face value of their claims.[19] The costs of the English liquidation have amounted to 21 percent of the amount recovered.[20]

In summary, BCCI revealed some of the complications that could arise in the insolvency of a multinational banking organization. Lack of agreement on an international insolvency regime means that conflicts may arise with regard to the treatment of deposits and assets at branches in different countries, with regard to what entity will act as liquidator and what objectives that liquidator will pursue, and with regard to the right of set-off, if any. Moreover, criminal prosecution in the United States may preempt these normal, if chaotic, bankruptcy procedures. In view of these complications, it is not surprising that the uninsured creditors of BCCI have incurred substantial legal expenses and been obliged to wait a very long time for the settlement of their claims.

3. Barings

While losses at BCCI cumulated gradually over a number of years, the fatal losses at Barings occurred over a few weeks because they were attributable to highly leveraged bets in futures markets. Nonetheless, in the case of Barings as well as that of BCCI, it is clear that fraud and the group's international structure delayed recognition of the insolvency.

Nick Leeson joined Baring Securities Ltd. (BSL) in 1989, working primarily in the settlements department. Early in 1992 he had applied for

[18]Green (p. 9).
[19]BCCI SA (in liquidation) p. 2.
[20]BCCI SA (in liquidation) p. 9.

registration as a dealer with the Securities and Futures Authority (SFA) in London. The SFA discovered that he had made a false statement regarding unsatisfied judgments against him and BSL withdrew the application. In April 1992 Leeson was posted to Baring Futures Singapore Ltd. (BSL) to establish settlement operations and also to be a floor manager at the Singapore International Monetary Exchange (SIMEX). This was clearly inconsistent with one of the most fundamental principles of risk management — separation of the trading function from the clearing and settlement function and presumably justified as a defensible economy measure in a small office far from headquarters. Although Leeson made a similar false statement in his application to SIMEX, it was not challenged by BSL or SIMEX. Leeson's trading role was to be limited to agency business, the execution of orders placed by clients of other entities in Barings Group companies or the occasional external client of BFS. By the third quarter of 1993, however, he was heavily engaged in proprietary trading. Indeed, by the end of 1994 Leeson was thought to have generated 60 percent of the revenues of BSL's worldwide derivatives operations.[21]

His mandate as a proprietary trader was to arbitrage differences between the prices quoted for identical contracts on SIMEX and the Tokyo Stock Exchange and Osaka Securities Exchange. The opportunity for profitable arbitrage was assumed to arise because of differences in market structure between SIMEX and the other two exchanges. SIMEX operated an open outcry system while Tokyo's and Osaka's systems were computer based. Although Leeson was permitted to have limited intra-day unhedged positions, he was not authorized to maintain unhedged positions overnight. Because differentials across the three exchanges, when they exist, are likely to be very small, Leeson was expected to take large (assumed to be hedged) positions in order to generate significant profits. The Reserve Bank of Australia (1995, p. 5) has noted that this kind of authorized activity "provided camouflage for unauthorized activities. The authorized activities involved exceptionally large (though theoretically riskless) positions spanning exchanges in two countries, four subsidiaries (viewed as clients on some occasions and 'in house' counterparties at other times) and involved margining requirements …".

Almost as soon as Leeson began trading on SIMEX, he used his control over the back-office function at BFS to set up a secret account,

[21] Reserve Bank of Australia, p. 3.

designated 88888, to record unauthorized transactions. The transactions recorded in 88888 were large and grew quickly. They were unhedged and consistently reflected losses. Occasionally transactions were transferred from other Baring Group accounts to generate an artificial profit for those accounts, with a corresponding loss to 88888. Körnert (2003, p. 198) has provided a period by period breakdown of the losses in the secret account. The fraud continued for nearly three years, but, if it had been detected as late as the middle of 1994, it would have been devastating, but perhaps not fatal. At that time the recorded group capital was roughly £350 million and the cumulated loss, £116 million.

Leeson adopted an aggressive trading strategy in January 1995 premised on the assumption that Japanese equity prices would rise, Japanese bond prices would fall, and volatility would decline. He acquired long positions in Nikkei futures; short positions in Japanese government bond futures; and a short volatility position in exchange-traded options on the Nikkei index. In the final two weeks of February, after the Kobe earthquake, both the stock market and the bond market turned against him and his losses soared.[22]

Although Leeson's control over back office operations explains how he was able to initiate the fraud, he depended on weaknesses in internal and external oversight to escape detection over so long a period. The Singapore report on the collapse of BFS noted a number of missed opportunities (Lim and Tan, 1995). In principle, the Baring Group's risk positions, trading limits, trading performance, and the allocation of funding were monitored each day by an asset and liability committee (ALCO). Since Leeson's mounting losses had to be funded from elsewhere in the group, BFS was ultimately drawing funds that exceeded its total assets. But apparently the ALCO meetings focused on how to meet Leeson's funding requirements rather than why the requirements were so large. As late as February 20, 1995, the chief executive officer of the Barings Group is reported to have informed ALCO that he concurred with Leeson that his positions should not be reduced.[23]

One might also have expected the Financial Controls Department to have discovered account 88888. But the department viewed its responsibility as furnishing management with daily reports of profits and losses rather than ascertaining whether these reports reflected the true profitability of the activities of the Baring Group (Kane and DeTrask, 1999).

[22]Reserve Bank of Australia, p. 2.
[23]Lim and Tan (paragraph 11).

Since some of the funds used to finance the 88888 account were purportedly to fund client positions and were recognized by BSL as loans to clients, it seems plausible that the credit control function would have taken steps to verify the identities and creditworthiness of the clients receiving loans. Any attempt to do so would have revealed that there were no such clients. But no attempt was made.

Profitable arbitrage opportunities are not likely to persist in today's highly competitive international markets, and so one might have expected Leeson's supervisors to have been somewhat skeptical about the sustained profitability of his operations. But his profitability was "regarded with admiration rather than skepticism".[24] Indeed, when unauthorized trading was ultimately disclosed at the end of 1994, Leeson received a bonus rather than a reprimand.

Although the large exposures reported to regulators were understated (until January 1995) they were still very large. For example, the exposures to SIMEX and the Osaka and Tokyo exchanges exceeded 75 percent of Barings' capital. But neither Baring's management nor the Bank of England seemed clear about whether these exposures should be subject to the 25 percent large exposure limit. On February 1, 1995, the Bank of England made a determination that they were subject to the limit, but permitted the BSL time to bring its exposures down.

BFS had only four clients, three of which were other Barings entities. Its activities were funded almost entirely by its affiliated companies. Yet the affiliated companies appear not to have reconciled the funds they had sent to BFS against the trades for which the funds had been requested. If such a reconciliation had taken place, Leeson's scope for unauthorized trading would have been greatly reduced.

Finally, the settlement operations of BFS were linked to BSL Settlements by computer. Although Leeson had suppressed information regarding trades booked to account 88888, information pertaining to margin requirements necessarily included account 88888. Nonetheless BSL Settlements "claimed that it never used the margin feed, a simple one page document, to resolve the unreconciled balances".[25] During the third quarter of 1994, BFS was subject to an internal audit. The report emphasized the risk, inherent in Leeson's position as chief trader and head of settlements, that internal controls could be overridden. Ironically, the report went on to note that

[24]Lim and Tan (paragraph 14).
[25]Lim and Tan (paragraph 17(iii)).

since almost all of Leeson's trades were for affiliates this risk, inherent in Leeson's dual roles, was mitigated because his trades would be subject to reconciliation controls in the affiliates. Unfortunately, these trades were not reconciled. Ironically, when BSL made a decision to upgrade its Treasury function to improve risk management in Asia, it decided not to focus on BFS.

Leeson's ability to sustain the fraud was also facilitated by the international corporate structure of Barings. In contrast to BCCI, Barings did not adopt an opaque international structure to fragment oversight and conceal activities from the regulators. Nonetheless, the complexities of overseeing even the relatively transparent structure of Barings permitted the fraud to continue longer than it otherwise might have done and delayed recognition of the insolvency.

Barings PLC organized its businesses within three principal subsidiaries comprising more than one hundred companies: (1) Baring Brothers & Company (BB&C), an authorized bank in London with branches in Hong Kong and Singapore and subsidiaries in France, Germany, Italy, and Japan as well as subsidiaries engaged in trading sterling bonds, private equity and venture capital; (2) Baring Securities Limited (BSL) incorporated in the Cayman Islands, but headquartered in London, with subsidiaries that included Baring Futures Singapore (BFS), the legal entity in which the fraud took place; and (3) Baring Asset Management.

Barings employed a matrix approach to managing this global network. Traders reported to a local manager regarding operational and administrative matters and to product managers, who had responsibility for the profitability of their transactions. Proprietary trading reported to a different product manager than agency trading. Back-office managers reported to a local manager and their functional head in London. This matrix management structure fragmented the oversight of Leeson's activities. In principle, Leeson reported to product managers in London, a local manager at Baring Securities Singapore, and a regional operations manager for Southeast Asia. In practice, Leeson evaded effective supervision altogether. The Bank of England was responsible for supervising BB&C and for acting as lead regulator for the consolidated supervision of the group as a whole. Its oversight responsibilities extended to the other activities of the group insofar as such activities could threaten the financial soundness and reputation of BB&C.[26] The Bank of England placed reliance on functional regulators

[26]For more extensive discussion of the Bank of England's supervisory role, see Bank of England (1995).

and a variety of local regulators (both governmental authorities and self-regulatory organizations) to monitor the affiliated and overseas businesses of Barings PLC. For example, The Securities and Futures Authority (SFA) in London was the regulator of BSL. But the SFA viewed its responsibilities as much more limited in scope. The Bank of England Report on the Collapse of Barings (Bank of England, 1995) concluded that the "SFA did not regard itself as required to consider the activities or financial position of the subsidiaries of BSL and considered that its responsibilities with regard to subsidiaries were limited to the express notification of requirements relating to subsidiaries set out in its rules". This narrower scope of oversight is often true of regulators of securities firms and insurance companies outside of the European Union (Herring and Schuermann, 2002) and is one of the fundamental challenges the authorities face in developing an overall view of an international financial conglomerate.

In the early 1990s Barings began including results for BSL in the set of returns submitted by BB&Co to the Bank of England. This had the effect of treating BB&Co and BSL as one entity for purposes of monitoring capital adequacy and large exposures and may have obscured the massive flows of funds from BB&Co to BSL used to finance (what the managers believed to be) customer positions at BFS. In fact, they were mainly used to fund the mounting losses incurred by Leeson.

The Board of Banking Supervision sought to determine why the massive losses were not identified earlier. Not only did they elude external auditors as well as the various supervisors and regulators, but all of the internal checks and balances as well. The Board of Banking Supervision concluded there was a near total failure of risk-management systems and controls as well as confusion within the management group. The Singapore inquest on BSL was less charitable (Lim and Tan, 1995, paragraph 36) concluding that managers of Barings "could have remained ignorant of the account up to the time of collapse only if they had persistently shut themselves from the truth … [The] explanation that Mr. Leeson's trading activities posed little (or no) risk to the Baring Group, but yielded very good returns, is implausible and in our view, demonstrates a degree of ignorance of market reality that totally lacks credibility".

During the last week of February, after Leeson fled Singapore, Barings made an attempt to close out some of the largest positions it could discover at a discount, making the argument that the counterparty would realize an even smaller return if BSL should fail. But there was too little time

and the Japanese regulators objected that Japanese banks could not buy BSL's positions because it would constitute illicit, off-exchange trading in derivatives (Körnert, p. 206).

When Barings' attempt to initiate a private workout failed, it turned to the Bank of England in the hope of obtaining assistance in meeting its margin requirements in Asia the following Monday. The Bank of England faced a decision about whether the systemic implications of the failure of Barings justified official intervention.[27] Barings was frantically trying to reconstruct its accounts in order to determine the extent of is losses. Barings faced not only uncertainty about the size of these open positions, but also uncertainty about how rates would move. Given the uncertainty of the extent of losses at Barings, no other financial institution was willing to support or purchase Barings and the Bank of England concluded that the idiosyncratic nature of the problem at Barings was unlikely to lead to a contagious collapse of confidence in London.[28] With no prospect of a rescue, Barings turned to the bankruptcy court on Sunday evening, February 26.

The Bank of England announced its willingness to provide liquidity to the U.K. banking system to forestall market disruptions. It also facilitated the unwinding of Barings' positions. To avoid the possible seizure of payments from Barings during the clearing and settlement process, the Bank of England undertook transactions on behalf of Barings on a fully collateralized basis. Losses at Baring Securities threatened to spillover to the exchanges on which it traded. This foreshadowed the potential collateral damage that could occur if procedures for sharing losses in securities exchanges were activated. Indeed, some firms were reported to have been prepared to abandon membership in these exchanges and thus cause a collapse of these markets rather than share in Barings' losses (Group of Thirty, 1998, p. 95).

[27]This paragraph is based on the account in Hoggarth and Soussa (2001, annex 2).

[28]We may have gotten an (inadvertent) glimpse of the opposing arguments in a *Financial Times* story (Gapper, 1995), titled "The Barings crisis — Bank decides a rescue is the only option," that apparently went to press before the Bank of England announced its decision. The article noted that if the Bank of England had allowed Baring to fail, "it could have had enormously destabilizing effects on world financial markets". The article noted that the immediate effect would have been manageable, but warned that with a rescue "there was a danger of spiraling falls in world financial markets on fears over the possibility of linked collapses of banks, as well as the uncapped liability of Barings' contracts … According to brokers' calculations, a fall of 1,000 points in the Nikkei 225 index would have increased the amount Baring owed on the contract by £150 m."

For the relatively brief period — after Barings entered bankruptcy administration on February 27, but before the announcement on March 5 that the Dutch financial conglomerate, ING, agreed to purchase most of the assets and liabilities of Barings Plc (except for BFS) for £1 — the final disposition of Barings was in doubt. During that interval we had a glimpse of some of the problems that would occur when normal bankruptcy procedures are applied to a financial institution that trades actively in world financial markets. Counterparties found that their positions were frozen and could not be liquidated, transferred or rehedged. They faced the prospect of substantial losses due to fluctuations in the dollar price of the yen and the Nikkei index in the wake of the collapse of Barings (Group of Thirty, 1998, p. 94).

This interval exposed a serious tension between the bankruptcy administrator's attempt to protect the status quo through use of a stay and the needs of active trading firms that depend on their ability to hedge dynamically in volatile markets to protect their net worth. It raised the possibility that delays imposed to liquidate the insolvent firm in an orderly manner could cause other firms to default as well. Concerns about losses increased, moreover, when it was learned that omnibus accounts with Barings for trading futures and options in Asia were not protected by practices that strictly segregate customer funds in other jurisdictions such as the United States, and that these funds were being used to meet BSL's expenses.[29] Thus not only counterparties, but also some customers of Barings faced constraints on their access to funds.

In response to the potential problems for derivatives exchanges highlighted by the collapse of Barings, regulatory authorities from 16 countries who have oversight of the major futures and options markets met at Windsor, England, to discuss ways to strengthen supervision in May 1995. The resulting Windsor Declaration announced a consensus on measures to strengthen cooperation between market authorities and coordinate action in emergencies, protect customer positions, funds and assets, and improve procedures for dealing with a default on a securities exchange.

[29]Cohen (1995) notes that many of Baring's UK and European asset management clients had not only agreed to use Barings as their custodian, but had signed a separate agreement with the bank allowing their cash to be placed on deposit there. When the parent company collapsed, more than £600 m in client cash was frozen … Similarly, other fund management clients whose cash was locked up in the bank had to sit and wait while their portfolios remained static. …"

In summary, the collapse of Barings highlighted some of the problems of dealing with the failure of an international bank active in international financial markets. Although the banking and securities businesses of Barings were lodged in separately incorporated units, BB&Co was used to fund massive losses in BSL. The separate functional regulators lacked a full picture of the group's consolidated positions and failed to share information that might have flagged emerging problems before the losses mounted.[30] It also raised longstanding questions about the sharing of information between host and home country supervisory authorities. It raised new questions, as well, about the possibility of the contagious transmission of shocks across derivatives exchanges. Although luckily the sale of most of Barings assets and liabilities to ING brought a quick end to the insolvency process, it became clear that the imposition of a stay on the claims of counterparties and some customers could jeopardize the solvency of other firms.[31]

4. Concluding Comment

Fraud is a particularly insidious cause of bank failures because it may evade detection for long periods and cause an institution to become deeply insolvent before the insolvency is recognized and insolvency procedures can be initiated. Moreover, it can delay insolvency procedures as the bankruptcy officials attempt to ascertain the true condition of the bank and identify and safeguard all of its assets. When, as in the case of BCCI, fraud occurs in a global corporate structure, insolvency procedures are likely to take even longer given the formidable coordination issues that must be dealt with. Nonetheless, fraud is less likely to be associated with systemic crises than other causes of bank failure because it tends to be idiosyncratic. It can destroy one institution, but unless a large number of other institutions have large exposures to that institution, it is unlikely to weaken the banking system. This was particularly clear in the case of BCCI. While the collapse of BCCI was very hard on its creditors, its involvement in interbank markets

[30]See Baxter (1999) for a discussion of the problems posed by secrecy laws for combating corruption in banking.

[31]The International Swap Dealers Association (ISDA) has made a concerted effort to deal with this latter problem by developing Master Agreements that permit closeout netting in the event of default and lobbying for changes in national laws to support such agreements. But the subsequent near collapse of LTCM revealed the darker side of closeout netting. See Herring (2003).

was so limited that it had virtually no impact on the rest of the financial system. The same cannot be said of Barings.

In contrast to BCCI, Barings was heavily involved in interbank markets and traded actively (more actively than its managers realized) on international exchanges. If the fraud at Barings had been as complex and pervasive as at BCCI, the bankruptcy administrators might not have found a buyer who was willing to take on most of its assets and liabilities and Barings would have been subjected to the same, lengthy insolvency proceedings that were applied to BCCI. We saw, in the brief interval before a buyer was found, what the consequences might have been. If the stays are imposed on counterparties and creditors of the bank for a lengthy period, an integral part of conventional bankruptcy proceedings, it can have very damaging spillover impacts, especially when applied to financial instruments that are actively traded in global markets.

Conventional bankruptcy proceedings would not have achieved all of the goals of a good insolvency procedure. Although the conventional approach could have penalized managers and shareholders adequately and maintained the absolute priority of claims, it would not have maximized the value available for distribution to creditors and it would not have limited systemic costs adequately. Since Barings' positions needed to be dynamically hedged to contain additional losses, the process could not have delivered an *ex post* efficient outcome. Similarly, counterparties in contracts that change in value moment by moment as market prices vary would have been seriously affected and the uncertainty about the magnitude of their loss would have been difficult to hedge.

To be sure, neither BCCI nor Barings was sufficiently large to raise serious concerns about systemic risk. But they were sufficiently complex to highlight some of the issues that must be dealt with in the unhappy event of the insolvency of a much larger international bank. Although it is not generally possible to anticipate fraud (and so emphasis should be placed on prevention or early detection), it is possible to anticipate the complications that will arise when a bank with an international network of offices becomes insolvent. While official were ultimately able to improvise a workable means of cooperation in the case of BCCI, it would be unwise to count on inspired improvisation a second time. Moreover, we now know that conventional bankruptcy procedures are too slow for firms that are heavily involved in global financial markets. Both problems need to be addressed in period of relative calm, before a crisis erupts. Both deserve a prominent place on the agenda of the Basel Committee.

References

Association of Certified Trading Managers, n.d., *Barings Collapse — A Lesson for Operators in Derivatives*, ACTM Research Center, IFCI Risk Institute, available at www.actmindia.org/pages/dec-cs.htm.

Basel Committee on Banking Supervision (Basel Committee), 2004, "Bank failures in mature economies," working paper, No. 13, April.

———, 1992a, "Minimum standards for the supervision of international banking groups and their cross border establishments," in *The Basel Concordat and Minimum Standards*, *BCBS Compendium of Documents, International Supervisory Issues*, Vol. III, Basel, May, chapter 1.

———, 1992b, "The insolvency liquidation of a multinational bank," in *Other Supervisory Issues*, *BCBS Compendium of Documents, International Supervisory Issues*, Vol. 3, May, chapter 3.

———, 1983, "Principles for the supervision of banks' foreign establishments," Basel, May.

Baxter, Thomas C., Jr., 1997, "Breaking the billion dollar barrier — Learning the lessons of BNL, Daiwa, Barings, and BCCI," *Journal of Money Laundering Control*, Vol. 1, June, pp. 15–25.

Bingham, Lord Justice, 1992, *Inquiry into the Supervision of The Bank of Credit and Commerce International*, London: Her Majesty's Stationery Office, October 22.

BCCI SA (in liquidation), 2004, *Report to the Secretary of State for Trade and Industry Pursuant to Regulation 14 of the Insolvency Regulations 1994 for the Period 16 January 2003 to 15 January 2004*, High Court of Justice Chancery Division, available at www.bcci.info.

Bernard, Alicia, 1995, *The Barings Collapse (A): Breakdowns in Organizational Culture & Management*, IMD, IMD001, Vol. 11.12.2002.

Board of Banking Supervision, 1995, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings*, Her Majesty's Stationery Office, July 18.

Cohen, Norma, 1995, "Survey of global custody (3) — Doubts raised over bank deposits," *Financial Times*, November 6.

Gapper, John, 1995, "The Barings crisis–Bank decides a rescue is the only option," *Financial Times*, February 27.

Green, Joyce Hens, 1999a, *United States of America v. BCCI Holdings (Luxembourg), S.A., Bank of Credit and Commerce International, S.A., Bank of Credit and Commerce International (Overseas) Limited ,and International Credit and Investment Company (Overseas) Limited, Defendants*, Criminal

Acton No. 91-0655 (JHG) Defendants 1–4, United States District Court for the District of Columbia, decided July 12.

Green, Joyce Hens, 1999b, *BCCI Holdings (Luxembourg) S.A. et al., Plaintiffs, v. Abdul Raouf Hasan Khalil et al., Defendants*, Civil Action No. 95-1252 (JHG), United States District Court for the District of Columbia, June 23.

Group of Thirty, 1998, *International Insolvencies in the Financial Sector*, A Study Group Report, Washington: Group of Thirty.

Hart, Oliver, 2002, "Different approaches to bankruptcy," Harvard Institute of Economic Research, discussion paper, No. 1903.

Herring, Richard J., 2003, "International financial conglomerates: Implications for national insolvency regimes," in *Market Discipline and Banking: Theory and Evidence*, George Kaufman (ed.), Amsterdam: Elsevier, pp. 99–129.

———, 1993, "BCCI: Lessons for international bank supervision," *Contemporary Policy Issues*, Vol. 11, April, pp. 1–11.

Herring, Richard J., and Til Schuermann, 2004, "The regulation of position risk in banks, securities firms, and insurance companies," in *Risk-Based Capital Regulation*, Hal Scott and Phil Wellons (eds.), Oxford: Oxford University Press.

Hoggarth, Glenn, and Farouk Soussa, 2001, "Crisis management, lender of last resort, and the changing nature of the banking industry," in *Financial Stability and Central Banks*, Richard Brealey *et al.* (eds.), London: Routledge for CCBS and the Bank of England.

Jackson, Patricia, 1996, "Deposit protection and bank failures in the UK," *Financial Stability Review,* No. 1, pp. 38–43.

Jackson, Patricia, William Perraudin, and Norvald Instefjord, 1997, "Controlling securities fraud," *Financial Stability Review*, No. 3, pp. 8–17.

Kane, Edward J., and Kimberly De Trask, 1999, "Breakdown of accounting controls at Barings and Daiwa: Benefits of using opportunity cost measures for trading activity," *Pacific Basin Finance Journal*, Vol. 7, No. 3–4, August, pp. 203–228.

Kaufmann, G., and S. Seelig, 2002, "Post-resolution treatment of depositors at failed banks: Implications for the severity of banking crises, systematic risk, and too big to fail," *Economic Perspectives*, Federal Reserve Bank of Chicago, Vol. 26, No. 2, pp. 27–41.

Körnert, Jan, 2003, "The Barings crises of 1890 and 1995: Causes, courses, consequences, and the danger of domino effects," *Journal of International Financial Institutions & Money*," Vol. 13, pp. 187–209.

Lim, Michael Choo San, and Nicky Ng Kuang Tan, 1995, *Baring Futures (Singapore) Pte Ltd.: Investigation pursuant to section 231 of the Companies*

Act (Chapter 50); the report of the inspectors appointed by the Minister of Finance, Singapore: Ministry of Finance.

Mayes, David G., 2004, "Who pays for bank insolvency?," *Journal of International Money and Finance*, Vol. 23, No. 3, pp. 515–551.

Reserve Bank of Australia, 1995, "Implications of the Barings collapse for bank supervisors," *Reserve Bank of Australia Bulletin*, November, pp. 1–5.

Richards, J. P., 2004, *Re: Bank of Credit & Commerce International SA (In Liquidation) Report to the Secretary of State for Trade and Industry Pursuant to Regulation 14 of the Insolvency Regulations 1994 for the period 16 January 2003 to 15 January 2004*, available at www.bcci.info.

Shadow Financial Regulatory Committee, 1991, "Statement No. 74: Bank of Credit and Commerce International," September 16.

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Derivatives and Systemic Risk: What Role Can the Bankruptcy Code Play?

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In Fall 1998, the Federal Reserve Bank (Fed) arranged a bailout of the massive hedge fund, Long-Term Capital Management (LTCM), which faced the prospect of immediate liquidation if it filed a petition under the U.S. Bankruptcy Code. Although the Code generally prevents creditors from seizing assets of firms in bankruptcy (also called the automatic stay), LTCM enjoyed no such protection. It was party to tens of thousands of derivature contracts, which receive special treatment under the Code. Even if LTCM field a bankruptcy petition, its derivatives counterparties would have been free to terminate contracts and seize collateral to the extent they are owed money. Defending the Fed's decision to assist LTCM, Alan Greenspan explained:

> *[T]he act of unwinding LTCM's portfolio in a forced liquidation [precipitated by LTCM's derivatives counterparties] would not only have a significant distorting impact on market prices but also in the process could produce large losses — or worse — for a number of creditors and counterparties, and for other markets participants who were not directly involved with LTCM …. Had the failure of LTCM triggered the seizing up of markets, substantial damage could have been inflicted on many market participants …and could have potentially impaired the economies of many nations, including our own.*[1]

[1]Greenspan (1998).

The Fed believed that its intervention was necessary to avoid a systemic meltdown that might arise from LTCM's liquidation — a liquidation made possible by the Bankruptcy Code's special treatment of derivative contracts (see, for example, Krimminger, 1999).

The irony here is that the Code's special treatment of derivatives stems from a desire to avoid systemic risk. As reported in legislative history, Congress believed an exemption from the automatic stay was necessary to prevent the "insolvency of one commodity or security firm [from] spreading to other firms and possibly threatening the collapse of the affected market".[2] In other words, Congress amended the Bankruptcy Code to prevent a systemic collapse that might arise if a derivatives counterparty were unable to liquidate its contracts with a bankrupt debtor immediately. But, as the LTCM experience demonstrates, permitting the immediate liquidation of a large financial institution counterparty such as LTCM can generate another form of systemic risk, namely the risk that a "run" by derivatives counterparties on the debtor will itself destabilize financial markets.

The Fed's intervention to aid LTCM, therefore, calls into question the policy rationale underlying the Bankruptcy Code's special treatment of derivatives. In this paper, we make the following claim: derivatives may deserve special treatment, but not for the reason commonly given. When systemic risk is a legitimate concern, the Code can do little to mitigate it, and may even make matters worse, especially in cases in which large financial institutions (such as LTCM) are involved. But if systemic risk is a red herring, is there any justification for treating derivatives contracts differently under the Bankruptcy Code? We think there is: derivatives contracts are generally not firm-specific assets and therefore giving them special treatment will increase economic efficiency.

We begin with a description of the Code's special treatment of derivatives contracts and the common justification given for it. We then challenge this conventional wisdom, arguing that the Code is a poor tool for reducing systemic risk. Indeed, as the case of LTCM illustrates, the Code may in fact exacerbate this risk. Our argument naturally raises the question whether there are alternative (efficiency-based) justifications for the special treatment given to derivatives contracts under the Bankruptcy Code. There are. Derivatives, like cash and other financial assets, are fungible

[2]House Rep. No. 97-420, 97th Cong., 2nd Sess., 3 (1982).

and can be seized by creditors without endangering a firm's going-concern value *ex post*. The efficiency benefits *ex post* are offset potentially by the *ex ante* costs of a rule favoring derivatives contracts, which encourages rent-seeking by creditors seeking to disguise loans as derivatives contracts. We doubt these *ex ante* costs are significant, but if we are wrong there is no principled reason for offering special treatment under the Bankruptcy Code to derivatives contracts.

1. Derivatives Contracts and the Bankruptcy Code

When a firm files a bankruptcy petition, it immediately enjoys the benefit of the Bankruptcy Code's "automatic stay", which forbids any creditor from taking steps to collect debts, seize collateral, terminate ongoing contracts, or otherwise "exercise control over property" of the debtor firm.[3] The automatic stay is a core element of any attempt to reorganize under the Code. By shielding the debtor's assets and preventing a race that rewards the first creditor to the courthouse, it avoids dismemberment of a firm with going-concern surplus and facilitates a collective proceeding in which the parties (debtor and creditors) can negotiate the terms under which the firm will continue as a going concern.

There are, however, many exceptions to the automatic stay. Some are intuitive. The stay, for example, does not extend to the government's police or regulatory power; a debtor cannot avoid criminal prosecution or the enforcement of environmental protection laws (unless, of course, the government is simply using its regulatory powers to collect debts).[4] Along the same lines, a bankrupt educational institution cannot use the stay to prevent accrediting agencies, state licensing bodies, or the Secretary of Education from a reevaluating of the institution's quality and eligibility for funding.[5] Here we see a congressional judgment that the benefits of government regulation outweigh the costs to the debtor.

Other exceptions are less intuitive, especially those involving derivatives contracts, such as futures, forwards, repos, and swaps. When a firm enters bankruptcy, a counterparty typically may cancel and net various

[3] 11 U.S.C. § 362(a)(3).
[4] § 362(b)(1), (4).
[5] § 362(b)(14), (15), (16).

contracts (in-the-money contracts are netted against out-of-the money contracts) and then seize collateral to the extent that the troubled firm is a net obligor to the counterparty. (See Novikoff, 2002.) The special treatment of derivatives contracts is not new. When the Bankruptcy Code was enacted in 1978, it contained an exemption from the automatic stay for non-debtor brokers and forward merchants with respect to transactions involving margin payments or deposits received from a debtor under a commodities contract or a forward contract. Amendments to the code in 1982, 1984, and 1990 expanded the exemption to include an array of financial transactions known as "derivatives securities" contracts, including forward contracts, commodity contracts, repos, and swaps. Counterparties to a derivatives contract with a debtor in bankruptcy may now terminate or modify it and then liquidate assets of the debtor unhindered by the bankruptcy filing of a debtor, irrespective of whether the debtor is in default under the contract. Further, if counterparties hold other assets of the debtor they can typically effect an "offset" so long as they can enforce their rights against such assets without having to require the assistance of the debtor. Thus, in general, the rights of counterparties to derivatives transactions with respect to collateral and its liquidation are derived from the contract between the protected party and the debtor, as opposed to the Bankruptcy Code.

The exceptions are set to grow. Recently proposed legislation would, among other things, extend the automatic stay exemption to a wide variety of equity and credit derivative transactions, and would further extend the rights of counterparties to enforce netting arrangements documented under International Swap Dealers Association (ISDA) Master Agreements. Specifically, it would extend close-out netting between swap agreements, on the one hand, and securities and forward contracts, on the other hand.

Why are derivatives contracts treated differently? If legislative history is to be credited, Congress reasoned that special treatment of derivatives was necessary to prevent the "insolvency of one commodity or security firm [from] spreading to other firms and possibly threatening the collapse of the affected market".[6] It believed that "prompt liquidation of an insolvent's position is generally desirable to minimize the potentially massive losses and chain reaction of insolvencies that could occur if the market were to move sharply in the wrong direction".[7] Congress, then, carved derivatives out of the scope of the automatic stay in order to reduce the likelihood of

[6]House Rep. No. 97-420, 97th Cong., 2nd Sess., p. 2 (1982).
[7]House Rep. No. 97-420, 97th Cong., 2nd Sess., p. 4 (1982).

systemic risk, that is, the possibility that insolvency of a party to a derivatives contract might expose a counterparty and that counterparty's counterparties to financial distress, which would destabilize financial markets.

Congress' concern with systemic risk has some basis, as Edwards (1995) explains. Fear that a counterparty insolvency could trigger a systemic meltdown in the over the counter (OTC) derivatives market stems partly from the fact that this market is dominated by a few large international banks and securities firms. The ten largest OTC derivatives dealers are counterparties to most of the derivatives transactions that take place, and seven U.S. banks hold over 95 percent of the U.S. banking system's notional derivatives exposure.[8] This raises the possibility that a problem (such as insolvency) with a major derivatives dealer (that is, a bank) could reverberate throughout the entire OTC derivatives market and cause financial distress far beyond derivatives markets.

While Congress' concern with systemic risk is understandable, its decision to address it through the Bankruptcy Code is deeply puzzling. At the very least, the language of the Code encompasses far too many transactions. Fear of systemic risk is warranted only in cases involving the insolvency of a major financial market participant, with whom other firms have entered derivatives contracts of massive value and volume. Yet the Code offers special treatment to derivatives no matter how large or small the counterparty. Thus, Congress' stated justification for the special treatment is incomplete, as it applies only to a fraction of all firms that enter into derivatives contracts.

At the same time, the Code's special treatment of derivatives contracts seems far too narrow. Fear of systemic risk justifies special treatment of a broad range of financial market transactions and participants, especially commercial banks. Indeed, fear of systemic risk originated in the banking sector, yet a bank cannot seize collateral whenever a debtor firm enters bankruptcy. Surely the risks that (apparently) motivated Congress' concern with derivatives are equally present when Enron, Worldcom, or United Airlines enters bankruptcy and, say, Chase Manhattan cannot collect its collateral (if it is a secured creditor) or expects only a few cents on the dollar (if it is unsecured) when the case concludes several years later. Yet nothing in the Code allows Chase to collect its collateral; nothing in the code gives Chase or any other bank priority in payment of their unsecured claims when the case concludes. If systemic risk arises from transactions

[8]U.S. Office of the Comptroller of the Currency (2002; p. 1).

other than derivatives contracts, as it undoubtedly does, the Code's singular focus on derivatives contracts is puzzling.

It might be argued that this singular focus merely reflects the reality that commercial banks are subject to federal regulation while many derivatives counterparties are not. We do not fear a systemic collapse when Chase is unable to collect collateral from Enron because, thanks to capital requirements and other regulatory and supervisory constraints, Chase is unlikely to become financially distressed. This argument is troubling for two reasons. First, it seems odd to regulate some financial institutions directly (through capital requirements and the like) and others indirectly (through the Bankruptcy Code). The costs of direct regulation are borne by the institution itself; the costs of indirect regulation through the Code are borne by other creditors of a distressed firm. More importantly, it seems highly unlikely that the Code is an effective means of reducing systemic risk, as we show in the next section.

2. Can the Bankruptcy Code Reduce Systemic Risk?

An answer to this question was suggested recently during the insolvency of Long-Term Capital Management (LTCM), a limited-partnership hedge fund founded in 1994. As Edwards (1999) discusses in greater detail, LTCM was highly leveraged and its operations in derivatives markets were broad and complex. While approximately 80 percent of LTCM's balance-sheet positions were in seemingly safe treasury securities of major industrial countries, these were highly leveraged, at a ratio of 28-to-1 on-balance-sheet as of August 31, 1998. And LTCM's off-balance-sheet leverage was much greater. As of August 31, 1998, according to the President's Working Group on Financial Markets (1999), it held derivatives of about $1.4 trillion in notional value on a capital base of approximately $2.3 billion. LTCM held OTC swap contracts with a gross notional value in excess of $750 billion, futures contracts with a gross notional value in excess of $500 billion, and options and other derivatives with a notional value in excess of $150 billion. It is estimated that LTCM had between 20,000 and 60,000 trades on its books, and that it had more than 75 counterparties to its derivatives contracts (see President's Working Group, 1999; GAO, 1999).

After a series of large losses, by September 1998 LTCM had lost 50 percent of its equity and was in danger of not being able to meet the collateral obligations on its derivatives positions. Only the timely intervention

of the Federal Reserve in organizing a creditor-bailout in September 1998 prevented LTCM's default and collapse. A consortium of 14 banks and securities firms, the large creditors of LTCM, recapitalized the hedge fund to the tune of $3.6 billion and took over the responsibility and obligations of resolving its financial difficulties. In essence, LTCM's large counterparties participated in a Federal-Reserve-organized out-of-court "work-out". Why was the intervention of the Federal Reserve necessary to do what one might expect could be done under standard bankruptcy law?

In explaining the role of the Federal Reserve, William McDonough, the president of the Federal Reserve Bank of New York, stated that it was the Federal Reserve's judgment that the "abrupt and disorderly close-out of LTCM's positions would pose unacceptable risks to the American economy".[9] According to McDonough, the rush of more than 75 counterparties to close out simultaneously hundreds of billions of dollars of derivatives contracts would have adversely affected many market participants with no connection to LTCM and would have resulted in tremendous uncertainty about how far prices might move. According to McDonough, "[u]nder these circumstances, there was a likelihood that a number of credit and interest rate markets would experience extreme price moves and possibly cease to function for a period of one or more days and maybe longer. This would have caused a vicious cycle: a loss of investor confidence, leading to further liquidations of positions, and so on".[10] (At the time, LTCM's own estimate was that its largest 17 counterparties, in closing out their positions with LTCM, would have incurred losses in the aggregate of between $3 billion and $5 billion, with some individual firms losing as much as $500 million. (See Roth *et al*., 2001.)

At the root of the Federal Reserve's concern was current U.S. insolvency law.[11] As we have seen, the Bankruptcy Code exempts derivatives counterparties from the normal operation of the automatic stay. Thus, if LTCM had field a bankruptcy petition, its derivatives counterparties could have terminated and liquidated their contracts with LTCM. Had this occurred, the

[9]Hedge Fund Operations: Hearing Before the House Committee on Banking and Financial Services, 105th Congress, p. 5 (1998).
[10]*Id.*
[11]Cayman Islands bankruptcy law was also a concern, because LTCM's sole general partner was a Cayman Islands limited partnership. The Fed analyzed the implications of bankruptcy filings in both the U.S. and abroad. See GAO (1999, Appendix E).

effects would have been analogous to a "bank run" on LTCM's assets, possibly resulting in the systemic ramifications articulated by Federal Reserve officials. As Diamond and Rajan (2003) have argued, bank runs can cause or exacerbate liquidity shortages, resulting in systemic illiquidity with the potential to cause widespread contagion. A run by derivatives counterparties of the kind that could have occurred in the LTCM episode seems similar to a bank run in that it too could have resulted in the immediate and widespread liquidation of assets at firesale prices.

In contrast, the financial instability that (Congress feared) might arise if derivatives transactions are not exempt from the automatic stay seems less systemic in nature and less likely to destabilize financial markets. Congress worried that losses by a derivatives counterparty could trigger "a chain reaction of insolvencies" by making it impossible for a counterparty experiencing losses to meet its obligations to other counterparties. In general, this is implausible. Although a derivatives counterparty may suffer significant losses if it is not able quickly to terminate and close out its positions with a financially stressed counterparty, this is also true for most other creditors of the firm (those subject to the automatic stay provision). In this sense derivatives counterparties seem no different than other creditors, and we rarely worry about a "chain reaction of insolvencies" when, say, United Airlines defaults on obligations to its vendors.

A "chain reaction of insolvencies" might, however, be worrisome in two situations. One is where a distressed counterparty is a particularly large player in the market and suffers distress as a result of unanticipated economic turmoil that reduces market liquidity. LTCM's distress, for example, was precipitated by Russia's devaluation of the ruble and declaration of a debt moratorium in August 1998. This unexpected event led to a so-called "flight" to liquidity and quality: investors sold-off or avoided high-risk, illiquid financial products and gravitated toward safer, more liquid instruments, sharply increasing yield spreads. LTCM suffered massive losses as yield spreads widened around the world, and found itself on the verge of default in a highly illiquid market.

Suppose that LTCM had filed a bankruptcy petition and, thanks to the code's special treatment of derivatives contracts, its counterparties had closed out their contracts and seized collateral. Would this have avoided the risk of a chain reaction of insolvencies? No. Indeed, it would have exacerbated the risk. As Edwards (1999) has explained, wholesale liquidation of LTCM's assets would have benefitted few counterparties (prices would

have collapsed long before most had a chance to liquidate their positions) and could have had serious "knock-on" effects because other counterparties and other banks and financial firms held positions similar to LTCM's. Thus, counterparties could have suffered large losses and been forced to default on their own obligations to other parties, resulting in precisely the same chain reaction of insolvencies that Congress sought to avoid by exempting derivatives from the stay. This explains why LTCM's counterparties did not attempt to close out their positions and seize collateral when LTCM entered financial distress. Instead, with encouragement from the Fed, they put an additional $3.6 billion into LTCM to ensure that it remained solvent while they took steps to unwind LTCM's derivatives positions in an orderly fashion. For the counterparties, the additional investment in a failing LTCM was obviously viewed as less costly than the expected losses from wholesale liquidation of LTCM's positions and collateral. As the President's Working Group on Financial Markets (1999) put it, "[t]he self-interest of these firms was to find an alternative resolution that cost less than they could expect to lose in the event of default".

A chain reaction of insolvencies may also be a possibility if the distressed counterparty is a particularly large player in the market and counterparties generally failed to employ sound risk management procedures when dealing with the distressed counterparty. Derivatives counterparties, like all other creditors, have strong incentives to manage their credit risks prudently so that losses do not cause them financial distress. The insolvency of a small derivatives counterparty should not result in a chain reaction effect because losses will be small, and even the insolvency of a large counterparty like LTCM should not have this effect unless its counterparties behaved imprudently in their dealings with the distressed counterparty (which may have been the case with LTCM[12]). But the better solution to this failure is better risk management by counterparties, not amendments to the Bankruptcy Code exempting derivatives counterparties from its automatic stay provisions. Or, in the case of banks and other regulated financial institutions, which constitute the major derivatives counterparties in OTC

[12]Available evidence suggests that LTCM's counterparties behaved imprudently (by, for example, extending credit at below-market rates and by entering undercollateralized derivatives contracts without verifying the scale or scope of LTCM's trading operations). See GAO (1999, pp. 10–12); President's Working Group (1999, pp. 14–17); Edwards (1999, pp. 204–205).

derivatives markets, the answer should be either better supervision or a regulatory structure that increases incentives to manage counterparty risk more effectively.

Thus, one view of the potential for LTCM to have caused a systemic crisis is that this crisis was precipitated by the very provisions of the Bankruptcy Code that were designed to assure stability in derivatives markets. Had these provisions not been adopted, it is very likely that there would not have been either an "abrupt and disorderly close-out of LTCM's positions" or an "unwinding [of] LTCM's portfolio in a forced liquidation", and that there would have been no need for the Federal Reserve to intervene to prevent a "seizing up of markets …[that] could have potentially impaired the economies of many nations, including our own". While counterparties of LTCM may have suffered losses had they been stayed by the Code, it is unlikely that these losses would have been large enough to bring down large banks and securities firms. If they had been stayed by the Code, LTCM's major creditors almost certainly would have opted to facilitate a bankruptcy-supervised creditor work-out by putting in more capital and reorganizing the ownership structure of LTCM, just as they did under the Federal Reserve arranged work-out. Indeed, as subsequent events showed, it was clearly in the collective interest of LTCM's counterparties and creditors to avoid a run on LTCM and the accompanying "fire sale" of its assets. Thus, in the absence of the Bankruptcy Code's special treatment of derivatives, Fed intervention may have been unnecessary.

LTCM is not the only large-scale derivatives counterparty to suffer financial distress. Indeed, an even more spectacular failure occurred recently in the form of Enron, which dominated many energy derivatives markets. Partnoy (2002) estimates that Enron made more money trading derivatives during the year 2000 than LTCM made in its entire history, that is, if we believe Enron's 2001 10-K. Unlike LTCM, the federal government did not intervene to help Enron as it entered financial distress (despite lobbying efforts by the firm's bankers[13]). Unlike LTCM, Enron did file a chapter 11 petition. And in stark contrast to the Fed's expectations in LTCM, Enron's bankruptcy did not destabilize either energy derivatives markets or financial markets generally.

This was, to many observers, a surprising outcome (see, for example, Economist Newspaper Limited, 2001; Lee, 2001; Financial Times Ltd.,

[13]U.S. Senate (2003).

2002; Weaver 2004). Indeed, the absence of systemic effects in the wake of a major counterparty's collapse might be seen as evidence that the Code's special treatment of derivatives worked as intended. ISDA (2002a, 2002b) has made precisely this argument: counterparties were free to terminate contracts and seize collateral, thereby minimizing losses. The absence of systemic effects might also suggest, as Kaufman (2003) notes, that the Fed's concerns in LTCM were misplaced: LTCM's collapse, like Enron's, would not have destabilized financial markets.

But Enron's insolvency presented fundamentally different issues than LTCM's. First, it is *not* true that Enron's failure had little effect on financial markets. Liquidity in energy markets and many specialized markets (such as telecommunications bandwidth trading) collapsed in the wake of the bankruptcy filing. (See ISDA, 2003.) What is true, however, is that this collapse was not as severe as that experenced in the LTCM crises. Also, LTCM's insolvency was driven by mounting losses in its derivatives positions, while Enron's insolvency was driven by sustained and increasing losses in its core non-financial businesses — losses covered up by a massive accounting fraud. If its annual reports offer any guidance, Enron's derivatives trading arm was its *only* profitable operation (see Partnoy, 2002). Enron indicated, post-petition, that its derivatives trading business accounted for the "lion's share" of its income.[14] Before and after Enron filed its bankruptcy petition in December 2001, many derivatives counterparties with in-the-money contracts with Enron canceled these contracts and seized collateral.[15] But many counterparties had out-of-the-money contracts and Enron immediately took steps to collect amounts owed to it (termination payments).[16] These amounts totaled over $3 billion as of November 2003 (an additional $2.2 billion was sought in litigation against counterparties that terminated contracts that, in Enron's view, were disguised loans).[17] More importantly, Enron's

[14]Response and objection of Exco Resources, Inc., at p. 3, *In re Enron Corp.*, No. 01-16034 (Bankr. SDNY Jan. 8, 2002).

[15]See Emergency motion for an order pursuant to sections 105 and 363 of the Bankruptcy Code and Rule 9019(b) for the Federal Rules of Bankruptcy procedure for authority to negotiate and enter into termination or sale agreements with counterparties to certain "safe harbor" contracts without further court approval, *In re Enron Corp*., No. 01-16034 (Bankr. SDNY Dec. 10, 2001).

[16]*Id.*

[17]Disclosure statement for fifth amended joint plan of affiliated debtors pursuant to Chapter 11 of the United States Code pp. 236–37, *In re Enron Corp*., No. 01-16034 (Bankr. SDNY Jan. 9, 2004).

derivatives trading arm continued operating despite the firm's Chapter 11 filing, and the firm moved[18] quickly to sell the operation to a third-party (ultimately to UBS Warburg[19]), thereby minimizing disruption to OTC markets.

For these reasons the collapse of Enron was much different from the collapse of LTCM. Enron's bankruptcy filing did indeed create a counterparty run that consumed assets, but the effect of this run was limited by the fact that Enron's trading operations were, it seems, somewhat profitable: some counterparties (with in-the-money positions) were free to seize Enron assets, but another large group of counterparties (with out-of-the-money positions) found themselves liable to Enron. There was no wholesale run on the firm's assets, and no firesale of assets. Although Enron's collapse did create a liquidity vacuum in certain energy derivatives markets, it did not threaten liquidity in overall financial markets — something the Fed feared in the LTCM crisis (see President's Working Group, 1999). Put differently, Enron's collapse did not pose a risk of a systemic meltdown generally. Its insolvency, therefore, neither supports nor undermines ISDA's claim that the Code's special treatment of derivatives minimizes systemic risk nor our claim that the Code can, in some cases, exacerbate systemic risk.

In sum, then, the LTCM episode suggests that the most important risk to financial stability may come from the possibility that derivatives counterparties, exempt from the automatic stay provisions of the Bankruptcy Code, may "run" on a financially distressed firm (or firms), causing a liquidity shortage that has the potential to spill over to other firms and markets and cause widespread instability in financial markets. In contrast, in the absence of a systemic liquidity shortage, there is no reason to think that derivatives counterparties could not adequately manage their counterparty risks or could not absorb counterparty losses without triggering a chain reaction of insolvencies.

A Bankruptcy Code exemption for derivatives, then, offers little help in alleviating the potential systemic risk associated with the insolvency of a large derivatives counterparty, and may even exacerbate or create a systemic risk. The better approach to mitigating possible systemic risk from a derivatives counterparty failure is to increase incentives for counterparties

[18]Motion of Enron Corp. [to sell wholesale trading business], *In re Enron Corp.*, No. 01-16034 (Bankr. SDNY Dec. 14, 2001).

[19]Order pursuant to sections 105, 363, and 365 of the Bankruptcy Code [approving sale of wholesale trading arm to UBS Warburg], *In re Enron Corp.*, No. 01-16034 (Bankr. SDNY Jan. 22, 2004).

and creditors to use better risk management procedures, either by enhancing market discipline or by more effective regulatory oversight of regulated financial institution counterparties. But in the event of a market failure, central bank intervention may be the only recourse.

3. Why Give Derivatives Counterparties Special Treatment?

If exempting derivatives from the automatic stay does not make much sense from the perspective of mitigating systemic risk, is the Code's special treatment of derivatives contracts a mistake — the product of effective political pressure on Congress by powerful private interests groups? Not necessarily. In a prior paper (Edwards and Morrison, 2005), we provide an alternative justification for the Code's treatment of derivatives.

In particular, in that paper we argue that the Code's treatment of derivatives is a logical extension of its treatment of cash and cash equivalents. In particular, derivatives contracts are fungible, replaceable assets much like cash; indeed, the Code's definition of cash collateral lumps cash and financial securities together. Just as a firm's going-concern surplus will rarely depend on its cash holdings, its surplus will rarely depend on its derivatives contracts or the collateral posted to support those contracts. If one contract is canceled, it can typically be replaced with an identical contract. If a counterparty seizes government securities posted as collateral, these securities are easily replaced. For this reason, common-pool problems and other externalities will rarely (if ever) arise when a counterparty cancels a derivatives contract with an insolvent debtor and seizes collateral.

This view of derivatives contracts and the automatic stay is fairly straightforward in cases involving financial enterprises, such as hedge funds, that become insolvent. The assets of these firms consist entirely of financial contracts. Although much talent and energy may have been spent to assemble and manage its contracts, there is little or no going-concern surplus in an insolvent hedge fund. If a fund is insolvent, it is because the value of its portfolio has diminished, at least in the short term. The portfolio may increase in value in the long term, but this is not a reason to attempt to reorganize the firm. The firm's assets are fungible and its long-run potential is not destroyed when these assets are seized by creditors. Provided the managers can prove that this long-run potential exists (something the managers would have to do even if the firm were reorganized under chapter 11), outside investors would be willing to pay the firm to reassemble the portfolio.

To be sure, transaction costs will be incurred when the firm reassembles its portfolio, but the small costs of trading in financial markets seem trivial compared to the costs that would be borne by counterparties forced to participate in the bankruptcy process and continue dealing with a firm that may be unable to demonstrate its long-run potential. Indeed, if we are wrong about hedge funds, then broker-dealers too should be treated differently under the Code and the Securities Investor Protection Act, which automatically liquidate broker-dealers.[20] Finally, while our claim — that the automatic stay should permit derivatives counterparties to terminate contracts and seize collateral — is more complicated when applied to nonfinancial enterprises, such as manufacturing, energy supply, and telecommunications concerns, we believe it is equally valid.

This argument, obviously, focuses exclusively on the *ex post* costs and benefits of the Code's treatment of derivatives contracts. From an *ex ante* perspective, two effects are notable: first, the Code lowers the cost of hedging risk generally, by reducing costs to counterparties from entering contracts with firms that might suffer distress; second, the Code encourages rent-seeking behavior by would-be creditors, who have strong incentives to structure loan agreements as derivatives contracts. Interestingly, *both* effects are potentially costly and therefore cut against an efficiency-based argument in favor of treating derivatives differently.

As to the first effect, the Code undoubtedly reduces the transactions costs of hedging risk. A counterparty is more willing to enter a derivatives contract with a firm (or will enter at a lower price) if it can minimize the costs it may incur if the firm suffers financial distress. The Code reduces these costs by protecting counterparties against "cherry picking" and by increasing the speed with which a counterparty can seize collateral (cherry picking occurs when a debtor firm enforces in-the-money contracts and breaches out-of-the-money contracts; counterparties to the latter contracts typically become unsecured creditors and receive pennies on the dollar). Together, these cost-reducing features of the Bankruptcy Code give derivatives counterparties strong incentives to enter contracts with firms even if those firms have a high likelihood of insolvency. Indeed, many economists suggest that the principal benefit of the Code's special treatment of derivatives is that it contributes significantly to the availability of OTC derivatives, increases liquidity in OTC markets, and lowers the cost of hedging risk.

[20]See §§ 109(d), 741, *et seq*. and the Securities Investor Protection Act of 1970, 15 U.S.C. § 78111, *et seq*.

Increased liquidity does not come free, however. The Code reduces the transaction costs of hedging risk by placing derivatives counterparties ahead of other creditors in a bankruptcy proceeding. Counterparties are free to cancel executory contracts and seize collateral while other contractual partners are vulnerable to cherry-picking and other secured creditors must bear some of the costs of the bankruptcy proceedings (including delay in accessing collateral). The Code, then, redistributes wealth from ordinary creditors to derivatives counterparties. Ordinary creditors can respond by increasing the price of credit, which may limit the investment opportunities of some firms, or by seeking to limit (via contract) a borrower's access to OTC markets. But these efforts generate transaction costs, which are presumably non-trivial (otherwise the Code's effect on the transaction costs of hedging is implausible).

We therefore question the net social benefit of increasing liquidity in OTC markets via redistributive provisions in the Bankruptcy Code. Enhanced liquidity is undoubtedly a social good, especially when it is the product of technological innovation (such as the growth of organized exchanges). It is less obviously a social good when it is the product of a government subsidy, paid for by other creditors.

The Code's treatment of derivatives contracts may have other negative *ex ante* effects. Most notably, it encourages *would-be* creditors to switch to being derivatives counterparties prior to a counterparty's insolvency. For example, an existing creditor might take steps to convert its debt contract into a derivatives contract, or a bank might enter a derivatives contract instead of lending directly to a firm (as in a total return swap). There are, in fact, many ways to offer financing through a derivatives contract rather than an ordinary debt contract, as the ongoing Enron litigation shows.[21] This type of rent-seeking behavior shifts wealth from general creditors to derivatives counterparties *ex post*. General creditors may be able to protect themselves *ex ante*, by charging higher interest rates as compensation for the losses resulting from rent-seeking. Other creditors may be unable to protect themselves, including accident victims (non-consensual creditors). In addition, the Code may unintentionally alter the debt structure of firms

[21] See, for example, *Enron Corp. v. Citigroup Inc., et al.*, No. 03-09266 (Bankr. SDNY Sep. 24, 2003); *Enron Corp. v. Lehman Brothers Finance, S.A.*, No. 03-93383 (Bankr. SDNY Nov. 21, 2003); *Enron Corp. v. Barclays Bank PLC*, No. 03-93597 (Bankr. SDNY Dec. 1, 2003); *Memorandum of Law in Support of Defendants the Deutsche Bank Entities' Partial Motion to Dismiss*, No. 03-09266 (Bankr. SDNY Feb. 17, 2003).

towards a greater reliance on derivatives by favoring derivatives counterparties over other creditors. The implications of such shift for firms and debt markets are unclear.

4. Conclusion

Our analysis suggests that Congress's attempt to mitigate systemic risk in OTC derivatives markets by providing special treatment for derivatives contracts under the Bankrutpcy Code is unnecessary and misguided. Indeed, exempting derivatives counterparties from the automatic stay may make matters worse by increasing systemic risk, as it did in the LTCM case. This conclusion, therefore, calls into question the accepted rationale for providing special treatment of derivatives under the Code, and may even suggest that Congress should repeal the exception for derivatives.

In a prior paper, however, we propose an alternative, efficiency-based, rationale for treating derivatives differently that has nothing to do with fear of systemic risk: that derivatives merit special treatment because they, like cash, are not firm-specific assets. But we recognize that the case for reordering priorities in bankruptcy to favor derivatives counterparties on grounds of economic efficiency is an uneasy one, particularly because it is difficult to evaluate the *ex ante* inefficiencies of reordering priorities *ex post*.

Our analysis, however, should give pause to members of Congress and legislators in other countries, who have been lobbied heavily by special interest groups (such as ISDA) to expand the special treatment of derivatives. Lobbyists have argued that such legislation is necessary to prevent a systemic meltdown in OTC derivatives markets should a derivatives counterparty suffer financial distress. Systemic risk may be a real threat, but bankruptcy law has no role to play in minimizing it.

References

Diamond, Douglas, and Raghuram Rajan, 2005, "Liquidity shortages and banking crises," *Journal of Finance*, Vol. 60, April, pp. 615–647.

Economist Newspaper Limited, The, 2001, "Enron: Upended," *Economist.com*, November 29.

Edwards, Franklin R., 1999, "Hedge funds and the collapse of Long-Term Capital Management," *Journal of Economic Perspectives*, Vol. 13, Spring, pp. 189–210.

———, 1995, "OTC derivatives markets and financial fragility," *Journal of Financial Services Research*, Vol. 9, December, pp. 259–290.

Edwards, Franklin R., and Edward R. Morrison, 2005, "Derivatives and the Bankruptcy Code: Why the special treatment?," *Yale Journal on Regulation*, Vol. 22, Winter, pp. 91–122.

Financial Times Limited, The, 2002, "A fresh look at rules for energy and finance," *Financial Times*, February 19.

Greenspan, Alan, 1998, "Statement before the Committee on Banking and Financial Services," U.S. House of Representatives, October 1.

International Swaps and Derivatives Association (ISDA), 2003, "Restoring confidence in U.S. energy trading markets," white paper, April.

———, 2002a, "Enron: Corporate failure, market success," press release, April.

———, 2002b, "Prepared statement of the International Swaps and Derivatives Association, Inc., before the United States Senate Committee on Agriculture, Nutrition, and Forestry," July.

Kaufman, George G., 2003, "A proposal for efficiently resolving out-of-the-money swap positions at large insolvent banks," Federal Reserve Bank of Chicago, working paper, No. 2003-01, January.

Krimminger, Michael, 1999, *Insolvency in the Financial Markets: Banks, Hedge Funds, and Other Complications*, banking policy report, Vol. 18, January, pp. 9–17.

Lee, Susan, 2001, "The dismal science: Enron's success story," *Wall Street Journal*, December 26.

Novikoff, Harold S., 2002, "Special Bankruptcy Code protections for derivative and other financial market transactions," Wachtell, Lipton, Rosen, and Katz, working paper.

Partnoy, Frank, 2004, "Enron and the derivatives world," in *Enron: Corporate Fiascos and Their Implications*, Nancy B. Rapoport and Bala G. Dharan (eds.), New York: Foundation Press, pp. 169–186.

President's Working Group on Financial Markets, 1999, "Hedge funds, leverage, and the lessons of Long-Term Capital Management," Washington, DC, report.

Roth, Paul N., and Brian Fortune, 2001, "Hedge fund regulation in the aftermath of Long-Term Capital Management," in *Hedge Funds: Law and Regulation*, Iain Cullen and Helen Parry (eds.), London: Sweet and Maxwell.

U.S. Senate, Committee on Governmental Affairs, 2003, *Enron's Credit Rating: Enron's Bankers' Contacts with Moody's and Government Officials*, staff report, January 3.

U.S. General Accounting Office, 1999, "Long-Term Capital Management: Regulators need to focus greater attention on systemic risk," Washington, DC, report.

U.S. Office of the Comptroller of the Currency, 2002, "OCC Bank Derivatives Report," Second Quarter, Washington, DC, report.

Weaver, Jacqueline Lange, 2004, "Can energy markets be trusted? The effect of the rise and fall of Enron on energy markets," *Houston Business and Tax Law Journal*, Vol. 4, pp. 1–150.

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Argentina and Uruguay in the 2000s: Two Contrasting Experiences of Banking Crisis Resolution

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1. Introduction

Over the last three decades, systemic banking crises have been a recurrent phenomenon in Latin America. No country typifies this better than Argentina, where a "systemic crisis per decade" has characterized the performance of the country's financial system. Indeed, along with many other countries in the region, Argentina experienced a severe banking crisis that started in 1982 and took an entire decade to resolve. In 1994–1995, the country joined Mexico in facing a banking crisis whose resolution led to a reduction in the number of banking institutions by about 40 percent.[1] More recently, in 2002, Argentina entered into its most severe financial difficulties ever: a trio of banking, debt and balance of payments crises that involved the abandonment of a fixed exchange rate system under the "convertibility law".

Uruguay has also experienced systemic banking crises in the last decades. In 1982, the country joined Argentina, Chile, Mexico, and other Latin American countries that faced severe financial difficulties. In contrast to Argentina, however, Uruguay's banking system recovered in the late-1980s and remained strong during the 1990s. After a decade and a half of stability, a new major banking crisis erupted in Uruguay in 2002, an outcome

[1] See Basu *et al.* (2004) for an analysis of the consolidation of the Argentina banking system in the second half of the 1990s.

that has been widely characterized as "contagion" from the Argentina's crisis. Sharply differing from Argentina, Uruguay quickly solved an emerging external debt problem.

This paper deals with the recent experience of banking crisis resolution in Argentina and Uruguay. These two cases are chosen to show that, even under the very stringent constraints that emerging market economies face during a banking crisis, these economies can indeed bring their banking systems back to solvency *if* they adhere to basic principles of banking crisis resolution.[2] The two countries under study displayed important similarities at the eve of their respective crises but striking differences in outcomes: While the end of Argentina's financial problems is not even in sight at the time of this writing, Uruguay's banking system is on track, albeit slowly, toward a recovery. The analysis of the experiences shows that differences in the regulators' willingness to adhere to basic principles of effective crisis management explains to a large extent the sharply contrasting outcomes between the two countries.

2. Banking Crisis Resolution in Industrial and Latin American Countries: Similar Principles, Different Constraints

To provide a framework for the analysis of banking crisis resolution in Argentina and Uruguay, this section answers three questions: (1) What are the objectives of banking crisis resolution and why should achievement of these objectives be a priority for Latin American countries facing systemic banking difficulties?; (2) What are the basic principles that a crisis resolution program needs to follow in order to meet the desired objectives?; and (3) What are the differences in constraints between industrial countries and Latin American economies in dealing with systemic banking crisis?

2.1. *The main objectives of banking crisis resolution*

Studies of financial systems in Latin America show that the region stands out for the frequency, depth and costs of its banking crises relative to other regions of the world.[3] A number of analysts have attributed the large costs

[2]Most of the conclusions derived for Latin America also apply to other emerging markets. See Goodhart *et al*. (1998).
[3]See, for example, Rojas-Suarez and Weisbrod (1996) and Rojas-Suarez (2002).

associated with these crises to the authorities' long delays in fully recognizing the extent of the problem and the difficulties in setting up a credible program for crisis resolution.[4] A central explanation behind these delays lies in the scarcity of funds available to deal with the problem. After all, facing severe financial deficiencies in priority areas for development, such as health and education, why should Latin American congresses approve the allocation of resources for the solution of banking crises? Although it is fully agreed that avoiding the eruption of a systemic banking crisis is a first best solution, if the authorities find themselves facing a crisis, the critical questions that need to be answered are ones of cost/benefit. Why should restoring the banking system back to solvency be given the highest priority? At what cost to society?

To answer these questions, it is important to go back to the basic distinction between banks and other financial intermediaries. In both industrial and emerging market economies, banks' uniqueness, namely their "franchise value" lies in their special power to provide means of payments in non-cash transactions.[5] When a bank customer withdraws funds from his bank deposit or writes a draft against that account, the bank delivers "good funds" — namely reserves on deposit held at the bank or at the central bank, or cash — to the customer or to the bank of the payee named on the draft. In fact when other liability issuers, such as other financial institutions, promise to deliver payments, they promise to deliver bank deposits. *Thus, as no other financial institution, banks are at the core of the payment system.* A disrupted or nonfunctioning payment system resulting from a systemic banking crisis is extremely costly to society, *be it an industrialized or an emerging market economy,* as it severely inflates the costs of "doing business" and might even completely prevent the execution of essential transactions during the production/distribution/consumption process, with the consequent detrimental effects on overall economic activity. *Therefore, restoring the functioning of*

[4]Long delays in solving a systemic banking crisis are, of course, not unique to Latin American countries, as the long process involved in solving the savings and loan crisis in the United States and the recent crisis in Japan testifies. The *reasons* behind the delays, however, have differed significantly between industrial and Latin American countries.

[5]See Corrigan (1991) for a discussion of the franchise value of banks in the U.S. and other industrial countries. Rojas-Suarez and Weisbrod (1995) include a similar analysis for the case of emerging market economies and is the main source of the discussion contained in this section.

the payment system needs to be the first objective of banking crisis resolution since an adequate payment system is essential for the appropriate operation of a market economy.

But, what resources should be used to resolve the banking crisis? When a large portion of a country's banking system is threatened with insolvency, funds set aside to resolve isolated bank failures, such as deposit insurance funds and emergency central bank credit, are usually inadequate for the task at hand. Thus, in systemic crises, if the integrity of the banking system is to be maintained or restored, public funds must often be used to resolve bank failures. That is, a systemic banking crisis becomes a fiscal problem.

It should be clear, however, that the use of public money to solve a systemic banking crisis belongs to the family of "second best" solutions. In an optimal situation, a systemic banking crisis could have been prevented with some weak banks failing and being replaced or absorbed by other healthy institutions, perhaps from abroad, in a timely manner. If the crisis is being induced by unsustainable policies at the macroeconomic level, financial transactions would migrate abroad. The use of public funds to solve systemic banking crises is justified on two grounds. First, mobility of bank capital across the world is imperfect and slow due to uncertainties about the "true" value of the portfolio of banks in trouble. Second, consistent with the argument above, since the Great Depression in the United States, there has been almost universal agreement that, because banks play a crucial role in the payment system, and this system still remains in the national domain in most countries in the world, public funds must be used to resolve individual bank problems to ensure that a banking system survives the crisis.

Whether the regulatory system has an explicit deposit insurance program or not, inevitably, maintaining the integrity of the banking system requires that some bank liability holders be protected from the consequences of bank failure. Hence, the commitment of public funds for restructuring implies a transfer of resources from the public sector to the banking system. The objective of public policy is to ensure that the transfer is limited to those parties whose protection from bankruptcy is necessary to preserve the integrity of the banking system. In other words, *the second objective of solving systemic banking crisis should be to minimize the amount of public funds used in the restructuring process*. While this objective is universal, it is particularly important for Latin American countries facing severe fiscal budget constraints.

2.2. *Principles for effective banking crisis resolution*[6]

General principles for a bank restructuring program can be derived directly from the main objectives outlined above. There are three basic principles that policymakers need to follow when executing a bank-restructuring program that bring the banking system back to solvency while minimizing the use of public funds. In all three principles, the common thread is the preservation or restoration of the payment system.[7] Just as in the case of the objectives, the principles identified here apply for both industrial and emerging market economies.

The first principle relates to the funding needs of a bank restructuring program. The principle is that a society *should exert strong political will to make bank restructuring a priority in allocating public funds while avoiding sharp increases in inflation.* The importance of avoiding drastic increases in inflation during a restructuring program for the purpose of preserving the payment system cannot be overemphasized. Banks' claim to deliver means of payment is more credible than claims of other liability issuers partly because banks maintain deposits at the central bank and have access to a central bank facility, usually referred to as discount window privileges.[8] If, however, the central bank extends large amounts of credit to banks to keep bank deposits liquid during a banking crisis, inflation would follow and the franchise value of banks would be severely curtailed; this is so because the real value of bank deposits would decrease. Hence, funding for a successful banking crisis resolution needs to come from non-inflationary sources of funds.[9]

The second principle is to *ensure that parties that have benefited the most from the risk-taking activities of the banking business bear a large*

[6]This section and the next draws from Rojas-Suarez and Weisbrod (1996).

[7]The literature on identifying guidelines for effective banking crisis resolution in emerging markets includes work by Enoch, Garcia, and Sundararajan (1999), and Claessens, Klingebiel, and Laeven (2001). The conclusions from this research are consistent with the principles identified in this paper.

[8]In dollarized emerging market economies, the credibility of banks to deliver means of payment is largely related to the dollar reserves they keep (either at the bank, at the central bank or in other financial institutions). In this situation, a central bank's overall ability to provide liquidity to banks is constrained by its holding of net international reserves.

[9]The empirical work by Honohan and Klingebiel (2000) concluded that open-ended liquidity support to banks during a banking crisis has significantly contributed to escalate the fiscal costs of crisis resolution around the world.

portion of the cost of restructuring the banking system. For example, bank stockholders should be first to lose their investment along with large holders of long-term liabilities such as subordinated debt. Also, delinquent borrowers must not be given favorable treatment at public expense. In this regard, "debtor programs" need to be minimized. As evidenced in Rojas-Suarez (2002), excessive use of debtor programs in a number of Latin American countries has unnecessarily increased the fiscal cost of banking crisis resolution.

Indeed, a central component of a successful bank restructuring program consists in enhancing banks' abilities to recover trouble loans. Regulators and supervisors of the banking system must ensure that banks develop procedures to monitor the ability of their loan customers to deliver cash. Proof of liquidity by borrowers is a requirement for achieving banks' solvency on a sustainable basis. Thus, reconstructing or establishing a good monitoring system by banks both enhances the capacity of banks to extend sound credit and protects the franchise value of banks by helping to restore banks' credibility regarding their capacity to deliver liquid means of payment. In sum, executing the second principle not only limits current restructuring costs by forcing private parties to bear part of the loss, but it also creates incentives to restrain risk taking in the future, which strengthens the banking system in the long term.

The third principle is that *prompt action should be taken to prevent problem institutions from expanding credit to highly risky borrowers or capitalizing unpaid interest on delinquent loans into new credit*. Execution of this principle implies implementing policies that distinguish between banks by quality and, therefore, reduces the moral hazard risk in bank restructurings that arises when institutions with low and declining net worth continue to operate under the protection of public policies designed to maintain the integrity of the banking system. This principle also implies that, when possible, insolvent institutions should be removed from the hands of current owners, either through closure or through sale.

To execute a successful crisis resolution program, policymakers must faithfully adhere to all three principles. However, the ability of regulators to carry out these principles is affected by the economic environment in which they operate. Even if a society has mustered the will to fund a bank rescue, it may face a resource constraint that is so severe that it jeopardizes the success of the restructuring program. For example, an economy may not be able to access debt markets for funds. In this case, to finance bank restructuring, it may be necessary to reduce fiscal expenditures in other areas

to avoid inflation. Obviously, as the funding constraint becomes tighter, the task of assigning priorities becomes more difficult. In what follows, the paper identifies the major differences in constraints faced by industrial and Latin American regulators in designing banking crisis resolution programs.

2.3. *Differences in constraints between developed and Latin American countries*

Regulators in emerging market economies countries, in general, and in Latin American countries, in particular, face more extreme constraints for banking crisis resolution than their counterparts in developed ones. Constraints can be divided into three categories: (1) availability of financing resources; (2) availability of markets to sell banking institutions and their assets; and (3) regulatory independence.

Even if a Latin American country has followed a very conservative fiscal policy before the onset of a banking crisis, policymakers face a daunting task in *obtaining adequate funds* for a restructuring program. For example, in contrast to industrial countries, almost no Latin American country possesses a domestic long-term bond market, although many have access to international bond markets.[10] However access to long-term bond markets dries up when international markets perceive that a crisis is imminent.

This would seem to leave the issuance of short-term debt as a more common funding option in Latin America. However, the risk in the short-term market is that the government must not only cover interest payments but also principal payments if the debt cannot be rolled over. Thus, the slightest hint of deterioration in the government's capacity to service its debt may shut the government out of the market, which, in turn, increases the pressure for inflationary finance.

A second constraint affecting the implementation of the principles in Latin America is the *very limited availability of markets for financial institutions or for financial assets held by these institutions*. This is partly a reflection of the lack of the legal and market infrastructure necessary for secondary markets to develop. The existence of such markets can be useful for minimizing public expenditure because they permit private investors to

[10]Among Latin American countries, Chile stands out for having an incipient domestic market for long-term bonds.

recognize the franchise value of a failed bank's customer base and its distribution system. Revenues from the sale of these valuable assets can be used to offset public absorption of credit losses.

In contrast to Latin America, markets are large and funding is abundant relative to the size of the problem in many industrial countries. In these latter cases, regulators have a wide variety of choices available to resolve banking problems that can be classified into three broad categories: private sector merger or sale; takeover and management by the regulatory authorities; and, as a last resort, bailout of an existing institution with ownership left largely in place.

Regulatory know how is sometimes in short supply in a number of Latin American countries as well. However, even in markets with skilled professionals in bank supervision, if bank regulators do not have political independence, they may not be able to sell banking properties through arm's length transactions. *Lack of regulatory and supervisory independence* is the third severe constraint in many Latin American countries getting in the way of an effective application of the principles for banking crisis resolution. This problem also arises in the developed world, but it is less important than in Latin America because other constraints are less severe.

Thus, the constraints on bank supervisors in emerging market economies make it much more likely that the bailout option is taken in these countries than in industrial countries. Nonetheless, restructurings, even under the most severe constraints, are more likely to be successful if policymakers attempt to enforce the three general principles outlined above. As an examination of the experiences in Argentina and Uruguay will reveal, it is the capacity of the authorities to adapt principles to local conditions, more than the severity of the constraints that often determines whether a bank restructuring effort will be successful. Table 1 summarizes the differences in constraints facing policymakers in industrial countries and in Latin America.

3. The Crises of Argentina and Uruguay in the Early 2000s: Similar Beginnings, Contrasting Outcomes

The process of banking crisis resolution in Argentina and Uruguay in the early 2000s serves to exemplify the central theme of this paper, namely, that adherence to the principles stated above makes all the difference in achieving results. As this section will show, since the eruption of the banking crisis in

Table 1. Differences in constraints between Industrialized countries and Latin America

Constraints	Industrialized Countries	Latin America
Financing sources	Access to markets remains during the crisis	Access to international capital markets disappears
Markets	Domestic capital markets and secondary markets for long-term assets exist	Lack of an adequate legal and judicial infrastructure as well as repeated financial crises prevent secondary assets markets from developing
Regulatory independence	It is subject to strict standards, through scandals eventually occur	In some cases, lack of independence is so severe that regulators and supervisors do not do their jobs, even if adequate tools are avaliable

Argentina by the end of 2001, authorities have consistently departed from the principles for effective crisis resolution and, as a result, the banking system remains largely insolvent when asset valuation is measured at market prices. In contrast, while still facing important difficulties, regulators in Uruguay better adhered to the principles and, by mid-2004, the restructuring program was making important progress in the right direction.

3.1. *Origins of the crises and constraints for crisis resolution*

Although this paper has not dealt with the *causes* of banking crises, a brief discussion of the roots of the Argentinean banking crisis is important to understand the constraints faced in designing an effective resolution program and to contrast them with the constraints faced by the authorities in Uruguay.

Interestingly enough, there is yet no consensus regarding the origin of the Argentinean crisis. While some argue that the banking system was strong all the way until 2001 when the government implemented policies that severely damaged the banks' capital base, others argue that the banking system suffered from important fragilities during the late 1990s that were bound to emerge if an adverse shock hit the system. The evidence suggests

that there is truth in both arguments; namely, that while fragilities in the banking system developed during the late 1990s, policies undertaken by the government during 2001–2002 completely destroyed the franchise value of banks by rendering the payment system ineffective.

The increasing fragilities that emerged during the late 1990s were twofold. First, banking system soundness depended on maintaining the exchange rate fixed (the convertibility law) because of the large amounts of banks' dollar lending to borrowers with peso-denominated sources of income (in particular loans to the non-tradable sector).There are a number of arguments explaining this development. The claim here is that the increasing high exposure to credit risk denominated in foreign currency can be explained, at least partially, by the government's offer of a free guarantee to the banking system. The free guarantee derived from the promise of keeping the convertibility law without making it costly for the banks to extend dollar loans to borrowers with peso-denominated income. This guarantee implied that a large fiscal contingent liability arose during the late 1990s. It would be hard to argue that banks' managers and the authorities were not aware of the augmented risk to the sustainability of the convertibility law, especially after the stream of shocks that affected Argentina's competitiveness since the Russian crisis. However, in spite of increased perceptions of exchange rate risk, currency mismatches between banks' assets and borrowers' sources of income continued to increase and the percentage of dollar-denominated loans in total loans increased from about 63 percent in 1997 to about 75 percent by 2001. This upsurge occurred without a corresponding increase in the ratio of loan loss reserves even though there was a significant reduction in the capacity to pay by borrowers resulting from the economic recession that started in 1999. Under-pricing of credit risk cum exchange rate risk was an important (and increasing) fragility that paved the way to the crisis.

The second fragility arose from banks' increased exposure to government risk. Figure 1 shows the evolution of the share of government paper in banks' balance sheets since 1990. This share declined significantly up to 1994, increased temporarily as a result of the banking crisis resolution in 1995–1996; but after a partial correction in 1997–1998, the ratio resumed an upward path and by end-2001 had reached a level close to that in 1990. Among all types of banks, public banks had the largest share of government paper in their assets. While it is true that there was a compulsory sale of government bonds to banks, this only happened in late 2001. Thus,

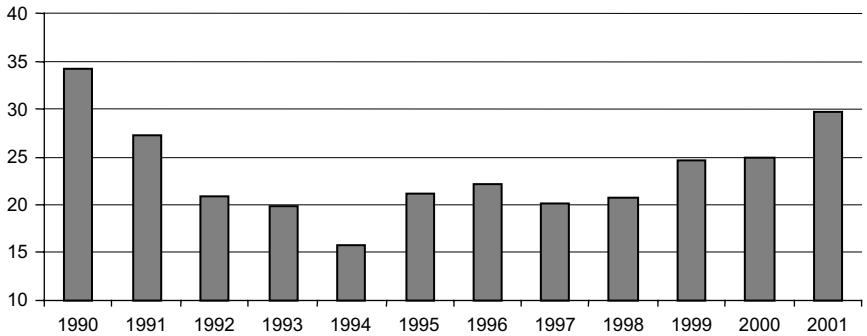

Figure 1. Argentina: Government liabilities held by banks (as percent of total assests) (Source: IMF International Financial Statistics (various issues))

partly as a consequence of attempting to keep profitable in a recessionary period, banks underestimated the risks of holding government liabilities. This risk increased during the late 1990s and into 2001 as the fiscal balance deteriorated during the period and the public sector indebtedness increased.

Before the crisis, the full potential adverse effects of these fragilities were not apparent from the traditional indicators of financial soundness. On an overall basis, banks did not appear to suffer from undercapitalization or lack of liquidity. However, as shown in Table 2, banks' quality differed significantly according to ownership.[11] Public banks not only displayed a significantly higher ratio of past-due loans to total loans, but also the lowest ratio of provisioning as indicated by the ratio of loan loss reserves to past due loans. This underprovisioning overestimated the "accounting capital" reported by banks.[12] The opposite was true for private foreign banks, which had the strongest indicators in the system. As a result of the recession, bank earnings remained low for all categories of banks during 2000–2001 and even became negative for public banks by end-2001.

[11]Data in table 2 covers only the 18 largest banks in the system which by the end of 2001 accounted for about 83 percent of total assets. Analysts' reports indicate that small banks (not included in the table) were the least efficient in the system (see Gutierrez and Monte-Negret, 2004).

[12]Table 2 only reports the ratio of equity to assets. A better indicator of bank capitalization, the risk-weighted capital to assets ratio, was not available for the different categories of banks considered in that table.

Table 2. Argentina: Banking soundness indicators by ownership of banks (in percent)

Public Banks	Dec-97	Dec-98	Dec-99	Dec-00	Mar-01	Jun-01	Sep-01	Dec-01
Past-due loans/Total credits	15.97	14.03	16.76	18.08	20.37	13.30	15.70	16.86
Loans loss reserves/Past due loans	52.00	68.89	59.31	58.36	59.50	61.46	70.97	68.57
Liquid assets/Deposits	15.40	13.26	12.61	11.15	10.14	13.43	14.08	7.49
Net Interest Margin	3.03	3.38	3.29	3.71	0.67	2.04	2.84	3.38
Equity/Assets	11.84	9.64	8.77	9.51	9.58	9.42	10.52	9.50
ROA	0.53	−0.03	0.10	0.19	−0.57	0.02	0.01	−0.48
Loans in dollars/Total loans	63.95	70.42	71.54	73.37	74.11	68.95	70.25	77.50
Private Domestic Banks	Dec-97	Dec-98	Dec-99	Dec-00	Mar-01	Jun-01	Sep-01	Dec-01
Past-due loans/Total credits	6.97	6.29	6.52	8.17	8.82	8.28	9.86	9.68
Loans loss reserves/Past due loans	75.52	89.14	83.41	75.11	71.42	77.78	75.21	76.25
Liquid assets/Deposits	18.60	17.33	12.89	9.54	11.39	18.51	22.63	17.54
Net Interest Margin	4.03	5.06	4.57	4.21	4.42	4.75	5.33	3.50
Equity/Assets	18.23	17.44	16.73	13.26	13.80	15.13	16.63	18.53
ROA	1.30	1.39	1.31	−0.96	1.27	1.41	1.41	0.55
Loans in dollars/Total loans	61.53	62.60	63.05	67.61	66.95	67.05	63.77	75.65
Private Foreign Banks	Dec-97	Dec-98	Dec-99	Dec-00	Mar-01	Jun-01	Sep-01	Dec-01
Past-due loans/Total credits	3.83	4.29	4.41	5.59	5.66	5.80	6.19	5.89
Loans loss reserves/Past due loans	64.67	85.40	89.94	85.51	84.91	85.88	83.79	100.58
Liquid assets/Deposits	18.73	10.96	10.75	9.09	10.86	19.80	17.44	22.50
Net Interest Margin	4.01	3.97	4.17	4.26	4.47	4.55	5.25	5.66
Equity/Assets	13.19	8.61	8.20	8.33	8.24	8.53	10.20	9.91
ROA	1.21	0.64	0.61	0.87	0.92	0.87	0.86	0.01
Loans in dollars/Total loans	69.42	68.85	68.86	55.60	67.13	68.50	48.29	70.65

Source: Salomon Smith Barney and Central Bank of Argentina

The combination of a growing stock of public debt, increasing overall fiscal deficits and no signs of economic recovery during 2001 fueled perceptions of government default and abandonment of convertibility. As these perceptions threatened to expose the risks in the banks' balance sheets, a significant withdrawal of deposits took place during that year. Consistent with quality differentials between categories of banks, the deposit outflow was especially large in the two major public banks, which accounted for a large fraction of the deposit base. By the end of 2001 the banking system lost about 20 percent of deposits. As a response to the deposit loss, in December 2001, the government imposed limits on withdrawals of deposits to 250 pesos (dollars) per week per account. This measure came to be known as the "corralito".

It is interesting to note that although the market price of sovereign debt sharply decreased in market value during 2001, this was not reflected in banks' balance sheets because of accounting practices that did not require registering public debt in banks' books at "market value". The truth of the matter is that, from an economic — rather than accounting — perspective, bank capital significantly decreased in value throughout 2001.

Depositors' fears were validated during January 2002 when the government declared default and devalued the peso by 29 percent. In February 2002, a "dirty floating" exchange rate regime was implemented.

Thus, in early 2002, Argentina found itself with a currency crisis, a debt crisis, and a banking crisis. On top of the economic and financial difficulties, the country was in the middle of a severe political crisis that had manifested itself, among many other events, in the resignation of President de la Rúa in December 2001. This complex situation meant that any process of banking crisis resolution was to face unusually severe constraints. The funding constraint was particularly severe as the default on its external obligations implied a total exclusion of Argentina from the international capital markets. The sharp recession, which further accentuated during 2002, reaching a decline in the rate of growth of economic activity of over 10 percent, added to the funding constraint as the government was unable to collect sufficient revenues to allocate to the resolution of crisis.

As will be discussed below, the initial steps taken by the authorities after the default further tightened the constraints for banking crisis resolution, especially with regards to the treatment of foreign banks, which in the past (Argentina 1995 and Chile 1984) had played an important role in bringing the system back to solvency. Moreover, regulatory independence, a necessity for credible restructuring programs had been significantly

Table 3. Uruguay: Banking soundness indicators, 2001 (in percent)

	Total	Public	Private
Nonperforming loans/Total loans	17.9	39.1	5.6
Provisions/Nonperforming loans	49.7	39.2	91.7
Assets/Capital	16.7	12.2	22.3
Capital/Risk adjusted assets	11.8	17.5	7.6
ROA (after tax)	−2.3	−4.5	−0.9
Liquid assets/Deposits	15.9	20.9	13.6
Loans in dollars/Total loans	80.6	56.0	93.0

Source: IMF (2003).

weakened during 2001 with the limitations imposed to the autonomy of the central bank and the dismissal of its president.

The effects of the crisis in Argentina had adverse consequences on Uruguay's banking system, mainly because about 40 percent of the banks deposits in Uruguayan banks were held by Argentines. Following the imposition of the corralito in Argentina, Argentine depositors in need of cash began to withdraw their funds in Uruguay. This led to a fall of about 12 percent of total deposits during the first two months of 2002.

While the withdrawal of deposits by Argentines was a severe shock to the Uruguayan system, a full-fledged crisis might not have erupted if the shock had hit a stronger banking system. Table 3 shows some indicators of banking soundness by end-2001, at the eve of the Argentine shock. While liquidity and capital ratios appear adequate for both public and private banks, the ratio of nonperforming loans was extremely high for the group of public banks (almost 40 percent) and these loans were severely underprovisioned. As discussed above, this means that the economic value of capital for the group of public banks was much lower than the reported accounting capital. Public banks' share in total assets of the banking system was 41 percent at the end of 2001. As in the case of Argentina, foreign banks were the best performers among banks in the private sector.

In terms of fragilities, while the Uruguayan banking system did not have a significant exposure to government risk (government debt as a ratio of total assets was less than 3 percent in 2001), it suffered from the same problem of currencies mismatches discussed for the Argentine case. About 80 percent of total loans were dollar-denominated and half of the dollar-loans were

extended to borrowers with Uruguayan peso-denominated income. An additional source of fragility was the large political interference in the lending practices of the two large state-owned public banks, who also had the largest credit exposure in dollar loans to non-tradable sectors, such as the agriculture and the mortgage sectors The weak indicators of bank soundness for this group of banks reported above are consistent with lending practices motivated by political decisions rather than by market assessments of borrowers' quality. Finally, unexposed malpractices in a segment of the private sector banks added to the financial fragilities.

The initial withdrawal of deposits resulting from contagion in Argentina was followed by additional withdrawals from Uruguayan residents who feared that the banking system was facing solvency rather than liquidity problems. These fears were exacerbated by Uruguay's downgrade from investment grade status and by the depreciation of the exchange rate that followed the capital outflows associated with the withdrawals by Argentine depositors. The exchange rate depreciation, in turn, curtailed borrowers' capacity to repay dollar-denominated loans, further weakening the banking system. During April–May 2002, the system lost an additional 20 percent of deposits. By the end of July, total withdrawal of deposits had reached 42 percent.

Did the Uruguayan authorities face constraints as severe as those in Argentina for implementing a banking crisis resolution program? The major differences were not in terms of traditional macroeconomic indicators. For example, by the end of 2001 both countries were in the midst of a sharp recession and had severe fiscal imbalances. (By the end of 2002, the consolidated fiscal deficits as percentage of gross domestic product (GDP) in Argentina and Uruguay were 5.9 and 4.1 respectively; in addition, during that period, the ratio of public sector debt to GDP was about 60 percent in Argentina and 54 percent in Uruguay). This data indicates that neither country was in a sound position to allocate fiscal funds to the resolution of the banking crisis. However, the crucial difference between Argentina and Uruguay regarding their access to sources of funds for crisis resolution lied in the willingness of the multilateral organizations to provide financial support to Uruguay. There were two major reasons for this outcome. The first is that the crisis in Uruguay was perceived as contagion from Argentina. The second, and perhaps more important reason, is that Uruguay did not default on its external debt obligations with the private sector and instead kept a market-friendly approach to creditors that eventually culminated in a successful debt exchange in May 2003.

An additional important difference in terms of funding constraints is that, as will be discussed below, the Uruguayan authorities were able to persuade the headquarters of foreign banks to recapitalize their branches and subsidiaries, while policy decisions by the Argentinean authorities penalized foreign banks. Moreover, constraints for effective resolution of banking problem were eased somehow in Uruguay by reinforcing regulatory and supervisory institutions soon after the eruption of the crisis. In contrast, they were weakened in Argentina.

3.2. *Initial responses to the banking crises: Did they adhere to the principles?*

As has been forcefully stated in this paper, the payment system is at the core of banks' businesses and defines the franchise value of banks. Policies in Argentina in the pre-devaluation period weakened significantly the effective functioning of the payment system by freezing deposits and imposing tight controls on cash withdrawals (the corralito). Banks' soundness was also hampered by an exchange of government bonds held by banks for illiquid government bonds in November 2001.[13]

As a full-blown banking crisis erupted following the devaluation/default, policy actions further accentuated the problem and violated all principles for effective crisis resolution.[14] First, the government imposed an asymmetric pesification of bank assets and liabilities. Dollar-denominated loans were converted into pesos at the pre-devaluation exchange rate of 1 to 1 while dollar-denominated deposits were converted into pesos at the rate of 1.4 pesos per dollar. This policy had severe consequences for banks' capital and drastically violated principle 3 by exacerbating the potential costs of crisis resolution. Moreover, since foreign obligations remained in foreign currency, while loans were pesified, a large foreign currency exposure was introduced in banks' balance sheets.[15]

[13]For an analysis of policies affecting the banking system in the pre and post devaluation period, see LASFRC (2002).

[14]This paper does not discuss all policy actions taken during this period. A comprehensive analysis of measures taken from 2001 to 2003 is contained in Gutierrez and Montes-Negret. De la Torre and Schmukler (2002) discuss the situation of the banking system prior to the crisis and the measures taken during 2001.

[15]This contrasts significantly with the policy actions of the Chilean authorities in 1984–1985 and the Brazilian authorities in the pre-devaluation period of 1999. In both cases, the authorities placed large amounts of dollar-denominated or dollar-linked bonds in the banks in order to cover the foreign-currency exposure created by the devaluation.

Second, a tighter freeze was imposed on time deposits since the authorities focused on containing deposit losses rather than restoring the solvency of the banking system. In the so-called corralon the use of time deposits in transactions was limited and their maturity was forcefully restructured. These actions violently contradicted principle 2 as they severely penalized depositors, who had no part in the eruption of the crisis. In addition, banks lost their franchise value as the payment system became totally impaired. The freezing of deposits and pesification brought about tremendous public discontent and major disputes between the Executive Branch and the Supreme Court.

Penalizing of depositors through freezing of accounts is not new. Mexico used a similar strategy with dollar-denominated deposits (known as *petro-dollars*) during the debt crisis of 1982. The financial disintermediation that followed contributed to a series of consecutive crises that ended in the major disruption in 1995, the so-called tequila crisis. In contrast, also in the early 1980s, the Chilean program attempted to recover depositors' confidence in the banking system by preserving the real value of the deposits. Because of the high costs on depositors, the initial policy responses to the Argentina crisis of 2001 look quite similar to Argentina crisis of 1982.[16]

Third, in February 2003, the government introduced exchange and capital controls in its additional attempts to contain deposit loses and limit the effect of the outflows on the exchange rate. This further complicated banks operations as payments abroad needed the approval of the Central Bank. The combinations of all the measures described above implied a breaching of existing contracts and significant legal uncertainty and prompted headquarters of foreign banks to deny financial support to their branches and subsidiaries.

By mid-2002, the payment system was completely inoperative and bank loans portfolios continued to deteriorate as no restructuring program was in place.[17] Adhering to principle 1 was not among the authorities' priorities.

In contrast to developments in Argentina, since the beginning of the crisis the Uruguayan authorities gave priority to preserving the payment system and containing depositors' loss of confidence. However, an important mistake of the initial policy response was to treat the crisis as a "liquidity" rather than as a "systemic solvency" problem. As such, the main efforts focused on the provision of liquidity by the central bank to the banks through

[16]See Rojas-Suarez (2004).

[17]In early 2002, Congress suspended for 6 months legal actions by creditors to collect on their debts. This further undermined the value of contracts and creditors' rights.

the wide variety of instruments at the disposal of the Central Bank to perform its role as a lender of last resort.[18]

During the three waves of bank runs from February to June 2002, the central bank provided significant liquidity assistance, especially to those banks identified as critical for the functioning of the payment system.[19] This group of banks included the two public banks (BROU and BHU), four private banks (Banco de Crédito, Banco de Montevideo, Caja Obrera y Comercial), and some cooperatives. Foreign banks self-financed their deposit outflows with liquid assets held abroad.

However, in spite of a widening of the crawling exchange rate band, the provision of liquidity translated into large losses in foreign exchange reserves, a weakened exchange rate and an increase in the inflation rate. As international reserves experienced a sharp fall, markets fears of a potential outcome similar to Argentina intensified. Moreover, the credibility of the central bank as an effective lender of last resort lost credibility since the ratio of international reserves to deposits plummeted. Throughout this period, the Uruguayan authorities made significant efforts in differentiating their policies from those in Argentina. Thus, pesification, corralito, and default on external debt were not among the options considered.

Still under the assessment of a liquidity crisis, the authorities created in June 2002 the Fund for Fortifying the System of Banks (FFSF). This fund, initially funded with IMF resources, aimed at complementing the liquidity provision of the central bank. As some banks were experiencing solvency problems, the fund was also designed to provide capitalization support. However, soon after its creation, it became apparent that the size of the FFSF was not sufficient to deal with the problems at hand. With international reserves at levels below $1 billion, it finally became apparent that the banking system was experiencing a systemic solvency crisis. In

[18]These instruments included advances in pesos, an automatic overdraft facility, rediscount of central bank certificate of deposits and sales of government and central bank paper.

[19]During the first wave of bank runs, Banco de Galicia-Uruguay, a subsidiary of an Argentinean bank was not able to respond to deposit withdrawals due to the constraints on the movement of flows by its headquarters imposed by the Government of Argentina. The Uruguayan authorities suspended the operations of Banco de Galicia-Uruguay. During the same period, Banco Comercial, the largest private bank in the country, was also subject to massive deposit withdrawals due to its financial relations with a liquidated Argentinean bank and the uncovering of irregularities in managerial practices. This bank was recapitalized with funds provided by the Government of Uruguay and the three foreign shareholders (Chase Manhattan, Dresdner Bank and Credit Suisse First Boston).

July 2002, the central bank had to intervene in Banco Comercial, Banco Montevideo, Caja Obrera, and Banco de Credito. On July 30, 2002 a bank holiday was declared and the beginning of a comprehensive restructuring program (to be discussed below) was set in place.

3.3. *The implementation of the restructuring program in Uruguay and the (lack of) program in Argentina*

As discussed above, initial measures taken by the Argentinean authorities aggravated rather than improved the solvency of banks. Moreover, by means of challenges on constitutional grounds, the so called amparos, many depositors whose time deposits had been reprogrammed were able to obtain compulsory repayment by banks at the prevailing market exchange rate (which had reached levels above 3 pesos to the dollar at times in 2002) rather than the initial rate that was used for the reprogramming (1.4 pesos to the dollar). The exchange rate differential generated further losses for banks that remain to be compensated.

As discussed in Gutierrez and Montes-Negret (2004) the run on the banks stabilized in mid-2002 due to a number of measures including the capital controls, the gradual lifting of the corralito and voluntary swaps of time deposit for government bonds (BODEN). However, a serious and comprehensive program for bank restructuring has not yet been put in place to address the solvency issues still faced by banks. In sharp violation of principle 2, treatment to banks has not been discriminated according to quality. Indeed, the early provision of liquidity and rediscounts by the Central Bank favored public banks, which, as shown in Table 2 were the weakest group of banks in the system at the onset of the crisis.

While the story of the current banking crisis in Argentina is still unfolding, two crucial pieces of evidence indicate that, in spite of the stabilization of deposits, the banking system remains in serious condition. The first is that holdings of government bonds by banks are not measured at market value, artificially inflating the value of their assets. As long as the public external debt problem remains unsolved, it would be very difficult to restore bank solvency. The reason is that the deteriorated perceptions of risk as reflected by the extremely high spreads on sovereign debt (Figure 2) will keep the market value of bonds at very depressed levels. This is true for domestic and foreign public bonds since both are liabilities of the same borrower: the Argentine government. Moreover, as the process of "compensation" for

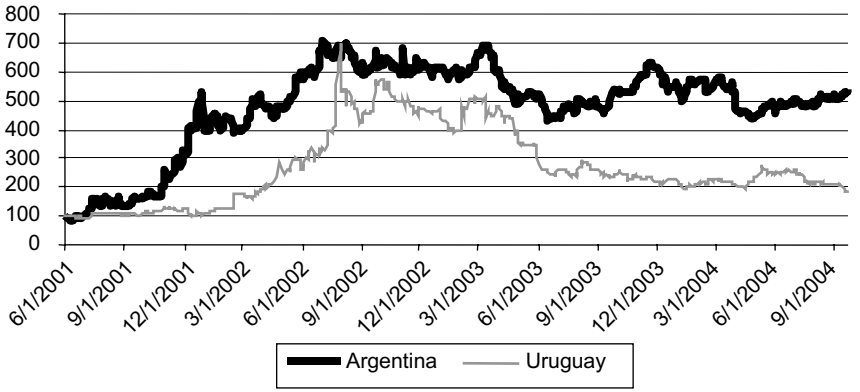

Figure 2. Uruguay and Argentina EMBIG spreads (June 2001 = 100) (EMBI+ for Argentina and EMBIG for Uruguay. (Source: Bloomberg.))

Table 4. Argentina: Composition of deposits by ownership of banks (in percent)

	Dec-01	Dec-02	Dec-03	Jun-04
Public banks	35.73	45.51	50.66	51.03
Private domestic banks	17.83	14.64	13.32	18.79
Private foreign banks	46.44	39.85	36.02	30.18
Total	100.00	100.00	100.00	100.00

Source: Central Bank of Argentina.

bank losses associated with the asymmetric pesification and the amparos advances, banks' exposure to government risk would increase. Thus, from the perspective of this analysis, no permanent resolution to the banking crisis can take place without a resolution of the external debt crisis.

The second fact is that there has been a significant and steady shift, in terms of market share, of deposits from private foreign banks to public banks (see Table 4).[20] This indicates that depositors are not exercising market discipline in their choices of financial institutions. Instead, based on the recent experience, depositors are basing their actions on the belief that the

[20]This point is also advanced in Gutierrez and Montes-Negret (2004).

government will favor public banks. The lack of a restructuring program is therefore leading to an adverse selection problem and intensifying the moral hazard problem typical of banking systems where adequate regulatory and supervisory practices are not in place.

In contrast to the Argentinean corralito, which failed to stop deposit withdrawals and brought about riots and generalized public discontent, the bank holiday imposed in Uruguay on July 30, 2002, was short-lived (only four business days) and allowed sufficient time to secure "credible funds" to finance the implementation of a comprehensive restructuring program. The success of the strategy to stabilize deposits was rooted in the ability of the Uruguayan authorities to quickly negotiate an IMF Program for the purpose of: (1) funding the Fund for the Stability of the Banking System (FSBS) with sufficient resources to fully back U.S. dollar sight and saving deposits of major domestic banks; (2) reprogramming the maturities of U.S. dollar time deposits of the public banks; and (3) restructuring intervened domestic banks.[21]

The shift in gears in the policy actions of the Uruguayan authorities from a program designed to use central bank liquidity as a major source of funding to a program aimed at restructuring the banking sector with non-inflationary funds was in compliance with principle 1 for successful crisis resolution. In addition, the actions taken to liquidate insolvent banks without unduly penalizing depositors were a strict adherence to principle 2. In early 2003, the *Nuevo Banco Comercial* was created with the good assets of three liquidated banks. The new bank was designed as a fully commercial bank, temporarily owned by the government, but under private management. If, as planned, the bank is successfully privatized in the near future, principle 2 would be reinforced. It is important to note, however, that at the time of the writing, the privatization efforts were suffering important delays.

The extent to which principle 3 is fully achieved will depend on the pending issues regarding the restructuring of the public banks and the disposal of the remaining assets from the liquidation of insolvent banks. A plan for restructuring BROU, the major public bank, was finalized in December 2003. The plan aims at increasing the viability of the bank through a decrease

[21]The reprogramming of U.S. dollar time deposits at public banks involved increasing maturities of up to three years. Repayment of 25 percent of principal was to take place in the first year, another 35 percent after two years and the remaining 40 percent after three years. Programmed deposits of BHU were placed at BROU.

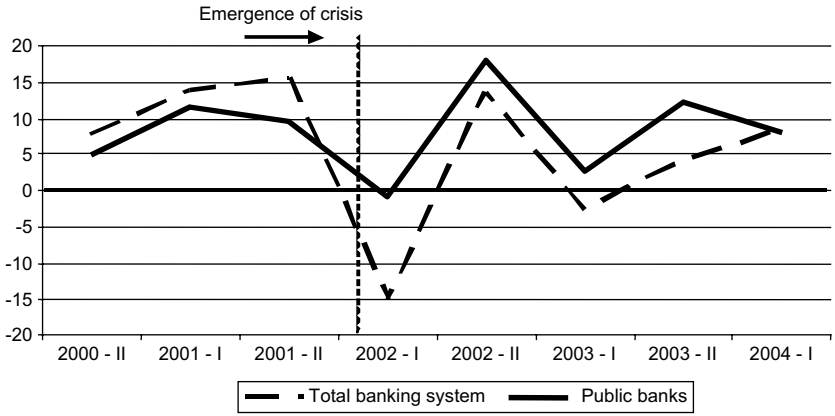

Figure 3. Uruguay: Rate of growth of deposits in the banking system (in percent) (Source: Central Bank of Uruguay. Growth rates are calculated for six months periods.)

in operating costs and a redirection of its activities towards business segments where it has a comparative advantage. The importance of improving the soundness of public banks in Uruguay cannot be overstated. As shown in Figure 3, the rate of growth of deposits in the banking system has recovered from the sharp plunge in 2002 and has remained highly positive since 2003. However, public banks had gained market share in terms of deposits. It is, therefore imperative to consolidate the viability of these banks if the restoration of the banking system is to become a permanent achievement.

In the meantime, the markets have rewarded Uruguay's compliance with the principles for effective crisis resolution. As shown in Figure 2, after skyrocketing during mid-2002, spreads on sovereign bonds have decreased significantly and are approaching pre-crisis levels. Moreover, in October 2003, Uruguay regained access to the international capital markets and was able to place a $200 million issue of three-year, peso-denominated, inflation indexed bond. These developments sharply contrast with those in Argentina, where spreads remain at extremely high levels.

4. Concluding Remarks

After reviewing the contrasting experiences of banking crisis resolution in Argentina and Uruguay in the early 2000s, five major lessons emerge. First,

a good banking crisis management must begin with three basic principles: muster the political will to channel noninflationary funds to solve the crisis; ensure that parties responsible for the crisis bear most of the costs of restructuring; and take prompt action to prevent problem banks from expanding credit to delinquent borrowers. The key for a successful program is a strong commitment to adherence to the three principles, even under stringent constraints, including loss of access to the international capital markets. The Uruguayan experience evidences this.

Second, the experiences show that attaining sufficient political will to give priority to a prompt and effective resolution of the banking crisis is the most difficult challenge to overcome. As the recent experience in Argentina demonstrates, political pressures tend to impede the implementation of a successful restructuring program. The delays and failures of implementation simply raise the cost of crisis resolution.

Third, large holdings of government debt in banks' balance sheets introduce an important source of fragility in the banking systems of emerging markets. This is because an increase in the government default risk lowers the market value of government debt, weakening the asset value of banks. As the Argentina case demonstrates, the resolution of its banking crisis can not take place without a resolution of the country's external debt crisis.

Fourth, a crisis should be used as an opportunity to strengthen supervision and improve the quality of bank management. This was the strategy followed by Chile in 1984 and by Argentina in 1995. In this regard, the backslide of depositors' confidence associated with the current process of resolving financial difficulties in Argentina is extremely disappointing. In contrast, the improvement in supervisory practices under an International Monetary Fund program is benefiting the long-term stability of the banking system in Uruguay.

Fifth, foreign banks can play an important role during systemic banking crisis in two forms: First, to the extent that they are perceived as relatively stronger than local banks bank runs might be contained to a shift of deposits from local to foreign banks, limiting capital flight. Second, experience demonstrates that if the policies of the local authorities aim at preserving the payment system and achieve a rapid resolution of the crisis, headquarters of foreign banks can provide lender of last resort facilities to their subsidiaries and even capitalization funds, limiting the cost of the crisis. The experience in Uruguay is a case in point. In contrast, Argentina's adverse policies towards foreign banks have further tightened the country's financing constraint to resolve its banking difficulties.

A policy question that comes out of these conclusions is what authorities can do to ease constraints in order to reduce the cost of resolving banking crises. The only certain means of loosening constraints in Latin America is to build credibility in policies and institutions, which takes time. Even policies that are designed to reduce constraints directly**,** such as forced savings schemes, can only work when authorities pursue policies to build credibility. For example, mandatory pension funds can be useful as a means of relaxing funding constraints. However, these programs will work only if investors have some confidence in the economy. If policies are volatile and institutions weak, some investors will react to forced savings plans by removing funds from voluntary savings vehicles, such as bank deposits. Nonetheless, forced savings can improve funding options if introduced when institutions and markets are clearly becoming more stable.

How can authorities know that the constraints for resolving banking difficulties have been eased? A clear market signal for regulators is that funds markets do not dry up in a crisis — a feature present today primarily in industrial countries.

References

Basu, Ritu, Pablo Druck, David Marsto, and Raul Susmel, 2004, "Bank consolidation and performance: The Argentine experience," International Monetary Fund, working paper, No. WP/04/149.

Claessens, Stijn, Daniela Klingebiel, and Luc Laeven, 2001, "Financial restructuring in banking and corporate sector crises: What policies to pursue?," National Bureau of Economic Research, working paper, No. 8836, July.

Corrigan, E. Gerald, 1991, "Balancing progressive change and caution in reforming the financial system," *Quarterly Review*, Federal Reserve System of New York, Vol. 16, Summer, pp 1–12.

De la Torre, Augusto, and Sergio Schmukler, 2002, "Argentina's financial crisis: Floating money, sinking banking," The World Bank, mimeo, April.

Enoch, Charles, Gillian Garcia, and V. Sundararajan, 1999, "Recapitalizing banks with public funds: Selected issues," International Monetary Fund, working paper, No. WP/99/139, October.

Goodhart, Charles, Philipp Hartmann, David Llewellyn, Liliana Rojas-Suarez, and Steven Weisbrod, 1998, *Financial Regulation: Why, how and where now?*, London: Routledge.

Gutierrez, Joaquin, and Fernando Montes-Negret, 2004, "Argentina's banking system: Restoring financial viability," The World Bank, working paper, No. 2/04, January.

Honohan, Patrick, and Daniela Klingebiel, 2000, "Controlling the fiscal costs of banking crisis," The World Bank, policy research working paper, No. 2441.

International Monetary Fund, 2003, "Uruguay: Third review under the stand-by arrangement and request for modification and waiver of applicability of performance criteria — Supplementary information: Report on the 2002 banking crisis, available at www.imf.org, June 27.

Latin American Shadow Financial Regulatory Committee (LASFRC), 2002, "Resolution of Argentina's financial crisis," Statement No. 5, Buenos Aires, May.

Rojas-Suarez, Liliana, 2004, "Banking crisis resolution in Latin America: Principles, facts, and lessons," in *IPES 2005*, Washington, DC: Inter-American Development Bank, forthcoming.

———, 2002, "Banking crisis in Latin America: Can recurrence be prevented?," paper prepared for a World Bank conference on Banking Crisis, Montevideo, Uruguay, March.

Rojas-Suarez, Liliana, and Steven R. Weisbrod, 1996, "Managing banking crises in Latin America: The dos and don'ts of successful bank restructuring programs," in *Banking Crises in Latin America*, Ricardo Hausmann and Liliana Rojas-Suarez (eds.), Washington, DC: Inter-American Development Bank.

———, 1995, "Financial fragilities in Latin America: The 1980s and 1990s," International Monetary Fund, occasional paper, No. 132, October.

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Comments on Lessons from Case Studies of Large Insolvencies

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The papers in this session address a very important topic. In the last 20 years there were an impressive number of banking and financial crises all over the world. Caprio and Klingebiel (1997) identify 112 "systemic" banking crises in 93 countries and 51 "borderline" cases in 47 countries since the late 1970s. On average, the costs of these crises were estimated to be about 12 percent of the countries' gross domestic product (GDP). By looking at the resolution of past crises, can we learn something about the characteristics of good resolution procedures? What are the common problems that arise in these crises?

While the episodes analyzed by these three papers are very different, they underlie that the main source of systemic risk comes from the fact that in financial institutions a fraction of demandable deposits (or claims) are used to finance long-term illiquid activities. This special feature of the banking system makes the implementation of a bankruptcy procedure very complex. The success of a resolution procedure depends on its ability to reduce the exposure that the claim of each stakeholder has to the actions of other claim holders. The three papers describe three cases in which the correlation among creditors' actions and claims was very high. Interestingly, the correlation between the various actions of the claim holder in these examples was high either because there were some preexisting conditions, or because the resolution of the crises through various institutional actions or regulation, as for example in the Long-term Capital Management (LTCM) case, increased the correlation among the creditors claims.

1. BCCI & Barings: Bank Resolutions Complicated by Fraud and Global Corporate Structure, by Richard J. Herring

In July 1991, the Bank of Credit and Commerce International (BCCI) failed because of widespread fraud. BCCI's complex structure consisted of a holding company, incorporated in Luxembourg, and two main subsidiaries incorporated in the Cayman Islands and Luxembourg. BCCI had branches in over 70 countries, with the offices in the UK being branches of the Luxembourg subsidiary. Its principal shareholders were in Abu Dhabi. Rather than using its own funds for proprietary trading, BCCI used depositors' money to fund their trading activities. When this trading resulted in large losses, they were covered up with more fictitious loans. In this particular case, there was not a systemic risk threat, which made the resolution easier. But interestingly, the case suggests that there was a huge coordination failure among supervisory authorities, and also that the differences in the bankruptcy codes of the various countries created conflicts of interest between the claim holders and also potentially wrong incentives for the supervisory authority. Herring points out that the U.S. supervisory authorities had increased the capital requirements on the U.S. subsidiaries. Some of those funds were closed by international depositors because in some countries the single-entity doctrine would apply. The single-entity doctrine created a conflict of interest between various claim holders because the single-entity doctrine could cause a branch to be closed in one country by the supervisory authority of another. Interestingly, the features of this resolution made claims of various depositors more interdependent than they would have been with a clearly specified insolvency regime. Also, these differences across legislation create not only a potential free-ride problem among depositors, but also among regulators.

The Barings' debacle was also caused by fraud. However, unlike BCCI the failure of Barings was attributable to fraud by one individual (a form of operational risk). Herring describes that most of the tensions in the Barings case occurred when Barings entered bankruptcy administration on February 27, 1990. During that period counterparties found their positions frozen and they could not liquidate them or transfer them. This fact is interesting as it relates to the paper by Edwards and Morrison that I will discuss later. Edwards and Morrison claim that the fact that U.S. counterparties to derivative contracts are not subject to automatic bankruptcy created most

of the systemic risk in the LTCM case. Herring claims that the absence of this feature in the Barings case was the main problem in the bankruptcy procedure. It would be interesting to understand what is different in these two cases and why the authors reach such different conclusions.

2. Derivatives and Systemic Risk: What Role can the Bankruptcy Code Play? By Franklin R. Edwards and Edward R. Morrison

Edwards and Morrison use the LTCM case to discuss the bankruptcy code special treatment of derivatives under Chapter 11. In the U.S. counterparties to derivative contracts receive special treatment and can terminate contracts and seize collateral if they are owed money (derivatives contracts are exempted from the automatic stay).

The rationale for this rule is that prompt liquidation of the contract could avoid systemic risk. In principle, the rule would make sense if the counterparties to the derivative contracts are so large that forcing them into an automatic stay would prompt a systemic crisis. Edwards and Morrison make the opposite claim. In fact, the U.S. Bankruptcy Code's special treatment of derivative contracts generated the risk of a "run" on LTCM. For this reason, Edwards and Morrison claim the Federal Reserve Board intervened in the LTCM case. The fear that under Chapter 11 derivative counterparties could run on LTCM and generate a systemic crisis was in fact generated by the special treatment of derivatives under Chapter 11.

It seems to me that the question on whether the special treatment of derivative contracts under Chapter 11 exacerbates systemic risk or reduces it depends on the relative size of the derivative counterparties and the hedge fund. It would be interesting to understand whether the LTCM case would generalize in the future.

3. Argentina and Uruguay in the 2000s: Two Contrasting Experiences of Banking Crisis Resolution, by Liliana Rojas-Suarez

In this case too, at least some of the differences between Argentina and Uruguay seem to point at the way claims of different creditors were linked

together. Rojas-Suarez mentions Argentinean banks were very exposed to government risk. The central government and several Argentinean provinces had severe exposure to the banking system. This feature of the Argentinean banking industry implied that, when one specific province's finances deteriorated, the claims of the other provinces became riskier affecting the overall risk of the bank and the other claim holders. The paper is similar to the other two as it highlights that the main failure in the Argentinean crisis was the inability to isolate the solvency of the banking system from the solvency of the government.

The paper also emphasizes that the absence of credible bankruptcy procedures may result in ill-conceived resolutions because the bankruptcy procedure lacks coordination of actions of the various functional regulators within, as well as across, countries.

References

Caprio, G., and D. Klingebiel, 1997, "Bank insolvency: Bad Luck, bad policy, and bad banking" in *Annual Bank Conference on Development Economics 1996*, Michael Bruno and Boris Pleskovic (eds.), Washington, DC: World Bank.

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Planning for Efficient Resolution — Where to from Here?

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The Reserve Bank of New Zealand's Creditor Recapitalization (BCR) Project: An Option for Resolving Large Banks?

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1. Introduction

Subsequent to the Asian crisis, the Reserve Bank of New Zealand undertook a review of its crisis management policies and instruments. One of the major issues that was confronted was how to deal with the failure of a large bank in a way that would be consistent with the bank's general approach to banking supervision (which requires shareholders and creditors to bear the cost of a failure), while keeping the cost of the failure within acceptable limits.

The context in which this review was undertaken is a small banking system (17 registered banks with total assets of around NZ$220 billion) serving a population of four million. Fifteen of the banks (with 98 percent of total assets) are foreign owned. Ten of these operate as branches.

The system is relatively concentrated with the four largest banks (which are defined as systemically important) accounting for 85 percent of total assets and 90 percent of retail deposits. The assets of the single largest bank are equivalent to 55 percent of gross domestic product.

On the funding side, the system is distinguished by a relatively low proportion of retail funding (43 percent) and a high proportion of foreign funding (37 percent), much of it from parent banks.

The New Zealand system of banking supervision is distinguished by more reliance on disclosure and on directors' attestations and less on direct supervisory oversight and rules than most foreign regimes. The incentives for bank creditors to impose market discipline on banks are heightened by the absence of a deposit insurance regime and regular public statements that neither the government nor the Reserve Bank guarantees deposits in the banking system.

For the market-incentive approach to banking supervision to work, the possibility that a large bank could fail, and that depositors could lose some of their money, has to be credible. However, the "too-big-to-fail" doctrine will have credence if people believe that a government will always bail out a large bank because the repercussions for the wider economy would be too great and uncertain, and/or the government would be unwilling to have the funds of several hundred thousand depositors tied up for months, or even years, in a conventional liquidation.

What is required is an intermediate option between some form of bank bailout and a liquidation, which places the cost of a failure on shareholders, depositors and other creditors, but reduces the cost of the failure by minimizing disruptions to the payments system and bank customers' access to liquidity.

2. The BCR Option

The proposed solution to the problem is the "haircut", or BCR (bank creditor recapitalization), option. The essential idea in BCR here is that once a bank is placed in statutory management (which freezes all of the bank's liabilities), a haircut is applied to the bank's liabilities which, in effect, recapitalizes the bank and provides a further buffer for unforeseen losses and other eventualities. Creditors would retain a residual claim on the haircut portion of their funds and would eventually receive back the portion that was not absorbed by losses and other expenses connected with the failure.

Initially, the bank's key transactions, savings and term deposit accounts would suffer a haircut (other liabilities would remain frozen) and the bank would reopen to conduct its core banking business within a short time frame. Individual customers would have access to their transaction and savings accounts and (some credit facilities) at that point. The non-haircut portion of most other liabilities would be successively released in succeeding weeks.

The key advantages of a BCR, compared to a conventional statutory management, are that the payment system will be back to functioning, in a near normal mode, within a short period (possibly the next business day), and that creditors' liquidity will not be tied up for a long period. It may be also possible to preserve some of the bank's franchise value, which will help reduce, or even eliminate, creditor losses. A well-structured and understood failure management regime will also provide more certainty to survivor banks and other creditors and reduce the potential for widespread systemic disruption and adverse reaction by depositors and investors.

Compared to a bailout, the key advantages are that the cost of a failure is borne by the shareholders and creditors of the failed bank, rather than by the taxpayers, and that the integrity of the current supervisory regime is preserved. The precedent and moral hazard costs of a taxpayer funded bailout are avoided.

While the BCR is simple in concept, it is not trivial to execute in a technical sense. While most of the problems could be addressed by the application of sufficient resources, the Reserve Bank has been conscious of the cost of installing and maintaining the necessary systems and procedures that would make the choice of the BCR in a crisis situation a practical option. At present the New Zealand banking system is sound and the probability of a bank failure for the foreseeable future is small. Part of the challenge is to develop a BCR option that is cost effective given the New Zealand situation.

3. Developing the Option

To see if it is possible to develop a reliable and affordable BCR option, the Reserve Bank has spent considerable time working on the concept. There has been extensive work within the Reserve Bank; the concept has been discussed with New Zealand's systemically-important banks; and the Reserve Bank has worked closely with one of those banks on a pilot scheme to assess the nature and cost of the IT functionality that would have to be pre-positioned within a bank for the BCR to be a practical option.

The key conclusions from this process are as follows:

- It should be technically possible to apply a haircut and reopen a large New Zealand bank within 24 hours.
- It will be necessary to pre-position some IT functionality within each bank to do so. This functionality would allow the statutory manager to haircut current and savings accounts and term deposits. It appears that this pre-positioning could be achieved at a moderate cost.
- The Reserve Bank, the failed bank, surviving banks, and relevant payment switches would need to have a comprehensive and mutually consistent set of business continuity plans in place to manage the failure event. These plans would have to be periodically tested and updated. Developing these plans is the major challenge in making the BCR a viable option.

- The statutory manager would need effective legal and practical control over the bank's key business processes and management. Over recent years several systemically-important banks have outsourced key management and IT functions to their foreign parent banks and it is not clear that a statutory manager would have the practical capacity to implement a BCR within the desired timeframe because of this. The Reserve Bank is now developing an outsourcing policy that is intended to ensure that essential failure management capacities would be available to a statutory manager.
- It would be necessary for the non-haircut portion of liabilities to be guaranteed by the government. Otherwise creditors would be likely to withdraw their funds immediately they get access to them and there would be a risk that the bank would fail a second time once it reopened.
- The BCR process has to be robust to a closure at anytime during the banking day. Because the main New Zealand banks are foreign owned, New Zealand may not necessarily have the luxury of placing a bank in statutory management at the technically most convenient time.

4. The Structure of the BCR Process

While all of the details of the BCR option have not been settled, the key elements of the model can be broken down into the following phases:

(1) Imposition of statutory management and closure of the bank;
(2) Imposition of the haircut on transaction and savings accounts and term deposits;
(3) The bank re-opens for core transactions business;
(4) Imposition of haircut on other liabilities; and
(5) Decisions on future operations and restructuring path are made.

4.1. *Imposition of statutory management and closure of the bank*

Once the bank is placed in statutory management, all of the bank's liabilities are frozen. It is important to the haircutting procedure that the closure is effective. That is, funds should not be credited to, or paid-out from,

accounts after the time the bank is placed in statutory management, but before the haircut is imposed. The reason is that the bank's liabilities, at the time the bank is placed in statutory management, can legally be subject to a haircut. However, obligations entered into after the point of statutory management must be paid in full. If pre- and post-statutory management obligations become intermingled before the haircut is imposed, this is not necessarily fatal to the BCR concept, but it does complicate its execution. Uncertainties as to the status of payments and the whether they are subject to a haircut would generate considerable confusion amongst bank creditors and discredit the BCR process.

Thus it is important to the success of a BCR that the legal status of all payments (particularly payments in deferred settlement systems) are known with certainty; that there are clear and robust procedures for managing those payments within the BCR; and that the rules of the game are perceived to be fair and can be easily communicated to the customers of the failed bank and to surviving banks.

Payments in the two high-value wholesale systems are settled on a real-time gross basis across exchange settlement accounts at the Reserve Bank. The status of these payments is not expected to cause any difficulty. The retail payment systems, however, are settled on a net deferred basis at the end of each banking day. The failure to settle rules of these systems have long been perceived by the Reserve Bank as being insufficiently clear or robust to deal with a bank failure situation. The New Zealand Bankers' Association is currently reviewing these rules and the Reserve Bank will be working with the banks to ensure that the new rules and procedures are consistent with a BCR.

The pilot project showed that effectively closing a bank is not a simple matter and that procedures for doing so would have to be pre-positioned in every systemically-important bank and tested regularly.

The pilot also suggests that the best way to obtain legal certainty as to the legal status of retail transactions at different times on the failure day may be to amend the Reserve Bank Act to give the statutory manager legal power to assign transactions to pre and post failure categories. The alternative, which is to ascertain the legal status of all transactions under current law and then build the BCR processes around these understandings would be extremely complex and might still leave considerable uncertainty as to the status of transactions. It might also be difficult, if not impossible, to build a workable and efficient haircut mechanism around the existing legal structure.

4.2. *Imposition of the haircut on transactions accounts and term deposits*

The haircut process for most retail accounts is relatively straightforward. It is a matter of reading the balance of each account at the point of failure, calculating the haircut from that balance, debiting the account and transferring the haircut funds to a shadow account. The pilot project showed that it is easier to embed this process within the existing structure of transaction processing rather than constructing an entirely new framework. This means that the haircut would have to be applied as part of the conventional overnight processing round and the freed-up accounts would be available to depositors sometime in the next business day. The functionality to give effect to the haircut would have to be pre-positioned. The pilot project suggests that building and positioning the haircut modules would not be overly expensive.

The timing of the process means that only a limited amount of time would be available to make an assessment of the size of the required haircut. In some cases there might only be a few hours. This means that the initial haircut would be conservative with a substantial buffer added to a first very rough assessment of possible losses. The haircut module would have the capacity to return any "excess" haircut to depositors in subsequent days and weeks as the bank's financial status becomes clearer.

The haircut would preserve, as much as possible, the ranking of creditors that would apply in a conventional liquidation. Secured creditors should be able to be paid in full while subordinated creditors would not receive any payment until the unsecured creditors were paid in full.

4.3. *The failed bank reopens for core transactions business*

To ensure the bank can re-enter the payments system relatively seamlessly it will be necessary to ensure that there no legal or other impediments to it doing so. For example, changes might need to be made to payment system rules and the impact of the statutory management and BCR on other commercial arrangements such as credit card franchise agreements would have to be understood.

A further key issue is what services beyond simple access to account balances will be provided and when these services will be brought on stream.

4.4. *Imposition of the haircut and other liabilities*

Non-deposit liabilities would remain frozen until their haircut had been applied. A priority order would have to be established for these liabilities that would take into account the importance of releasing certain types of liabilities and the complexities in doing so.

In principle, other liabilities, including off-balance-sheet liabilities, would be treated the same way as deposits: the size of the liability at the point of failure would be established; the standard haircut would be applied; and the appropriate sum placed in a haircut account. The balance would be then paid out. While the intention is to treat all unsecured creditors equally, there may be some cases where it may not be appropriate to apply a haircut. This may be because the amounts involved are small and not worth the effort, or because application of the haircut may pose problems for the post-haircut operation of the bank. The statutory manager is not legally obliged to haircut all liabilities equally, or at all. As a general proposition, however, there would have to be a good reason not to apply a haircut to a particular set of liabilities, particularly if the amounts involved were material. Once an exception is made it risks unwinding the perceived fairness of the whole exercise and would set up pressures for exceptions to be made for other classes of creditors.

4.5. *Decisions on future operations and restructuring path*

Work will be undertaken to define what set of banking services will always be provided when the bank is re-opened and what other services might be provided depending on the position of the bank and other circumstances at the time of the failure.

A bank can exit the BCR/statutory management in the following ways:

- Liquidation,
- Restructured to become a stand-alone bank with creditor shareholders,
- Sale to new owners, or
- "Repurchase" by the parent.

The BCR is compatible with all of these exit routes.

5. An Example of a BCR

The following sets out a simplified example of a BCR. The first figure shows the bank's pre-failure balance sheet where it is adequately capitalized. The second shows the situation after there has been a shock to the bank's loan assets that reduces their value by 15 percent. The third shows the balance sheet after a haircut (in this case 30 percent) has been applied.

Assets		**Liabilities**	
Loans	20	*Deposits*	18
		Other liabilities	0.5
		Sub. debt	0.5
		Equity	1
	20		20

Figure 1. Pre-shock balance sheet (billions of dollars)

Assets		**Liabilities**	
Loans	17	*Deposits*	18
		Other liabilities	0.5
		Sub. debt	0.5
		Equity	(2)
	17		17

Figure 2. Post-shock balance sheet (billions of dollars)

Assets		**Liabilities**	
Loans	17	*Free deposits*	12.6
		Free other liabilities	0.35
		Haircut accounts (current value)	
		Deposits	3.95
		Other liabilities	0.10
	17		17

Figure 3. Post 30 percent BCR balance sheet (billions of dollars)

6. Risks in Implementing a BCR

The BCR is a complex mechanism and could pose a number of technical and policy risks if it were deployed. Some of these risks include:

- *Technical failure*. The pre-positioned IT functionality required to impose the haircut on most liabilities may not have been adequately tested and may not work as designed. It may not be possible to implement the haircut in the planned time frame. The haircut may have to be abandoned (with the government probably having to bail the bank out) or the bank would reopen later than promised, which might discredit the process.
- *Administrative failure*. The BCR requires the timely implementation of a number of pre-positioned plans and will require significant capacity to deal with the unexpected. This might place excessive pressure on the bank management and on the statutory manager's and Reserve Bank's capacity to cope.
- *Implications for surviving banks and the New Zealand "name"*. If a bank is subject to a BCR then this will impact on the market's assessment of likely government support for surviving banks, which could be destabilizing in some circumstances. It might also make foreign investors more nervous about being exposed to New Zealand risk more generally.
- *Policy U-turn*. If a government changes its mind on the merits of the BCR option after the process has begun and decides to bail the bank out, the overall costs of the crisis will be higher than if the haircut had not been attempted. Placing the bank in statutory management will release counterparties from certain contracts (such as hedging arrangements) which are valuable to the bank and there will be some damage to the value of the bank's franchise from being in a failure situation even for a small period of time.
- *Fiscal risk*. The initial haircut could be too small and the government may have to pick up the shortfall.

7. The Status of the BCR

While the pilot project has delivered some promising results no decision has been made, as yet, on whether to proceed to the implementation phase.

If a BCR model is implemented then it will be an addition to the Reserve Bank's failure management tool-kit rather than a replacement for existing options.

The idea of pre-committing to use the BCR in all failure situations has been considered but rejected. The arguments for pre-committing are that it would further underpin the New Zealand approach to banking supervision by making it clear that there would be no resort to a bailout in a banking crisis, and that it would reduce uncertainty as to the Reserve Bank's and government's approaches in a crisis situation.

However, it would not be possible or credible to pre-commit all future governments to a particular approach to handling a bank failure situation. The decision to apply the BCR framework, or an alternative approach, would be for the government of the day to determine, after consultation with the Reserve Bank and other relevant agencies.

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Planning for Efficient Resolution

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1. Introduction

Japan has been suffering from enormous difficulties in its financial system since the early 1990s, epitomized by the sheer size of nonperforming loans and the malfunctioning of the banking system. The decade-long struggle to restore the soundness of the financial system, however, is finally reaching the concluding stage. The soundness of the financial system has improved as bank restructuring progresses and the economy recovers.

During the last decade of financial difficulties, we experienced a number of bank failures. The toll of failed financial institutions amounted to 20 banks and 161 cooperative banking institutions. The cost incurred by the bank failures, measured by the cumulative financial assistance given by the Deposit Insurance Corporation to make up the net losses of the failed banks, reached $170 billion or almost 4 percent of nominal gross domestic product (GDP).

2. Resolutions of Large Financial Institutions

Table 1 shows the major failures of large financial institutions in Japan.

Long-term Credit Bank of Japan (LTCB), whose assets were $240 billion, failed and was temporarily nationalized in October 1998. It was the largest bank failure ever to have been seen in Japan. The resolution required extreme delicacy and care in order to wind down, in an orderly fashion, large derivative contracts of $463 billion on a notional basis. The nationalized bank was sold to a U.S. investment fund afterwards.

Yamaichi Securities, one of the four biggest securities firms in Japan, with clients' assets of $203 billion, was closed down and dissolved in November 1997. It operated in a wide range of securities markets and owned a number of banking subsidiaries abroad. The resolution testified

Table 1. Major failures of financial institutions

(Date of Failure)	Asset Size/Net Losses	Major Characteristics	Resolution
Long-term Credit Bank of Japan (Oct. 1998)	$240 billion $30 billion	• One of three long-term credit banks • Large derivative contracts: $463 billion	• Nationalization • Sold to a U.S. investment fund
Yamaichi Securities (Nov. 1997)	$203 billion (Clients' assets) $1 billion	• One of four biggest securities firms • A conglomerate with banking subsidiaries in U.K., Germany, etc.	• Orderly wind-down • Close down and dissolve • Bank of Japan's provision of liquidity
Hokkaido-Takushoku Bank (Nov. 1997)	$82 billion $16 billion	• One of city banks located in Hokkaido • Significant negative impact on the entire region	• Business transfer to North Pacific Bank (a regional bank in Hokkaido) and Chuo Trust • Bank of Japan's provision of liquidity

to the difficulties involved in the orderly unwinding of cross-border transactions on a real-time basis. It required global engagement and the cooperation of our fellow central bankers and regulators around the world. This case demonstrated that a large and complex financial institution could be successfully resolved.

Hokkaido-Takushoku Bank was a city bank in Hokkaido, in northern Japan, with assets of $82 billion. It was the dominant bank in the region. When the failure of the bank was made public in November 1997, something close to panicked fear about the prospects of the entire Hokkaido region took hold, and business activities were on the verge of suspension. In this case, the bank's regional operations were assumed by another bank in the region and nationwide operations were assumed by a major bank.

3. Systemic Transmission

According to our experiences in Japan, systemic risk, in a broad sense, has four channels of transmission.

The first is the knock-on effect through failures of payments/settlements. In the cases of Yamaichi and LTCB, the systemic effect through cross-default clauses was one of the major concerns. The second is the drying-up of liquidity in the interbank markets. The third is the break down of credit relations. Note that the borrower firms' credit relations with a failed bank cannot be instantly replaced by an equivalent new relationship with another bank, given the presence of information asymmetry. The negative impact on credit relations was a serious source of concern when Hokkaido-Takushoku bank failed. The fourth is the loss of confidence in the financial system and in the whole economy. Note that the period of financial disturbances witnessed intense withdrawals of deposits and an increase in cash demand. Under such circumstances, Japanese banks were reluctant to extend new loans and the "credit crunch" became a serious issue. We also observed significant loss of confidence from both consumers and producers. More serious output losses might have materialized if the situation had not been well managed.

A characteristic of Japan's financial difficulties was that we had to place overriding priority on containing systemic risk under the extremely vulnerable economic conditions. The negative impact of the bursting of the unprecedented large asset price bubble in the early 1990s seriously damaged the balance sheets of banks and firms. Meanwhile, the forces of globalization were putting compelling pressure on many Japanese industries to carry out structural changes, and loans to borrowers who had lost their competitive edge turned increasingly into nonperforming loans on banks' books. In such circumstances, what we confronted was not just bank failures, but risks that could trigger a collapse or a paralysis of the whole economy. The cost of the materialization of systemic risk undoubtedly overwhelmed the cost of moral hazard.

4. Role of the Central Bank

Here, I would like to briefly mention the role of the central bank and monetary policy. The central bank has the capacity to quickly respond to a fragile financial system through the provision of liquidity as the lender of last resort

and via other central bank services. Therefore, once a crisis emerges, the central bank's role is essential for containing systemic risk. In fact, during the last decade the Bank of Japan has provided special loans to 21 distressed financial institutions as the lender of last resort, on each occasion giving careful consideration to issues of moral hazard for all parties involved. We have established and made public four conditions as shown below.

(1) There must be a strong likelihood that systemic risk will materialize,
(2) There must be no alternative to the provision of central bank money,
(3) All relevant parties are required to take clear responsibility to avoid moral hazard, and
(4) The financial soundness of the Bank of Japan itself must not be impaired.

In addition to the lender of last resort function, the Bank of Japan has made every effort to contain systemic risk by keeping stable money market conditions through careful monetary operations. On each occasion, we closely monitored financial markets to analyze whether tensions in the financial system would generate a systemic impact through the channels I mentioned earlier. On the basis of such analysis, we carefully selected the means of liquidity provision to the markets, taking into account the uneven liquidity positions among major market participants at times of stress. Quantitative monetary easing, which was introduced in March 2001 to stimulate economic activity, has also contributed to the mitigation of liquidity constraints on banks and to the maintenance of market stability. These experiences suggest that the thoughtful implementation of monetary policy and money market operations can contribute to financial crisis management while minimizing moral hazard.

5. Current Framework for Resolution

In response to the series of failures of financial institutions over the last decade, we have built a framework for bank resolution. It is based on the Deposit Insurance Law amended in 2000. Table 2 gives an outline of the relevant schemes. These are purchase and assumption (P&A), the pay-out scheme, and the systemic risk exception. Each involves a clearly defined modus operandi. In the case of the P&A, we have established precisely defined model procedures, which cover the closure of a failed bank on Friday night through to the resumption of relevant operations on Monday morning. The pay-out scheme is geared towards sudden bank failures and is

Table 2. Resolution schemes in Japan

	Procedure	Loss Sharing
P&A Purchase & Assumption	• Announcement of failure on Friday evening • Administration by Financial Administrator • Reopen on Monday morning • Business transfer to the bridge bank • Business transfer to the assuming bank	• Public: pay-out costs • Shareholders: lose the value of their shares • Managers: lose their jobs etc. • Depositors: lose a part of uninsured deposits • Creditors: lose a part of their credits
Pay-out	• Announcement of failure • Administration by Financial Administrator • Repayment of insured deposits	

not selected in cases of standard failure because it is generally more costly than the P&A scheme.

In cases when systemic concerns arise, the Financial System Management Council is called. This council is chaired by the prime minister and its members include the Governor of the Bank of Japan. It decides whether a specific case justifies systemic risk exception, namely whether it could trigger extremely serious disruptions in either nation-wide or region-wide financial order. In such an instance, the Council has the power to decide on (a) capital injection; (b) financial assistance in excess of the pay-out cost limit; or (c) temporary nationalization. (see Table 3).

I would like to emphasize that the above mentioned framework is set up so as to be applied with a high degree of comprehensiveness, clarity, and swiftness. In particular, loss-sharing among different stakeholders, including the public sector, is clearly formulated. These features are essential to enhance the efficiency of the resolution as well as to restrain moral hazard.

Although the framework is firmly established, it has not yet been fully tested as our policies for the financial stability have been implemented in an environment where deposits are fully or partly guaranteed even for uninsured depositors. This guarantee, which is applied for the current and

Table 3. Systemic risk exception — Financial System Management Council

	Solvency/Specific Cases	Loss Sharing
Capital injection	solvent Resona (May 2003)	• Public: (injected capital) • Others: none
Financial assistance in excess of pay-out cost limit	insolvent	• Public: pay-out costs + in excess of pay-out costs • Shareholders: lose the value of their shares
Temporary nationalization	insolvent Ashikaga (Nov. 2003)	• Managers: lose their jobs etc. • Depositors and creditors: none

ordinary deposits, is scheduled to be lifted next April. The post-guarantee environment will present fresh challenges for the appropriate employment of the resolution framework.

6. Toward more Efficient Resolution in the Future

Finally, I would like to very briefly touch upon some major points that look toward more efficient resolution in the future. There remain three major tasks that require our continued attention.

The first is to be adequately equipped for the resolution of large and complex financial institutions that operate across business lines and across national borders. As this issue has already been intensively discussed in the previous sessions, I will content myself with simply pointing out the issue here.

The second task, which is absolutely fundamental to efficient resolutions, is the accurate evaluation of the balance sheets of financial institutions. This is a precondition for the appropriate choice of a resolution scheme and the realization of a private sector solution. All of us, and resolution practitioners in particular, recognize the far-reaching difficulties involved in capturing the true state of financial institutions even with the most sophisticated methodologies for credit evaluation and risk management.

The third task is to improve our ability to analyze systemic implications. This includes obtaining a better understanding of the mechanisms through which systemic crises materialize, as well as maintaining a constant awareness of the sources of vulnerability in the financial system and the economy. This is crucially important when determining whether or not a particular case has systemic implications, as this critical judgment also determines the cost of the resolution.

In concluding, I would like to say that not only microprudential oversight of financial institutions but also more comprehensive and deeper macroprudential analysis are essential to achieve the above mentioned tasks. As a central banker, I am convinced that accomplishing this will be among the major challenges facing central banks over the coming years.

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Resolving a Large Bank: The FDIC's Perspective

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I applaud the Chicago Federal Reserve Bank for holding a conference on systemic financial crises and resolving large bank insolvencies, and I want to thank the organizers of the conference for giving me an opportunity to speak. This topic is an important one, and it is especially important to the Federal Deposit Insurance Corporation (FDIC). A key feature of the U.S. deposit insurance arrangements is the role of the FDIC as receiver of failed banks. This results in a bankruptcy mechanism for banks that is separate and distinct from the normal bankruptcy code. Therefore the ability to manage a large bank failure effectively is central to the FDIC's mission.

Andrew Crockett gave us an excellent overview of the issues covered by this conference. He stressed the need for prevention, responding to stress, and the resolution of problem situations. His comments aligned well with the changes in the regulatory framework since the U.S. banking crisis during the late 1980s and early 1990s.

There have been a number of developments in financial markets and regulation in recent years that have improved financial stability. With respect to prevention, there have been important changes in prudential supervision. We have shifted our focus to "risk-based" supervision; there is now more emphasis on using market information in the supervisory process; and the Basel II capital rules will improve the alignment between bankers' incentives and the goals of banking regulators.

In terms of responding to stress, one major development has been the prompt corrective action (PCA) framework established by Congress through the FDIC Improvement Act of 1991. The guiding principle here is that quick and forceful responses to problems reduce the costs of providing a financial safety net.

How well have risk-based supervision and PCA worked in recent years? Suppose that in 1995, someone had painted the following scenario. The U.S. would suffer a large stock market decline, there would be an extreme cycle of boom-and-bust in the technology sector, and there would be severe financial crises on three continents. In addition, the U.S. economy would experience a significant corporate sector recession featuring what is arguably an overextended household sector. Given these circumstances, one might have anticipated significant banking problems. Instead, over the past decade the U.S. banking industry was a source of strength to the economy and the FDIC's insurance losses were remarkably low.

Having touched on prevention and response to stress, I'll spend the rest of my remarks on the topic of resolving a large bank insolvency.

If a large bank were to fail, banking regulators would face an important trade-off between short-term stability and long-term moral hazard concerns. A resolution method that minimizes disruption in the short term may exacerbate long-term moral hazard concerns, and it will probably not be the least-cost resolution.

In the 1980s, the FDIC concentrated on minimizing disruption in the short term. With the passage of the FDIC Improvement Act (FDICIA) in 1991, Congress sent a clear signal to shift our emphasis toward minimizing costs — and effectively toward a heavier emphasis on long-term moral hazard concerns. I believe this is a healthy shift, and this has been reflected in the FDIC's operating procedures.

The primary tool for this change is the least-cost test. One way to look at the least-cost test is in terms of a bank's balance sheet. On the asset side the FDIC's goal is to maximize our return. We were doing that before FDICIA, and we do it now. On the liability side, a big question we face relates to the distribution of losses across creditors. Which creditors do we expose to the risk of loss, or, as Randy Kroszner put it, who has "skin in the game"?

When Continental Illinois failed in 1984, the FDIC protected all creditors — even the subordinated debt holders at the holding company. Only the stockholders suffered losses. At that time the FDIC's resolution options were limited: In practice, the choices were to close the bank and pay out depositors, or render open-bank assistance. After the Continental Illinois episode, the FDIC asked Congress for a new tool, bridge bank authority, and received it in 1987.

Both First Republic (March 1988) and the Bank of New England (January 1991) were resolved using bridge bank authority. At First Republic,

all the bank's creditors were protected, but the creditors and stockholders of the holding company suffered losses. At Bank of New England, all depositors and qualifying financial contracts (QFCs) were protected, but losses were imposed on most general creditors and on creditors and stockholders at the holding company.

All of these resolutions pre-dated FDICIA. Since the implementing regulations for FDICIA were in place, the FDIC has strictly adhered to the least-cost test. There have been no large failures since then.

So, how would the FDIC respond if a large bank were to fail today? The first major decision would be whether to invoke the "systemic risk" exception. The systemic risk exception may be undertaken if the least-cost transaction poses a systemic risk ("would have serious adverse effects on economic conditions or financial stability") *and* a non-least-cost transaction would mitigate that risk. In addition, there is a significant approval and review process required.[1] We think it is unlikely that the systemic risk exception would be invoked. But even if it were, the FDIC could still impose losses on the bank's creditors.

We expect that the bank would be closed, and that it would reopen as a bridge bank on the following business day. The bank's operations would, for the most part, continue in the bridge bank. On the failure date, all the assets and liabilities would first be placed into receivership. Then the assets and the claims of some of the creditors would be transferred to the bridge bank. Normally the creditors whose claims are transferred to the bridge bank would be protected from future losses. The big question would be to determine which credits would be placed in the bridge bank, and which would remain in the receivership and suffer losses.

Under the least-cost test, this would hinge on the bank's liability structure and the anticipated value of the bank's assets. Losses would be imposed in the following order:

(1) Equity,
(2) Subordinated debt,
(3) General creditors, and
(4) Depositors.

[1]The systemic risk determination can only be made by the Secretary of the Treasury, after it is approved by a two-thirds majority of the FDIC Board and the Federal Reserve Board, and after consulting with the President. See *Federal Deposit Insurance Act*, Section 13(c)(4).

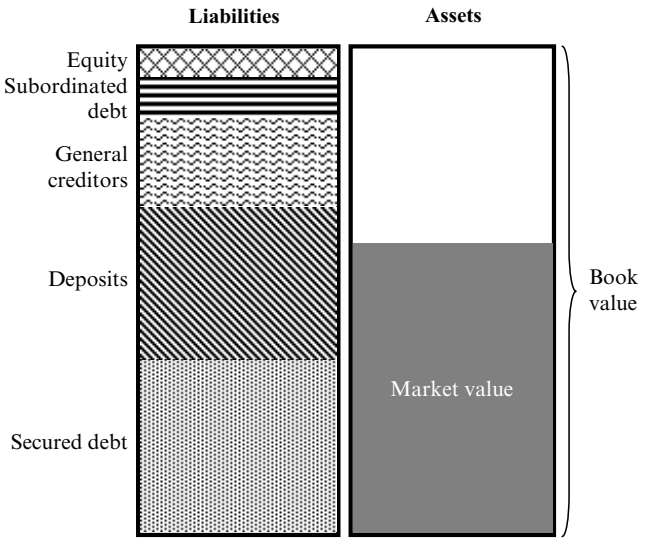

Figure 1. Hypothetical insolvent bank

Losses would normally not be imposed on secured claims except in situations where the collateral is insufficient.

Figure 1 depicts a hypothetical insolvent bank.[2] On the left, it shows the liability structure of the bank in the order of payment in the event of failure (equity, at the top, is paid last). On the right, it depicts the book value and market value of assets.

This hypothetical bank holds relatively few deposits and a substantive amount of general creditors and subordinated debt. Asset losses are very large. Therefore, at failure, 100 percent losses will be imposed on equity holders, subordinated debt holders, and general creditors; partial losses will be imposed on uninsured depositors.

Figure 2 presents the bank if the asset losses were less severe. In this case, uninsured depositors would be made whole. The holders of equity and subordinated debt would suffer 100 percent losses, and general creditors would suffer partial losses.

We have run some scenarios for the largest U.S. banks to get a sense of whether the FDIC would be required to impose losses on uninsured

[2]This example is for illustrative purposes only. The magnitudes involved do not represent a specific bank or the FDIC's expectations for a large bank failure.

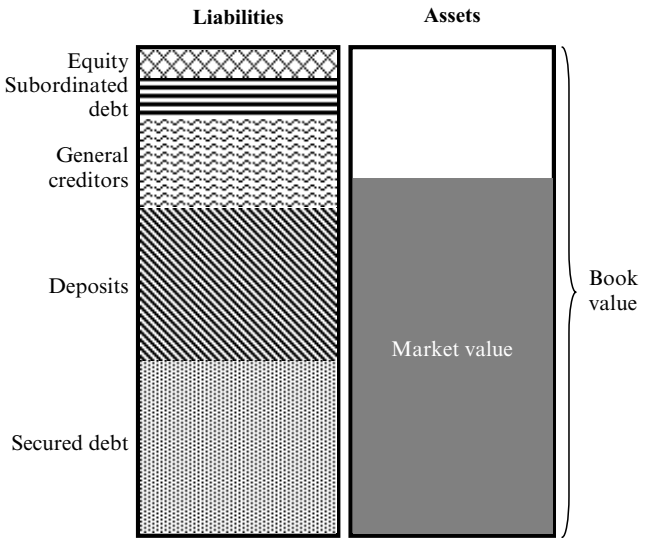

Figure 2. Hypothetical insolvent bank with less severe asset losses

depositors at failure. Assuming a loss rate of 5 percent to 10 percent, the answer is frequently unclear: it will depend on the specific circumstances at the time of failure. If the asset value and liability structure lead to uninsured depositor losses, the FDIC would face an operational challenge in separating insured and uninsured deposits. This is a challenge that we are actively addressing.

The least-cost test will also influence the FDIC's treatment of QFCs. Prior to FDICIA, the FDIC has protected these claims by placing them all in the bridge bank. One should not assume that the same treatment would occur under the least-cost test. Like the question of whether the FDIC will impose losses on uninsured depositors, the least-cost treatment of QFCs will depend on the particular circumstances. The FDIC will be looking at the value of the portfolio to the creditors. If there is no clear value to them, then they are likely to be left behind in the receivership, where losses will be imposed as appropriate.

This discussion provides some insights into the FDIC's expectations. We believe the FDIC has an effective set of legislative and regulatory tools. We have been working with other banking regulators and the industry to prepare for the operational challenges that would undoubtedly be present. We are also prudently planning so that we can effectively and efficiently

carry out a core piece of our mission — resolving the failure of a large bank while maintaining financial stability. Whatever the size or complexity of the situation, the FDIC stands ready to deliver on its promise we have kept since 1933.

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Arrangements for Financial Stability in OECD and EU countries

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1. Introduction

Most modern central banks (CBs) are responsible for maintaining financial stability. However, in case of a systemic crisis — identified by its threat to the stability of the financial system as a whole — more authorities will be involved in containing and solving the crisis, like the organization(s) responsible for banking supervision and deposit insurance and the Ministry of Finance. According to Ingves and Hoelscher (2004), crises in the financial system often emerge suddenly and can be chaotic and confusing events. In those circumstances a clear legal and operational division of labor is necessary to facilitate resolution of financial institutions. It is also critical that a fluid mechanism to coordinate and communicate actions is in place. Furthermore, an important part of crisis prevention is planning for crises. As Ingves and Hoelscher point out, authorities involved should be prepared, with clear options for addressing emerging crisis cases.

In this contribution we analyze arrangements in place between the various national organizations involved in maintaining financial stability in the Organization for Economic Cooperation and Development (OECD) area and examine to what extent they are prepared to act swift in case of a crisis. This part of our contribution is based on a recent survey among central banks in the OECD area (see Oosterloo and de Haan, 2003, for further details of the survey).[1]

[1]Since the role of the European Central Bank (ECB) in financial stability matters is limited, the survey was sent to the national central banks within the European System of Central Banks (ESCB) See de Haan *et al.* (2005) for details on the ESCB.

The second part of our contribution zooms in on the situation in the European Union (EU). Increasing integration within the EU gives rise to cross-border externalities. As a result, one may question whether home country control for prudential supervision and host country responsibility for financial stability are sustainable. We briefly discuss different policy options for the future structure of financial supervision in the EU (as suggested by Schoenmaker and Oosterloo, 2004) and their consequences for deposit insurance and emergency liquidity assistance.

The remainder of this contribution is organized as follows. Section 2 first examines which authorities may be involved in maintaining financial stability and the role of CBs in this regard. Section 3 analyzes arrangements concerning the exchange of information between the different authorities involved in safeguarding financial stability, while Section 4 addresses the decision-making process between these authorities in case of a crisis. Section 5 discusses financial stability arrangements in the European Union. Finally, Section 6 offers our conclusions.

2. Authorities Involved in Maintaining Financial Stability

All central banks that participated in our survey are responsible for financial stability.[2] Schinasi (2003) argues that central banks have a natural role in ensuring financial stability. First, the central bank is the only provider of the means of payment and of immediate liquidity. Second, it is the role of the central bank to ensure the smooth functioning of the national payment system. Problems at one bank may cascade through the payment system and perhaps lead to bottlenecks in payments and the possibility of a widespread domino effect. Third, the banking system is key in the transmission mechanism through which monetary policy affects the economy. To the extent that the banking system is experiencing distress, it will be more difficult for central bankers to do whatever they think necessary to achieve their monetary objectives. Central banks therefore have a natural interest in sound financial institutions and stable financial markets. Finally, there is an explicit link

[2]Still, our survey shows that most CBs do not have a clear legal basis describing the CB's powers and functions as regards its core task in the field of financial stability (for more details, see Oosterloo and de Haan, 2003). Although a great number of CBs have a reference to financial stability stated in their Banking Act or in some other document, in most cases this refers to the function of the CB in promoting or contributing to financial stability.

between monetary stability and financial stability. When financial instability occurs, trust and confidence breaks down. When this happens, there is usually a rush to obtain liquidity — the most liquid asset being fiat money. This means that bank credit and the money supply begin to contract. If this process is allowed to continue, there is the potential for a sharp contraction in monetary aggregates — including bank money — that could ultimately lead to a decline in economic activity.

Even though all central banks in our survey consider maintaining financial stability as a major goal, it is not easy to provide an unambiguous definition of financial stability.[3] To quote Duisenberg (2001, p. 38), "monetary stability is defined as stability in the general level of prices, or as an absence of inflation or deflation. Financial stability does not have as easy or universally accepted a definition. Nevertheless, there seems to be a broad consensus that financial stability refers to the smooth functioning of the key elements that make up the financial system". One CB that participated in our survey argued that, "one speaks of financial stability when a financial system is capable of efficiently allocating resources and absorbing shocks, preventing these from exercising a disruptive effect on the real economy or on other financial systems. Thus, in a situation of financial stability, money can properly carry out its function as a means of payment and hoarding and as a unit of account whilst, at the same time, the financial system can properly perform its role of mobilizing savings, diversifying risks and allocating resources".

According to Crockett (1997), the occasional failures of smaller institutions and occasional substantial losses at larger institutions are part of the normal functioning of the financial system, reminding market participants of their obligation to exercise discipline over the activities of the intermediaries with whom they do business. When financial institutions run into trouble, the problem is often solved without the use of public funds (Economic and Financial Committee, 2001).[4] However, when a large financial institution is at risk, taxpayer money is often needed to solve the

[3]Different definitions of financial stability have, for example, been provided by Crocket (1997) and Mishkin (1997). See also Kaufman (1995).

[4]According to Goodhart (2001), CBs never had the capital base, or the resources, necessary to undertake any large rescues on their own, forcing them to turn to their own ministries of finance for (taxpayers') funds in order to handle all but the smallest of failures and crises within the banking system (for empirical underpinning, see Goodhart and Schoenmaker, 1995).

problem.[5] Public sector assistance can take various forms, like joint recapitalization schemes, resolution through purchase and assumption transactions or other sales methods, and nationalization, with a view to future reprivatization (Ingves and Hoelscher, 2004). As the Ministry of Finance (MoF) is the guardian of the public purse, the finance minister will normally take decisions on the use of public money in crisis situations. Other authorities involved include the supervisory authorities and the organization responsible for deposit insurance.

Once the true nature of a crisis has been identified and bank insolvency has been revealed as widespread, measures like deposit insurance funds are needed to stabilize the system (Frydl and Quintyn, 2000). Although deposit insurance funds were originally aimed at preventing bank runs, in a number of countries these schemes can also be involved in the restructuring of ailing banks (Economic and Finance Committee, 2001). There exists various systems in the OECD area (see Garcia, 1999 for further details). Also, the way in which deposit insurance funds are organized differs considerably. For example, in the Netherlands, the deposit insurance system is formulated in the Act on the Supervision of the Credit System 1992, which leaves the CB to carry out this task. In Turkey, the Savings Deposits Insurance Fund (SDIF) is administered by the Banking Regulation and Supervisory Agency (BRSA). While in the United States, deposit insurance is executed by an independent agency of the federal government, the Federal Deposit Insurance Company (FDIC).

Table 1 summarizes the role of the CB and other authorities involved in promoting financial stability in most OECD countries.

3. Information Exchange

The assessment of the stability of the financial system as a whole involves the continuous monitoring and analysis of potential risks and vulnerabilities that may threaten the stability of the financial system. Although all CBs that participated in our survey indicate that they make a regular, systemic

[5]Hüpkes (2004) argues that also large and complex financial institutions (LCFI) could be left to fail provided that the authorities are able to identify and insulate the systematically relevant functions of LCFIs. However, it is widely believed that LCFIs are often considered to be too-big-to-fail. Given the linkages between the LCFI and the rest of the financial system and the implied spillover effects of failure of a LCFI, it seems impractical to put an LCFI into liquidation (Group of Ten, 2001).

Table 1. Authorities involved in maintaining financial stability

Country	Financial Stability Authority	Banking Supervisor	Deposit Insurance Implemented by
Australia	CB	Australian Prudential Regulation Authority (APRA)	–
Austria	CB	Financial Market Authority (FMA)	5 separate schemes administered by trade associations
Belgium	CB	Banking and Finance Commission (BFC)	National Bank of Belgium
Canada	CB	Office of the Superintendent of Financial Institutions (OSFI)	Canada Deposit Insurance Corporation
Czech Republic	CB	Czech National Bank	Deposit Insurance Fund Czech Republic
Denmark	CB	Danish Financial Supervisory Authority	Danish Guarantee Fund for depositors and investors
Finland	CB	Financial Supervisory Authority (FSA)	Deposit Guarantee Fund supervised by FSA which decides on payments
France	CB	Banque de France/ Commission Banqaire	Fonds de Garantie des Dépôts
Germany	CB	Bundesanstalt für Finanzdienstleis-tungsaufsicht (FinDAG)	Separate schemes for private sector banks, savings banks, Landesbanken and cooperative banks
Greece	CB	Bank of Greece	Hellenic Deposit Guarantee Fund (TEK)
Hungary	CB	Hungarian Financial Supervisory Authority (HFSA)	National Deposit Insurance Fund of Hungary

Table 1. (*Continued*)

Country	Financial Stability Authority	Banking Supervisor	Deposit Insurance Implemented by
Ireland	CB	Central Bank of Ireland	Irish Central Bank
Italy	CB	Banca d'Italia	Fondo Interbancario di Tutela dei Depositi
Japan	CB	Financial Services Agency (FSA)	Deposit Insurance Corporation of Japan
Luxembourg	CB	Commission de Surveillance du Secteur Finance (CSSF)	Association pour la Garantie des Dépôts du Luxembourg (AGDL)
Mexico	CB	National Banking and Securities Commission (CNBV)	Instituto para la Protección al Ahorro Bancario
Netherlands	CB	De Nederlandsche Bank (DNB)	DNB
Norway	CB	Kredittilsynet (The Banking, Insurance and Securities Commission of Norway)	Norwegian Savings Banks Guarantee Fund
New Zealand	CB	Reserve Bank of New Zealand	–
Poland	CB	Commission for Banking Supervision (CBS)	Bank Guarantee Fund
Portugal	CB	Banco de Portugal	Fondo de Guarantia de Depositos
Slovakia	CB	Slovak National Bank	Deposit Protection Fund
Spain	CB	Banco de España	Fondo de Garantía de Depositos en Cajas de Ahorro
Sweden	CB	Financial Supervisory Authority (FSA)	Deposit Guarantee Board

Table 1. (*Continued*)

Country	Financial Stability Authority	Banking Supervisor	Deposit Insurance Implemented by
Switzerland	CB	Federal Banking Commission (FBC)	Voluntary scheme administered by Swiss Bankers Association
Turkey	CB	Banking Regulation and Supervision Agency (BRSA)	Savings Deposit Insurance Fund administered by BRSA
United Kingdom	CB	Financial Services Authority (FSA)	Financial Services Compensation Scheme
United States	CB	Federal Reserve Board and Banks, the Federal Deposit Insurance Corporation (FDIC), the Office of the Comptroller of the Currency (OCC), as well as the commercial bank supervisors from individual states	FDIC

Source: Own survey, IADA, and International Monetary Fund.

assessment of (changes in) financial stability, there are important differences in what is ultimately done with this information. Apart from the fact that the assessment of the financial stability and its evolution are used in internal reports, a relevant question is whether (parts of) the results are also publicly available in, for example, a Financial Stability Review (FSR).

At the time this survey was conducted (2002), the CBs of Austria, Belgium, Canada, Denmark, France, Hungary, Norway, Spain, Sweden, and the United Kingdom published an annual or semiannual FSR. Our survey suggests that there are three main reasons for publishing the assessment of financial stability:

- *To contribute to the overall stability of the financial system*. By informing the public on both the state of the financial system and

the judgment of the CB regarding the systems stability, publishing an FSR can promote better-informed decision-making and can contribute to the stability of the financial system.

- *To strengthen cooperation on financial stability issues between the various relevant authorities*. As the Banque de France (2002, p. 6) argues: "in a globalized and increasingly complex financial environment, assessing and fostering financial stability require strengthened cooperation between the various relevant authorities, governments, central banks, market regulators, and supervisors. They also presuppose that a close dialogue be maintained with all financial sector professionals. It is in this spirit that the Banque de France, like several other central banks, has decided to publish a periodic Financial Stability Review.
- *To increase the transparency (and accountability) of the financial stability function.* According to Lastra (2001, p. 72), "the provision of information in the context of accountability, whether in an *ex ante* investigation or an *ex post* requirement of disclosure, facilitates transparency. On the other hand, a transparent economic and political environment enhances the effectiveness of accountability. The two concepts are therefore mutually enforcing, and they both share the provision of information as a common requirement".

Most CBs do not publish a standalone periodic FSR (according to one CB "the assessment is not published, since a lot of very confidential information is included"), but they include a general analysis of the financial system in their *Annual Report*. In other cases financial stability is a recurring topic in other periodicals, like the CB's *Bulletin*.

In our survey we also asked what information-sharing arrangements exist among the CB, the supervisor, and the MoF regarding financial stability issues. This is a relevant question, because, as already stated, safeguarding financial stability involves a number of institutions that share responsibilities. Therefore, all parties involved should keep each other informed on the relevant issues concerning financial stability.

Only a few countries have established some sort of formal platform to provide for the exchange of information between the institutions jointly responsible for financial stability (CB, supervisory authorities, and MoF): Austria (Financial Market Committee), Canada (Financial Institutions Supervisory Committee), Germany (Financial Market Supervision Forum), and the U.K. (Standing Committee).

In a number of countries (like Finland, Italy, the Netherlands, and Norway) no formal cooperation agreements between these authorities have been established: it has been decided to avoid a too prescriptive approach to cooperation, which may limit flexibility especially in time of crises.

In other cases, either the banking supervisory authority consists (among other members) of representatives of both the CB and the MoF (for example, France, Mexico, and Poland), or they have separate supervisory responsibilities (for example, the Czech Republic and the United States) and work together towards a common goal. As a result, information-sharing arrangements between the CB and the MoF exist.

Twenty-one CBs in our survey indicate that the information-sharing arrangements between the CB and the supervisory authority have been formalized, while thirteen have formalized the exchange of information with the MoF.

4. Decision-Making Process

As has been made clear, safeguarding financial stability can involve a number of different institutions that share responsibilities. Crisis management should involve joint cooperation, assessment, and agreement among CBs, supervisors, and ministries of finance. How are decisions actually taken in practice? In our survey we asked how CBs, supervisors, and MoFs take decisions about managing the available instruments, differentiating between preventive instruments (regulatory and supervisory measures), which make it less likely that costly financial disturbances will occur, and reactive instruments, which can be divided into remedial action and resolution. The results show that for preventive instruments, the decision about managing the instruments would be in the first place made by the authority with the responsibility on the basis of relevant legislation, which in most, if not all, cases would be either the CB or the supervisory authority.

As for crisis management, the decision-making process is less clear. In some countries the decision-making process between the different parties involved in safeguarding financial stability has been formalized. For example, in Austria, the Oesterreichische Nationalbank (OeNB), the Financial Market Authority, and the federal MoF are jointly responsible for the stability of financial markets. All three parties are represented in the Financial Market Committee, which in case of a financial crisis will decide on necessary measures on a case-by-case basis. Furthermore, in Poland there are two committees where representatives of the monetary authority,

banking supervision, deposit guarantee system, and MoF meet, exchange information on the financial system (mainly banks), and negotiate plans when needed: the Committee for Banking Supervision and the Board of the Bank Guarantee Fund. To the extent that membership of these bodies is regulated by law, so is the decision-making process. In Turkey, the principles of coordination and exchange of information are provided in the memorandum of understanding (MoU) signed by the CB, the BRSA, and the Treasury. Moreover, in the United Kingdom, decisions are taken by the lead authority, or, where necessary, collectively through the Standing Committee of representatives of the Treasury, the Bank of England and the Financial Services Authority. This committee normally meets on a monthly basis to discuss individual cases of significance and other developments relevant to financial stability. But meetings can be called at other times by one of the participating institutions if it considers there to be an issue that needs to be addressed urgently. Each institution has nominated representatives who can be contacted, and meet, at short notice (MoU, 1997).

Most CBs indicate that the ultimate decision is taken by the authority with the responsibility on the basis of relevant legislation. As one CB argues, "the CB is responsible for measures such as liquidity assistance, while the supervisory authority is the main issuer of financial regulations, and the MoF prepares financial legislation". A second CB takes the view that "in the light of its prime responsibility for the stability of the banking and payment system, the Bank makes the decisions about managing the related instruments, though it is likely that in specific circumstances the MoF will be consulted. The Bank is authorized to take decisions related to the lender of last resort function. It is likely that the MoF will be consulted in these decisions". In another case "the instruments are under the Bank's responsibility by law, but some extreme measures require MoF approval". A fourth CB points out "such decisions are taken within the (statutory) responsibilities and powers of the relevant agency, but within a broad framework of coordination and consultative arrangements (formal and informal)". Another CB argues, "as to crisis management, a joint crisis management organization would probably be established on the basis of joint preparations. Cooperation in managing the available instruments would then take place within a framework of joint organization. However, final decisions about managing a certain instrument would be made by the authority that is responsible for managing that instrument". Although a number of CBs indicate that each institution decides on the management of its own instruments, the mandates of several institutions have only partly been formulated in law.

Moreover, there are some CBs that indicate that the way financial authorities would take decisions, and the nature of those decisions, would depend on the very nature of the crisis. As one bank argued "with regard to instruments for addressing financial instability after crisis prevention has failed, it is on purpose that there is no rulebook for dealing with such situations, since all crises are unique in nature and should be treated accordingly".

Table 2 summarizes the results of the question in what way the central bank, the supervisor, and the MoF take decisions about managing the available instruments.

The questionnaire also dealt with the issue of which institution coordinates the decision-making process. Overall, the answers show mixed results. While several CBs consider it their responsibility to coordinate the decision-making process, others argue that the government is responsible. Or, depending on the nature of the crisis and the instruments to be used, the department with the relevant jurisdiction will coordinate the process. If the parties that are jointly responsible for maintaining financial stability are represented in some formal body, this could also be used for allowing coordination among competent national authorities. For example, to the extent that coordination is required in the United Kingdom, the Standing Committee framework is used (for example, in current work on contingency planning in the wake of September 11). Other CBs indicate that the coordinating role has not been specified.

On the question of who takes the final decision about actions that involve the use of public money, the CBs generally indicate that this is a responsibility of the government, often subject to the possibility for the CB to provide

Table 2. Decisions on the use of instruments to prevent and address financial instability

Decisions on Crisis Management Are	Number of CBs
A joint responsibility (CB, Supervisor(s) and MoF)	6
Taken by the relevant authority	16
There is no rulebook	4

Note: The central banks of Greece and Slovakia have not been included in this table, since the appropriate information was not available.

Table 3. Use of public money

Who Takes the Final Decision about Actions that Involves the Use of Public Money?	Number of CBs
Government (through the Ministry of Finance) or Parliament	12
Government, subject to the possibility for the Bank to provide emergency assistance against (sufficient) collateral	8
The CB decides on the use of its reserves, the Government on "other" public money	2
Other arrangements	3

Note: The central banks of the Czech Republic, Greece, and Slovakia have not been included in this table, since the appropriate information was not available.

emergency assistance against (sufficient) collateral.[6] However, during a crisis situation it is generally not possible to distinguish between illiquidity and insolvency (Goodhart, 1999). So, the lender of last resort interventions mostly involve high-risk loans, which may impose huge risks and costs for the taxpayer. As emphasized by Goodhart and Schoenmaker (1995) he who pays the piper calls the tunes. In large-scale, systemic domestic cases the government pays the piper, so the government ultimately decides how the crisis is handled and who bears the losses.

An example of a framework in which the decision-making process has been laid down explicitly is the British MoU between HM Treasury, the Bank of England, and the FSA. In our view, it could be regarded as some kind of role model for other countries.

5. Financial Stability Issues in the European Union

The present prudential supervisory system in the EU is based on the principle of home country control, combined with minimum standards and mutual recognition. Although home country control may enhance the effectiveness

[6]An exception is Japan, where the Bank of Japan (BOJ) Law (Article 12, Section 2) explicitly states that "… the following matters shall also be decided by the Board: (1) making loans prescribed by Article 37, Paragraph 1, and executing business prescribed by Article 38, Paragraph 2 …" This means that the policy board of the BOJ can take the final decision on the use of public money as the lender of last resort.

and efficiency of prudential supervision,[7] home authorities are not responsible for financial stability in host countries (Mayes and Vesala, 2000). The current guiding principles are that the instruments of crisis resolution are available at the national level and that the costs are born at the national level (EFC, 2001). It is however questionable whether home country control for prudential supervision and host country responsibility for financial stability can be maintained in an integrating market.

There are various alternatives for the current organizational structure (see Schoenmaker and Oosterloo, 2004). A first alternative is to give the home supervisor full responsibility for the EU-wide operations, both branches and subsidiaries. In this option the home supervisor keeps its national mandate and is the consolidated supervisor as well. The home supervisor will therefore be predominantly responsive to the needs of domestic depositors and concerned with domestic financial stability. However, this implies that it will not incorporate the cross-border externalities of a failure of a financial institution in its decision-making.

A second alternative is again to give the home supervisor full responsibility for the EU-wide operations, both branches and subsidiaries. However, in this alternative the home supervisor would have a European mandate to ensure that the interests of all depositors/countries are taken into account. In a European System of Financial Supervisors, national supervisors can work together with a decision-making body or agency at the center. Within the system, the supervisor in the country where the bank is headquartered can then act as consolidated or lead supervisor. For financial stability purposes, the home country authorities (supervisor and central bank) within the European System of Financial Supervisors and the European System of Central Banks (ESCB) can act within their respective Systems.

A third alternative is to give a central body full responsibility for the EU-wide operations, both branches and subsidiaries, of pan-European banks. Similar to the previous option, the central body has a European mandate to ensure that the interests of all depositors/countries are taken into account. Different from this option, the supervision is mainly conducted by the central body, which can work together with national supervisors. Breuer (2000) has advocated the approach of supervision of truly European banks by the

[7]However, in practice, financial institutions often operate through subsidiaries (separate legal entities) in other member states. As a result more than 20 supervisors may be involved in the supervision of large banking groups in the EU.

central body. The central body acts as the consolidated or lead supervisor. The logical equivalent would be that the ECB is the focal point for financial stability within the ESCB. In a crisis, the central bodies of the European System of Financial Supervisors and the European System of Central Banks take the lead within their respective systems.

The way in which prudential supervision is organized greatly affects the instruments for financial crisis management; we therefore examine the consequences of the alternatives presented above for deposit insurance and emergency liquidity assistance in the EU.

5.1. *Deposit insurance in the EU*

Like the current prudential supervisory system in the EU, the principle of home country applies to deposit insurance. A national guarantee scheme therefore covers the deposits held in the country of incorporation, as well as the deposits held in foreign branches (see Directive 94/19/EC on the deposit guarantee schemes).[8] The latter is because foreign branches have no separate legal status and thus are a part of the parent company in the home country. As subsidiaries do have a separate legal status they are required to join the host scheme.

In line with most EU financial legislation, Directive 94/19/EC on deposit guarantee schemes provides for minimum harmonization. As a result there are significant differences between national deposit guarantee schemes, for example with respect to the guaranteed amount (the directive prescribed a minimum of 20.000 euro), the funding of the scheme (*ex ante* or *ex post*), and the responsible authorities (see Table 1). There is however, a "topping up" clause in the directive that states that "where the level and/or scope, including the percentage, of cover offered by the host Member State guarantee scheme exceeds the level and/or scope of cover provided in the Member State in which a credit institution is authorized, the host Member State shall ensure that there is an officially recognized deposit-guarantee scheme within its territory which a branch may join voluntarily in order to supplement the guarantee which its depositors already enjoy by virtue of its membership of its home member state scheme" (Article 4, Paragraph 2 of Directive 94/19/EC on deposit-guarantee schemes). This topping up

[8]Directive 94/19/EC of the European Parliament and of the Council of 30 May 1994 on deposit guarantee schemes, *Official Journal L 135 , 31/05/1994 P. 0005–0014*.

clause enables branches to offer additional deposit guarantee up to the level offered by the host country.

What would be the consequence of a change of the supervisory system for deposit insurance in the EU? The situation that would occur when one chooses the first alternative (home supervisor is responsible on the basis of a national mandate) is that decisions made by the home authorities create externalities for the authorities of member states where subsidiaries are located (that is, part of the consequences of an incorrect decision by the home authority would be born by the host authorities). Shifting all responsibilities to the home authorities could resolve this problem, but it is questionable whether those who fund the scheme are willing/able to pay for coverage of deposits in other member states. The Nordic countries are currently experiencing such a situation, as Nordea is transforming its operations into a European company (Societas Europaea or SE).[9] By transforming Nordea's existing subsidiaries into branches, they are required to leave the national deposit guarantee scheme and join the scheme of the SE's home Member State Sweden.

The second (home supervisor is responsible on the basis of a European mandate) and third (central body is responsible on the basis of a European mandate) alternative imply a move of prudential supervision to the EU level, and would need to be followed by a similar move of existing crisis management arrangements. However, given the significant differences between the existing national schemes, the move to a European deposit guarantee scheme would need huge harmonization efforts. Next to that, cross-border penetration by banks is still fairly limited within most member states, which would suggest that for many banks the current system suffices. Nevertheless, the number of groups which have the potential to pose significant cross-border externalities in the EU context is clearly growing (see Schoenmaker and Oosterloo, 2005). A possible solution to this could be the establishment of some sort of two-tier system in which national schemes would coexist next to a European scheme which incorporates the pan-European banks.

[9]Once formally adopted, the European company statute will be a new legal instrument based on European Community law that gives companies the option of forming a European company — known formally by its Latin name of "Societas Europaea" (SE). An SE will be able to operate on a European-wide basis and be governed by Community law directly applicable in all member states (information obtained from: http://europa.eu.int/comm/internal_market/en/company/company/news/ecompanyfaq.htm).

However, this raises the question who would be responsible for operating such a system (at the national level it would clearly be the local authorities).

5.2. *Emergency liquidity assistance*

In the EU there is agreement that emergency liquidity assistance should not be seen as a primary means of safeguarding financial stability, nevertheless it is required that the Eurosystem has the necessary mechanisms in place (EFC, 2001). Therefore, two main guiding principles have been adopted (EFC, 2001):

(1) The provision of emergency liquidity assistance to individual illiquid institutions, if and when appropriate, is primarily a national responsibility and national arrangements continue to apply. The costs and risks would thus be fully borne at the national level.
(2) Mechanisms are in place to ensure that any potential liquidity impact deriving from the provision of emergency liquidity assistance can be managed in a way consistent with the maintenance of the appropriate single monetary policy stance.

According to Eisenbeis (2004) this system bifurcates the responsibilities for controlling banking risk between the micro-risk associated with the operation of single institutions from the macro-risk associated with contagion risk or risk that spreads from one institution to another regardless of where it is situated.

What would be the consequence of a change of the supervisory regime for emergency liquidity assistance in the EU? The main problem of the first alternative is that while the home authority is responsible for supervising the institution, part of the consequences of an incorrect decision by the home authority are born by the host authorities. Moreover, as the host authorities lose their supervisory tasks, they do not have direct access to supervisory information in crisis situations. Shifting the responsibility for emergency liquidity assistance to the home authority could also delay corrective actions as the home authorities may be unwilling to bear the potential costs of solvability problems in other member states.

According to Schoenmaker and Oosterloo (2004) the possibility of supplying emergency liquidity assistance at the EU level (in reaction to moving prudential supervision to the EU level; second and third alternative) raises the issue of who should bear the fiscal costs of a possible bailout. However, moving the supervisory function to the EU level, while leaving the fiscal

function at the national level, would inevitably cause problems. The authors argue that a fixed rule to share costs, like the ESCB and ECB use for the distribution of monetary income (based on an average of the share of total GDP and total population of participating member states), may give rise to moral hazard, as member states with a weak financial system may face reduced incentives to prevent potential bailouts. A fixed rule may thus not be politically feasible (or desirable), as countries with a strong financial system may not be prepared to pay up each time.

6. Conclusions

Although maintaining financial stability is one of the main functions of a CB, our survey has shown that there is a considerable heterogeneity in the way CBs execute this function. One of the main reasons for this heterogeneity seems to be the fact that the role of the CB has not been specified in law or in some other document (for example, an MoU). Furthermore, the formalization of the cooperation process, which explains how various authorities involved in maintaining financial stability work together varies considerably across countries. A key point for safeguarding financial stability effectively is the cooperation and exchange of information between the various institutions involved in financial stability functions on different stages and levels. Therefore all parties involved should keep each other (fully) informed on the relevant issues concerning financial stability. However, the results of the survey show that there are substantial differences in information sharing arrangements. Overall, the results indicate that arrangements between CBs and the supervisory authorities have been formalized to a larger extent than is the case for the interchange of information between the CB and the MoF. To obtain a certain degree of flexibility in achieving the objective of financial stability, the use of reactive instruments has not been laid down in law explicitly. Moreover, when an approach is too clearly formalized, it could also give rise to moral hazard. However, now it is sometimes unclear which authority is authorized to take decisions on the use of the financial stability instruments. This applies especially for instruments for crisis management. It seems that in large-scale, systemic cases the government will ultimately decide how the crisis is handled and who bears the losses.

Increasing integration within the EU gives rise to cross-border externalities. As a result the question is raised whether home country control for prudential supervision and host country responsibility for financial stability are sustainable. There are various alternatives for the current organizational

structure. However, when considering these alternatives one has to seriously consider the consequences for deposit insurance as well as emergency liquidity assistance.

References

Banque de France, 2002, "Financial stability review," report, Paris.

Breuer, R., 2000, "Convergence of supervisory practices — A banker's view," speech at the Conference of European Banking Supervisors, Copenhagen.

Crockett, A., 1997, "Why is financial stability a goal of public policy?," in *Maintaining Financial Stability in a Global Economy*, Federal Reserve Bank of Kansas City, pp. 7–36.

de Haan, J., S. C. W. Eijffinger, and S. Waller, 2005, *The European Central Bank: Credibility, Transparency, and Centralization,* , Cambridge, MA: MIT Press.

Duisenberg, W. F., 2001, "The contribution of the euro to financial stability," in *Globalization of Financial Markets and Financial Stability — Challenges for Europe*, Baden-Baden: Nomos Verlagsgesellschaft, pp. 37–51.

Economic and Financial Committee, 2001, "Report on financial crisis management," European Commission, Brussels, economic papers, No. 156.

Eisenbeis, R. A., forthcoming, "Agency problems in banking supervision: The case of the EMU," in *The Structure of Financial Regulation*, D. Mayes and G. Wood (eds.), London: Routledge.

European Financial Services Round Table, 2004, "Toward a lead supervisor for cross-border financial institutions in the European Union," Brussels, report.

Frydl, E., and M. Quintyn, 2000, "The benefits and costs of intervening in banking crises," International Monetary Fund, working paper, No. 00/147, August.

Garcia, Gillian G. H., 1999, "Deposit insurance: A survey of actual and good practices," International Monetary Fund, working paper, No.99/54, April.

Goodhart, C. A. E., 2004, "Some new directions for financial stability," Per Jacobsson Lecture, Basel: Bank for International Settlements.

———, 2001, "The organizational structure of banking supervision," London School of Economics, Financial Market Group, special paper, No. 127.

Goodhart, C. A. E., and D. Schoenmaker, 1995, "Should the functions of monetary policy and banking supervision be separated?," *Oxford Economic Papers*, Vol. 47, pp. 539–560.

Group of Ten, 2001, "Consolidation in the financial sector," Basel, report.

Hüpkes, E., 2004, " 'Too big to save' — Toward a functional approach to resolving crises in global financial institutions," paper presented at the conference

Systemic Financial Crises: Resolving Large Bank Insolvencies, Federal Reserve Bank of Chicago, September 30–October 1.

Ingves, S., and D. S. Hoelscher, 2004, "The resolution of systemic banking system crises," paper presented at the conference Systemic Financial Crises: Resolving Large Bank Insolvencies, Federal Reserve Bank of Chicago, September 30–October 1.

Kaufman, G. (ed.), 1995, "Banking, financial markets, and systemic risk," *Research in Financial Services, Private and Public Policy*, Vol. 7, London: JAI Press.

Lastra, R. M., 2001, "How much accountability for central banks and supervisors?," *Central Banking*, Vol. 12, No. 2, pp. 69–75.

Mayes, D., and J. Vesala, 2000, "On the problems of home country control," *Current Politics and Economics of Europe*, Vol. 10, pp. 1–26.

Mishkin, F. S., 1997, "The causes and propagation of financial instability: Lessons for policymakers," in *Maintaining Financial Stability in a Global Economy,* Federal Reserve Bank of Kansas City, pp. 55–96.

Oosterloo, S., and J. de Haan, 2003, **"**A survey of institutional frameworks for financial stability," De Nederlandsche Bank, occasional study, No. 4, available at www.dnb.nl/dnb/bin/doc/os_4_tcm7-17266.pdf.

Schinasi, G. J., 2003, "Responsibility of central banks for stability in financial markets," International Monetary Fund, working paper, No. 03/121, June.

Schoenmaker, D., and S. Oosterloo, forthcoming, "Cross-border issues in European financial supervision," in *The Structure of Financial Regulation*, D. Mayes and G. Wood (eds.), London: Routledge.

Schoenmaker, D., and S. Oosterloo, forthcoming, "Financial integration in an integrating Europe: Measuring cross-border externalities," *International Finance*, Vol. 8, No. 1.

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Constructive Commitments: Communicating Plans to Impose Losses on Large Bank Creditors

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The failure of a large bank could impose substantial costs on society. To fulfill their public responsibilities policymakers must plan for such low probability, high cost events. And in that process, they should seek to impose at least some losses on uninsured creditors of large banks. Such an objective and related planning should help reduce the fiscal transfers associated with the resolution of large bank failures. More importantly, it should reduce the resource misallocation that occurs when uninsured creditors expect bailouts and thus fail to effectively discipline bank risk-taking. But the latter benefit will only occur if creditors are put on notice.

Specifically, we believe that many creditors of large banks in the United States and abroad now expect government protection. Changing that expectation requires two types of reforms. First, policymakers must reduce their incentives to provide bailouts in the first place. We believe policymakers provide bailouts, for the most part, to limit the spillovers of large bank failures. Moreover, we do not believe that prior reforms in the U.S. sufficiently addressed this concern and, as a result, we doubt these reforms will significantly reduce the likelihood of creditor bailouts.

Second, policymakers must communicate their commitment to impose losses on creditors if their bank fails and their strategies for achieving that commitment. We reject a communication strategy focused on general claims that creditors are at risk of loss which are not accompanied by specific efforts to change creditor perceptions. So-called constructive ambiguity will be ineffective over the long-run in altering creditor behavior.

The rest of this essay is organized as follows. We first explain why prior reforms in the United States (U.S.) will prove insufficient in putting uninsured creditors at risk of loss and offer recommendations that will do a better job. We then review several options for communicating the new commitment to impose losses on large bank creditors to the affected parties. In the concluding section we address several potential challenges to our recommendations including the relevancy of our admittedly U.S.-centric communication strategy for other countries.

A final point. The recommendations and analysis in this essay are, for the most part, a greatly abbreviated form of our book length treatment of the so-called too-big-to-fail problem (TBTF). The detail and support for much of this essay are found in *Too Big to Fail: The Hazard of Bank Bailouts* (Stern and Feldman, 2004).

1. The Expected Failure of Prior Reforms

A claim that uninsured creditors of large banks are at insufficient risk of loss in the U.S. amounts to an indictment of the Federal Deposit Insurance Corporation Improvement Act of 1991(FDICIA). While FDICIA did a good job in putting uninsured creditors at risk of loss at smaller banks, we are skeptical that it did much to uninsured creditors at large banks, recognizing that its regulatory regime has not been fully tested. The main weakness of FDICIA relates to the topic of our essay, namely what aspects of large bank resolution planning should be communicated to creditors and how it should be communicated.

FDICIA tries to make uninsured creditor bailouts less likely by forcing bailout decisions to be made in the sunshine. In essence, the Secretary of the Treasury (and indirectly the President) and the boards of the Board of Governors (BOG) and the Federal Deposit Insurance Corporation (FDIC) must publicly support extraordinary coverage for uninsured creditors. Moreover, an auditing arm of Congress must review the exceptional coverage. This type of disclosure is more formal than prior arrangements. It is not, however, too distinct in substance from what occurred previously. According to principals involved, pre-FDICIA bailouts for large banks involved frequent communication between the Treasury, BOG, and FDIC. These bailouts led to congressional testimony and often led to reviews by government auditors. It is hard to imagine that policymakers did not consider public reaction when they made pre-FDICIA bailout decisions. In sum, we doubt the

formalization of an already well-established public disclosure regime will do much to alter the expectations of uninsured creditors at large banks.

The failure of FDICIA runs deeper than its focus on a small change in public disclosure. Indeed, the underlying approach of the legislation is not one we think capable of generating a credible commitment to impose losses on creditors. We do not think that policymakers covered losses of uninsured creditors of large banks in the past because their actions were secret or because the rules let them get away with it (although a bad set of rules never helps).

In our view, policymakers bail out nominally uninsured creditors because they perceive the costs of bailouts as smaller than spillover costs; bailouts seem like an effective tool to mitigate the potential costs when the failure of one large bank spills over to another bank and the real economy. To be credible, policy reforms trying to reduce the TBTF problem must address the motivation of policymakers' actions: the threat of spillovers. Put another way, creditors recognize that unless policymakers feel more comfortable imposing losses on them — either because the chance of spillovers has fallen or because policymakers can better assess the threat of a spillovers in the first place — bailouts will continue.

To be sure, like the drafters of FDICIA we see an important role for disclosing resolution policy to creditors. However, public communication in our plans supports the primary and first-order efforts to reduce the incentive to provide bailouts. Once policymakers start the effort to reduce their fear of spillovers, they must then let creditors know of their plans. If those steps seem credible and are communicated effectively, uninsured creditors will now have greater reason to monitor and price the risk-taking of large banks and impose more effective market discipline. The alternatives of prohibiting bailouts or trying to "jaw bone" uninsured creditors without a supporting plan to address the ultimate cause of bailouts seem futile.

2. Communicating with Large Bank Creditors

There are numerous means and opportunities for communicating resolution planning to uninsured creditors of large banks. We discuss four examples. They are disclosure of scenario planning, budgetary disclosures, confirmation hearings, and discussions associated with mergers reviews.

Scenario planning. Policymakers might be less likely to fear spillovers if they better understood which shocks could lead to spillovers and the

likely effectiveness of supervisory response to such shocks. By relying on the stress tests already run by large banks — and requiring banks to carry out additional tests of interest to policymakers — policymakers could better determine the likelihood of spillovers occurring. In the same vein, supervisors/central bankers could also gather data on the exposure of large banks to each other. Finally, supervisors could simulate the failure of a large bank and determine where improvements might be made in their and banks' preparedness and response plans.

Given the potential cost of responding suboptimally to a large bank failure, we question if the U.S. is devoting sufficient resources to the types of preparation we just described. In any case, it would be poor policy to keep all aspects of these planning exercises private. After all, if creditors do not learn of concrete efforts to put them at risk of loss, they have little incentives to alter their behavior. So what should policymakers disclose?

First, governments should announce that the planning/practicing just described has the explicit objective of increasing the likelihood that uninsured creditors bear a loss. Second, the types of analysis/planning that is being conducted (for example, stress tests) should be disclosed. Third, the types of banks under review (for example, large by asset size, those playing a critical role in payment systems, etc …) should be revealed although the analytical results should not. Finally, the reforms made in response to the analysis — such as new rules requiring that banks prepare and maintain certain data that will help with their unwinding — should be given high visibility. While an admission that improvements can be made could prove embarrassing, disclosing tangible, new reforms should help convince creditors that they are at greater risk of loss.

Publicity concerning the so-called NewBank proposal offers are concrete example of how recommendations along the lines we discuss might be implemented. This initiative seeks to create a back-up institution capable of clearing and settling U.S. government securities if one of the two banks that offer such services could not (Board of Governors, 2004). In the NewBank case, the government was clear about its intent, the type of analysis conducted, the institutions under review, and the reforms to be pursued. We make no claim that this effort sought to address creditors' expectations of bailouts and only opine on it based on public information. But the effort and the disclosure surrounding it could have a salutary effect on expectations nonetheless.

Budget. Fiscal costs associated with potential coverage of the uninsured at large banks are, by definition, contingencies. Analysts have devised methods for estimating the potential costs for contingent liabilities and some countries include these figures as current year expenditures in their budget. Alternatively, the budget could simply report the estimate of potential cost as an information only item.

In any case, budgetary estimates of contingent liabilities can communicate resolution strategy to large bank creditors. If policymakers shift the potential cost of bank failure from the government to creditors, the contingent liability should fall (all else equal). Governments should highlight budgetary estimates demonstrating their efforts to stick creditors with losses. In the U.S. context, budgetary data has proven potent in generating publicity about policy reforms.

Confirmation hearing. In the U.S., the Senate must approve many of the presidential appointees who will exercise power over bailout decisions. During those confirmations, Senators should question potential policymakers on their approach to large bank resolution. Answers to such questions could put uninsured creditors on notice.

Anti-trust reviews. One option for addressing the TBTF problem is to break up large banks. A less radical option is to prevent any additional mergers between large banks. Both alternatives use an antitrust process created to address monopoly power for other objectives for which it was not designed. As a result, these policies would impose costs that are unnecessary to address TBTF expectations.

However, there might be room in the merger review process for policymakers to publicize resolution planning. In the U.S., for example, the banking supervisor reviewing a merger between large banks could be required to explain how, as a general matter, large bank creditors are being put at risk of loss. During such mergers, the press and creditors might be particularly focused on policy toward large bank creditors. Mergers therefore present an ideal time to share policy direction, particularly new reforms.

Because TBTF concerns would not be a basis for rejecting a merger under this proposal, we believe it offers little downside in achieving its benefits. Moreover, the bank merger review process has already been altered to address issues not directly related to competitive or safety and soundness concerns. In particular, the current merger review process focuses considerable resources in examining compliance with the Community Reinvestment Act.

3. Addressing Some Challenges

We conclude this essay by addressing three important challenges to our recommendations. These challenges are the ability of our approach to address nonspillover rationales for providing bailouts, the difficulty that policymakers may face in shifting from a regime that provides bailouts to one that is less likely to, and the relevancy of our recommendations to other countries.

Nonspillover rationales. Our focus on disclosure of resolution planning differs from the rationale that leads others to concentrate on public information. Some scholars believe that public information offers a tool to pressure policymakers who would use deception to escape accountability and forebear. From this alternative perspective, policymakers provide bailouts to benefit themselves (for example, raising funds for reelection or greasing the skids for future employment). While we see another rationale leading to government support for creditors, our recommendations would provide the very information needed to monitor policymakers and help limit forbearance.

Shifting regimes. Public communication could play an important role in signaling a change in government's stance to bank creditors. In this regard, we see an analogy between changing TBTF expectations and the shifts toward low inflation that central banks achieved. Both cases involved a major change in policy direction, development of a metric by which observers could track compliance with the new commitment (for example, a focus on the monetary aggregates), and clarity in communicating the new commitment, its goals, and its measures of success. These same steps seem critical for achieving a credible commitment putting uninsured creditors at risk of loss. Moreover, the widespread success in bringing down inflation across the globe gives us confidence that major shifts in expectations are possible.

The non-U.S. context. Would our emphasis on communication be a useful strategy for countries with much higher levels of bank asset concentration or with more limited institutional, legal, and economic development relative to the U.S.? In both cases, communicating resolution strategy may be putting the cart before the horse. The core question for these countries is whether they can, or even want to, credibly commit to impose losses on the uninsured. Imposing losses on uninsured creditors of large banks in countries where banking systems provide significant amounts of credit and only one or two large banks control the vast majority of banking assets would be exceedingly difficult. In such countries, spillovers could pose a real threat to the real economy.

It is likely more difficult to impose losses on large bank creditors in developing countries, particularly if corruption is rampant, if severe political unrest might accompany a bank failure, or if property rights are honored by exception. In these cases, policymakers would better spend their resources attacking the factors that retard development rather than trying to address TBTF *per se*. With greater development should come a more realistic environment for addressing large bank failure.

References

Board of Governors of the Federal Reserve System, 2004, "Working group to develop concept of dormant bank to clear and settle U.S. government securities," press release, January 30.

Stern, Gary H., and Ron J. Feldman, 2004, *Too Big to Fail: The Hazards of Bank Bailouts*, Washington: Brookings Institution.

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Agenda

Thursday, September 30

12:30 pm – 1:30 pm	Registration
1:30 pm – 1:40 pm	Welcoming Remarks *Michael H. Moskow, President, Federal Reserve Bank of Chicago* Introductory Comments *George G. Kaufman, Loyola University Chicago and Federal Reserve Bank of Chicago*
1:40 pm – 3:40 pm	Session I: Financial Stability — Protecting Solvency Moderator *Douglas D. Evanoff, Federal Reserve Bank of Chicago* The Role of the IMF in Preventing and Managing Banking Crises *Stefan Ingves, International Monetary Fund* The Deposit Insurer's Role in Maintaining Financial Stability *J. P. Sabourin, International Association of Deposit Insurers and Canada Deposit Insurance Corporation*

The IMF and World Bank Financial Surveillance Program
Paul H. Kupiec, Federal Deposit Insurance Corporation

Financial Stability and Bank Insolvency
Peter Sinclair, University of Birmingham (UK), Andrew Haldane, Bank of England, Glenn Hoggarth, Bank of England, and Victoria Saporta, Bank of England

Discussant
Craig H. Furfine, Federal Reserve Bank of Chicago

3:40 pm – 4:00 pm Break

4:00 pm – 5:45 pm Session 2: The Cost of Inefficient Resolution of Large Financial Institutions
Moderator
Richard J. Rosen, Federal Reserve Bank of Chicago

Impediments to the Efficient Resolution of Banks and Banking Crises
Edward J. Kane, Boston College

Dealing with Financial Fragility in Transition Economies
Paul Wachtel, New York University and John Bonin, Wesleyan University

The Resolution of Financial Institutions in Emerging Economies
David S. Hoelscher, International Monetary Fund

Discussant
Randall S. Kroszner, University of Chicago

5:45 pm – 6:30 pm Reception

6:30 pm – 8:15 pm	Dinner and Keynote Address Moderator *Michael H. Moskow, President, Federal Reserve Bank of Chicago* Keynote Speaker *Andrew Crockett, President, JP Morgan Chase International*

Friday, October 1

7:30 am – 8:30 am	Continental Breakfast
8:30 am – 10:15 am	Session 3: Key Policy Challenges in Financial Resolution: Cross-Border Issues Moderator *Kenneth W. Dam, University of Chicago Law School* Cross-Border Challenges in Resolving Financial Firms *Thomas C. Baxter, Jr., Federal Reserve Bank of New York* Cross-Border Complexities in Resolving Financial Firms *Eva H. G. Hüpkes, Swiss Federal Banking Commission* A Universal Proposal to Address Cross-Border Resolution Issues *Christos Hadjiemmanuil, London School of Economics* Discussant *Chryssa Papathanassiou, European Central Bank*
10:15 am – 10:30 am	Break
10:30 am – 12:15 pm	Session 4: Key Policy Challenges in Financial Institution Resolution: Additional Complexities Moderator *Edward C. Ettin, Board of Governors of the Federal Reserve System*

Multiple Regulators and Resolutions
Charles Goodhart, London School of Economics

The Role of the Safety Net in Resolving Large Financial Institutions
David G. Mayes, Bank of Finland

Securities Forward and Commodity Contracts and Repurchase and Swap Agreements under U.S. Insolvency Laws
Seth Grosshandler, Cleary Gottlieb

Discussant
Robert R. Bliss, Wake Forest University and Federal Reserve Bank of Chicago

12:15 pm – 1:45 pm — Luncheon and Keynote Address
Moderator
Charles L. Evans, Federal Reserve Bank of Chicago

Keynote Speaker
Alan Bollard, Governor, Reserve Bank of New Zealand

2:00 pm – 3:30 pm — Session 5: Lessons from Case Studies of Large Insolvencies
Moderator
Harvey Rosenblum, Federal Reserve Bank of Dallas

BCCI and Barings
Richard J. Herring, University of Pennsylvania

Derivatives and Systemic Risk: What Role Can the Bankruptcy Code Play?
Franklin R. Edwards, Columbia University and Edward R. Morrison, Columbia University

Argentina and Uruguay: Two Contrasting Experiences
Liliana Rojas-Suarez, Center for Global Development

Discussant
Paola Sapienza, Northwestern University

3:30 pm – 3:50 pm	Break
3:50 pm – 5:45 pm	Session 6: Planning for Efficient Resolution — Where to from Here? Moderator *George G. Kaufman, Loyola University Chicago and Federal Reserve Bank of Chicago* *Ian Harrison, Reserve Bank of New Zealand* *Nobuo Inaba, Bank of Japan* *Arthur J. Murton, Federal Deposit Insurance Corporation* *Sander Oosterloo, Netherlands Ministry of Finance and Jakob deHaan, University of Groningen (NL)* *Gary H. Stern, Federal Reserve Bank of Minneapolis and Ron J. Feldman, Federal Reserve Bank of Minneapolis*
5:45 pm – 6:30 pm	Reception
6:30 pm – 8:15 pm	Dinner and Keynote Address Moderator *Gordon Werkema, Federal Reserve Bank of Chicago* Keynote Speaker *Timothy F. Geithner, President, Federal Reserve Bank of New York*

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Index