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Home Country versus Cross-Border
Negative Externalities in Large Banking
Organization Failures and How to Avoid Them

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Abstract: This paper examines the negative externalities that may occur when a large bank fails, describes the nature of those externalities, and explores whether they may be greater in a case involving a large cross-border banking organization. The analysis suggests that the chief negative externalities are associated with credit losses and losses due to liquidity problems, and these losses are critically affected by how promptly an insolvent institution is closed, how quickly depositors gain access to their funds, and how long it takes borrowers to reestablish credit relationships. While regulatory delay and forbearance may affect the size and distribution of losses, the likely incident of systemic risk and the negative externalities are more associated with the structure of the applicable bankruptcy laws and methods available to resolve a failed institution and quickly get it operating again. This circumstance implies that regulatory concerns about systemic risk should be directed first at closing institutions promptly, reforming bankruptcy statutes to admit special procedures for handling bank failures, and providing mechanisms to give creditors and borrowers prompt and immediate access to their funds and lines of credit.

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Introduction

A recent trend around the world beginning in the early 2000's has been the production of financial stability reports designed to communicate and evaluate the health of individual country financial systems. Virtually every major central bank, except the Federal Reserve and Bank of Italy, are now publishing stability reports on a regular basis. These reports evaluate developments in financial markets and across various types of financial institutions that may affect the health of financial systems¹. However, these reports have had little to say about the risks that are beginning to evolve related to changes in the banking structures themselves, such as the expansion of banking organization across country borders.

To date, the risks associated with multinational banking have been the focus of banking supervisors whose primary concern is that the failure of a large multinational banking organization might result in systemic risks that threaten the solvency of other banking organizations or the health of financial markets. This paper attempts to do two things. First, it drills down to consider exactly what these systemic risks are. Second, it attempts to examine whether there is anything special about cross-border banking and how problems in a large banking organization may be resolved should it experience financial difficulties that might either exacerbate or moderate systemic risk concerns.

¹ See, for example, International Monetary Fund (2006), Norges Bank (2006), Reserve Bank of New Zealand(2006), Banco de Espana(2006), Bank of England(2006) for examples. For a review of these reports see Oosterloo, Haan and Jong-A-Pin (2006).

Sources and Nature of Systemic Risks

While central banks and regulators are concerned with limiting systemic, the exact nature of those risks are and how they can adversely affect financial markets or the real economy are not always spelled out in sufficient detail to be amenable to analysis. Without a specific enumeration of the problems, it is difficult to evaluate alternative policies and regulatory efforts to control them.

In the theoretical literature systemic risk concerns have typically focused on Great Depression-style bank runs.² Diamond-Dybvig's model describes when participating in a run and suspension of convertibility of deposits represent optimal depositor and bank behavior. But it does not explain what triggers that run, which simply emerges exogenously. Furthermore, since there is only one bank in the Diamond-Dybvig world, a run on a bank is in fact a run on the banking system. How a run on one bank in a multiple-bank banking system gets propagated into a run on many banks is not examined.

The supervisory concern about a flight to currency from deposits resulting from uncertainty about the health of one bank is that it could spill over to healthy banks. In this sense, a currency run on a single bank could quickly become contagious. The result would be a cumulative collapse in the deposit money supply as deposits are exchanged for currency and withdrawn from the banking system. The sudden and unanticipated withdrawal of funds could bring down even a solvent bank if it didn't have sufficient funds on hand to meet the demand, thereby creating a liquidity problem.

² See Diamond and Dybvig (1983), Kaufman(1988), Chari and Jagannathan(1988), Chari(1989), Jacklin(1987), Jacklin and Bhattacharya(1988), and Wallace(1988, 1990)

Theoretical work extending this liquidity component as a propagator of a banking crisis relies upon a shock to aggregate output that lowers expected returns on assets. This creates a system wide liquidity crisis and collapse of asset values.³ Because early liquidation of banking assets is costly, intervention by the central bank through its lender of last resort function and/or through open market operations has been justified.⁴ Importantly, intervention in such a case is not designed to stem the runs but rather to prevent the decline in asset values (Allen and Gale(1998)).

Despite the large volume of theoretical work, the basic causes of runs and liquidity crises in banking and sources of the shocks to information about bank soundness or to asset values remain largely unexplained. Researchers who have attempted to do so have argued a) that banks were unstable (See Minsky(1975) or Chari(1989), b) that depositors are irrational, or c) that information about bank asset values is asymmetric and not uniformly available to all market participants, making it both difficult to distinguish among good and bad firms and rational for depositors to withdraw their funds.⁵ However, none of these explanations are particularly satisfying. Lastly, another body of work has evolved from the Real Business Cycle literature suggests that such shocks are simply a natural byproduct of the business cycle and thus, what remains is to limit the damage.

More recently, those that have taken a market (or macro) view of crises look to liquidity problems in particular financial or product markets rather than to problems in

³ See Gorton(1988)

⁴ See Allen and Gale(1998) whose model generates a run without a first come first served assumption. See also Schoemaker and Oosterloo(2005) who specifically examine the potential contagion concerns within the EU. Boot(2006) provides a discussion of some of this literature.

⁵ See Rochet(2004).

individual institutions.⁶ Theoretical work in this area has focused on episodes like the US stock market decline in 1987 or the Asian, Mexican and Latin American crises which were crises in international foreign exchange and currency markets.^{7 8 9}

While we have still not gained a good understanding of the causes of either financial crises or contagion for banks or in financial markets more generally, two conclusions do flow from this work. First, studies of individual crises suggest that problems in the real side tend to lead rather than result from financial crises. Second, once a financial crisis does occur, it can sometimes amplify or feed back to the real side, making problems there worse. However, neither the theoretical work nor empirical work helps to understand why some market may implode while others may not.

Despite these shortcomings, however, history is filled with various examples of financial crises and governments and central banks have typically stepped in to limit supposed negative externalities they may involve. It is important, at least in the case of banking, to understand exactly what these negative externalities are before one can evaluate proposals to deal with them or assess whether certain regulatory arrangements may dampen or perhaps exacerbate these externalities when a crisis emerges.

Negative externalities and banking failures¹⁰

⁶ Allen and Gale(2000) have provided a modeling framework that attempts to explain how a shock to one sector of an economy or financial market may become contagious and spread to other sectors.

⁷ Schwartz(1998) argues that it is questionable whether there is evidence of country contagion similar to that feared in the bank contagion literature. Indeed, she argues that imprudent fiscal policies and inattention to reform of insolvent banking systems were the cause of financial problems. Meltzer(1998) argues that Asian crises in 1997 reflected moral hazard behavior that had its roots in IMF and governmental bailout responses to the 1995 crisis in Mexico.

⁸ See Chang and Velasco(2000),(2001), Champ, Smith and Williamson(1996) for examples.

⁹ Contrary to what some have asserted, the Federal Reserve did not provide central bank funds but simply provided a meeting place for counterparties and creditors of LTCM to meet and work out an acceptable restructuring.

¹⁰ This section draws heavily on and may repeat material from Eisenbeis and Kaufman(2005, 2006) and Wall and Eisenbeis(1999).

Understanding the negative externalities associated with banking crises requires identification of the affected parties and how they are impacted.¹¹ When a bank cannot pay out all its debts, including deposits in full and on time, it goes into default, losses will be incurred, and the resolution process to allocate those losses and dispose of the failed bank must begin. Insured depositors will be paid, and uninsured depositors and other creditors will share in the losses according to their legal priority with equity holders may receiving any residual values if any remain.

During the resolution process, claimants may experience both credit and liquidity losses. The size and duration of those losses depend critically on the nature of the resolution processes and legal arrangements in place. Credit losses to debt holders and depositors may occur when the recovery value of the bank, as a whole, or in parts falls short of the par value of its debts on their respective due dates. In the case of uninsured depositors, for example, losses are a function of not only the size of the claim, but also whether depositors are allowed to offset any deposit claims against any loans they may owe to the bank before sharing in any pro-rata claims. In the case of collateralized deposits, the ability to avoid losses depends upon the legal status of the collateral claims and where the collateral is held. Of course, collateralization of deposits, like discount window borrowing, creates a preferred liability in that payment is tied to the value of high quality assets - usually the highest quality assets that the bank has, such as Treasury obligations. This also means that the pledged assets would not be available to meet the claims of other depositors who then have to rely on recovering from the liquidation of lower quality assets, thereby increasing the probability that they will incur losses.

¹¹ In the US, for example, the banking supervisor determines that a bank is insolvent and should be closed, but the triggering event is when the Federal Reserve presents a cash letter to the bank that can't be paid. In other countries, the triggering event is typically when a payment to a private customer can't be made.

Liquidity losses may occur for four reasons. First, depositors may not have immediate (next business day or so) and full access to the par value of their insured claims or to the estimated recovery value of their *de jure* uninsured claims. Delays in access to funds could force depositors to liquidate other assets or cause them to default on loans to other creditors, including suppliers if they don't have other assets to sell. Second, qualified borrowers may not be able to utilize their existing credit lines immediately. Those with no established substitutes could experience business disruption, loss of access to working capital, or be forced to default on obligations. Third, there may be both liquidity problems and ultimately credit losses associated with payment and settlement system failures when a problem in one institution is transmitted via the payments system to others who are awaiting payments but that can't be settled because of the failure of the bank counter party.¹² Fourth, with the growth of derivative and swap markets, the failure of a major player in those markets would disrupt hedges and force counterparties to re-establish their positions. Some may not be able to do so, and the priority of contingent claims in bankruptcy is not always clear. Thus the failure of a bank that was also a major counterparty in derivatives markets might have negative spillovers to other market participants, increasing their risk exposures and the cost of both credit to borrowers and liability issuance to financial institutions.¹³

The potential for disruption to derivatives markets was the concern in the case of LTCM. Now, it is debatable whether and what type of government or central bank intervention would be appropriate in such cases and whether that intervention would be justified if the troubled institution was a bank as opposed to some other type of financial

¹² See Schoenmaker and Oosterloo(2005).

¹³ Mengle (2006) argues that actions have been taken in an attempt to provide private sector solutions to this problem.

firm. In the LTCM case, the Federal Reserve only brought LTCM together with its creditors who resolved LTCM without use of government or central bank funds. It was also the case that prompt resolution by its major creditors did avoid serious disruptions to the markets in which LTCM was a major player. Furfine(2006) has demonstrated through exploration of Fedwire data that there is no evidence that counterparties to LTCM experience liquidity problems during the episode. Whether central bank funds would have been involved or whether, had the same factual circumstances existed for a large bank, it would have been permitted to borrow at the discount window is an interesting question to be explored.¹⁴

The extent of these liquidity and credit costs to depositors and borrowers, and the secondary spillovers to their creditors and customers determine the negative externalities and social costs of the failure. Clearly, the larger the institution, the greater and more complex are the linkages to other institutions and markets. These linkages increase the chance that negative externalities associated with their failure might have undesirability spillover effects to other markets and institutions.

Experience suggests that that both the legal and regulatory structure may generate both conflicts of interest and agency costs resulting in forbearance or delay in resolving troubled institutions causing credit and liquidity problems. Moreover, these negative externalities may be exacerbated when cross-border banking organizations experience financial difficulties.

¹⁴ Both markets and regulators do learn from dealing with large troubled institutions, and may be less prone to intervene after the first major case has occurred. Recently, for example, the reported loss by the large hedge fund Amaranth Advisors of over \$6 billion, or nearly 65% of its assets, from taking positions in energy derivatives caused scarcely a ripple in financial markets, nor was there a call for intervention. See Sender(2006)

Conflicts of interest, agency costs and bankruptcy laws: their role in affecting the negative externalities of banking failures

The responsible agencies often are subject to agency costs or conflicts of interest that can incent them to engage in forbearance by delaying the closure of insolvent institutions or to delay resolving institutions once they have been legally closed and this can increase credit losses.¹⁵ Liquidity problems can be increased if there are legal or other impediments to prompt resolution, closure, recapitalization and return to operations of large banking organizations that have failed.

Credit losses are most likely to arise when conflicts adversely affect the incentives of regulators to act promptly to deal with problems as they arise. Self interest and incentive problems of the classical principle/agent type exist between and among banking supervisors and taxpayers usually result in delay. The reason is that regulators have incentives to pursue policies that preserve their agencies and protect their turf and self interest. These incentives lead to a “not-on-my-watch” mentality and lead to regulatory gambling that the agency can “work out the problem or aid in restoring troubled institutions to solvency.” It is perceived to be better not to have major institutions fail if you are the regulator and responsible at the time the failure occurs. Agency preservation provides incentives to ensure that problems are “worked out” rather than result in the closer of a major institution. Institution failure, given that the supervisor is charged with surveillance and intervention when problems arise, can quickly be interpreted by outside parties as an agency failure or, in the case of the person in charge, a leadership failure.

¹⁵ Horvitz(1983) discussed the problems that overlapping regulatory structure may involve specifically in the context of financial regulation of U.S. banking. He suggested that policies may be interpreted, applied and implemented differently and jurisdictional conflicts might arise between the regulatory agencies over the form, substance, and implementation of regulations. The range of policy areas with possible goals that may be subject to possible conflicts for bank regulators includes: consumer protection (for both retail and wholesale customers), monetary policy, community development, investor protection, market transparency, safety and soundness, ensuring the safety net, reducing systemic risk, and antitrust. See also Kane(2000).

Either or both reinforce incentives of regulators to pursue their own private self-interest and to maintain their agency's reputation in order to protect their own jobs and future marketability and employment in the banking industry.¹⁶ These conflicts may lead to more accommodating policies in the form of lower than appropriate capital requirements and to regulatory forbearance when institutions get in trouble, thereby shifting risk and any associated costs to taxpayers and/or the deposit insurance fund as regulators attempt to ingratiate themselves with constituent banks.

An example of such delay, despite the Federal Deposit Insurance corporation Improvement Act's (FDICIA) early intervention and prompt corrective action mandate, was seen recently in the problems surrounding the handling of the failure of Superior Bank whose failure cost its insurance fund an estimated \$763 million or about 40% of the institution's assets.¹⁷ A recent GAO report found several problems with the supervision and handling of this institution by Office of Thrift Supervision (OTS) including: failure to recognize warning signs that the institution was engaged in risky behavior many years before its failure; lack of cooperation and coordination with the FDIC who sought to exercise its right to examine the institution when its analysis suggested that the institution was engaging in excessively risky strategies, problems with the accounting which interfered with proper functioning of prompt corrective action (PCA), questionable findings by the institution's external auditors concerning accounting practices, undue reliance by OTS on the belief that the owners who were both prominent and wealthy individuals would not let the institution fail, and delays on the part of the FDIC to

¹⁶ See Kane (1991,1989, 2006), Schüler (2003), and Lewis (1997)

¹⁷ See Office of Inspector General (2002).

promptly resolve the failure in the hopes that principals would provide additional capital.¹⁸

While there were numerous breakdowns in the supervisory process, two key features of US law and banking regulation prevented the failure from having negative externalities on customers, depositors or financial markets. The first was the existence of special bankruptcy laws that enabled the institution to be closed by the regulators. The second was resolution policies that permitted the FDIC to transfer assets and liabilities immediately to a newly chartered Federal Savings Bank and to serve as conservator until it was subsequently re-privatized through sale to another banking organization.¹⁹ This enabled insured depositors to have continuous and immediate access to their funds and causing little disruption to borrowers.²⁰ It is these two features – a special bankruptcy law and authority of the regulator to close a trouble institution – if exercised so as to provide depositors and borrows immediate access to their funds and borrowers access to credit that are key to minimizing negative externalities associated with banking failures. Borrowers and creditors know with certainty that they will have immediate access to their resources and thus the incentive to engage in a run, for example, is minimized and failures become isolated events. Agency problems and goal conflicts, to the extent that they provide incentives for regulators to engage in forbearance, increases the losses that

¹⁸ GAO(2002) and Johnson(2005).

¹⁹ In a bank failure, the FDIC was given authority in 1987 under the Competitive Equity and Banking Act to create a bridge (or temporary) bank to facilitate the resolution of the failed entity while enabling depositors to have access to their funds. Functionally, this process is similar to that used in the Superior, FSB case where the FDIC lacked authority to create a bridge federal savings bank. For a detailed discussion and comparison of bankruptcy processes for banks as compared to non-banks see Bliss and Kaufman(2006)

²⁰ To be sure there were law suits filed against the auditors, but the case was dismissed and uninsured depositors lost funds.

the taxpayer and deposit insurance funds may have to bear, but do not in all circumstances increase the negative externalities to bank customers of a failure.

Cross-border banking arrangements raise additional issues and considerations which suggest that the risks of negative externalities may be greater should a large, cross-border institution fail.²¹ Likely externalities depend on not only the relative importance of the activities in the home country relative to the host country, but also on whether cross-border banking takes place through branches or through separately chartered subsidiaries. For example, if a large banking organization has a very large share of the banking business in the host country, but not in the home country, and it fails, there could be substantial disruptions to both banking and commerce in the host country if customers don't have ready access to their funds, but there might be little impact on customers of markets in the home country.²²

Deciding when to close the institution, for example, may not only affect the availability of funds, but also may determine the incident of loss. For example, in the failure of Herstatt Bank, the home country German authorities decided to close the bank during the middle of the banking day, such that certain foreign exchange transactions hadn't totally settled.²³ While the closure policy did not affect the fact that losses had occurred, it did affect which parties bore the loss. This case illustrates the dilemma the regulators may face in weighing the consequences for the customers and economies of

²¹ See Schüler and Heinemann(2005).

²² The relative shares of banking organizations in Europe, for example, suggest just this kind of concern. In Estonia, foreign banking organizations control 98% of the banking assets and in at least 8 of the 25 EU countries, out of country banks control 50% or more of the banking assets. See Eisenbeis and Kaufman(2006)and Schoenmaker and Laecke (2006). Lindgren(2006) suggests that the failure of Meridien Bank BIAO in Africa in 1995 was an example of negative cross-border externalities associated with the failure of that institution.

²³ In particular, for certain mark-dollar settlements, the mark side of the transaction had settled, but the dollar payments were not due to settle until later in the day after the institution had closed. This meant that dollar claimants were put into a potential loss position.

different countries of alternative regulatory and supervisory policies and especially decisions when to close troubled institutions and when to invoke lender-of-last resort or emergency lending to provide additional liquidity to markets and institutions.²⁴

Divided loyalties and conflicts may lead banking supervisors and regulators of troubled banking organizations to prefer resolutions that favor their own citizens and to operate in what they consider is the best interest of their country, however defined or perceived (see Herring (2006) and Bollard (2005)).²⁵ Logically, the incentives of the regulators, deposit insurance provider and/or failure resolution entity are typically aligned with the residents of the regulators' home rather than with the interests of all customers in the whole market or geographic area within which the institution operates. Thus, it seems inevitable that negative externalities that may result from a large cross-border banking failure will be shifted to host countries rather than imposed upon home countries.

As foreign banking organizations' market share of host country assets increases through merger or acquisition host country regulators face two problems, both of which deal with problems of access to information. When expansion takes place through branching and acquisitions, host country regulators face not only a loss of constituents to supervise and regulate, but also, if the host country is responsible for lender of last resort functions, then lending to the branch of a troubled bank that they don't supervise faces

²⁴ Provisions of FDICIA changed the rules in an attempt to eliminate Herstatt problems for U.S. banks. It essentially gave priority in bankruptcy to netting arrangements among banks over all other claimants.

²⁵ This problem has arisen in France with the country's attempt to preserve Credit Lyonnais with injections of governmental funds in more than three separate instances in the past several years. More recently, an editorial in the Wall Street Journal Europe (2005) entitled "Spaghetti Banking" pointed out that the governor of the Bank of Italy had refused to approve the acquisition of a single Italian bank by a foreign institution for the last 12 years. The governor indicated his desire to "... preserve the banks' Italianness also in the future" This protectionism was challenged by the European Union's Internal Market Commission in connection with the proposed acquisitions of two Italian banks by ABN Amro and Banco Bilbao Vizcaya Argentina, and the governor of the central bank was ultimately forced out amid criminal investigations associated with the blockage of the proposed transactions.

the central bank (or lender of last resort) with the prospect of having to rely upon the home country for information on the solvency of the bank. In the EU, agreements have been struck that vest primary supervisory and regulatory responsibility for a banking organization with the country in which an institution is chartered. Branches come under the responsibility of the home country as does umbrella supervisory authority for banking organizations with multiple independently chartered subsidiaries.

In contrast, when expansion takes place through separately chartered subsidiaries, the information problem is a bit different. Supervision and regulation responsibility for the subsidiaries lie with the countries in which they are chartered, but the information gleaned about the subsidiary may not adequately reflect its true risk position if the parent, for example, is experiencing financial difficulties or the subsidiary is operationally dependant for management or operational support from the parent or its other subsidiaries. Again, the true financial risks can only be determined with adequate sharing of information between the home and host countries of the parent and the subsidiaries (Committee on the Global Financial System, 2004).²⁶ Without adequate and timely information, the host country may be in a poor position to assess the potential risks or externalities its citizens and economy may be exposed to from its foreign branches. These incentive conflicts may be especially acute in host countries with a large foreign banking presence.

The logistics and costs to host country regulators of quickly accessing information on these arrangements, or even finding it, can be daunting, even when the foreign

²⁶ Differences in quality can exist simply because countries fund their banking regulators differently or because they have had only limited experience in supervising market entities. Schüler (2003) argues that this problem of information access issue constitutes a form of agency problem between the home and host country regulator.

banking organization enters by way of a bank subsidiary rather than a branch. Should a foreign-owned institution become insolvent and be legally closed, it may not be possible to keep those portions of the institution's operations in the host country physically open and operating seamlessly during the resolution process in an attempt to limit any adverse consequences that may accrue to deposit and loan customers. The necessary senior management, operating records, and computer facilities may be physically located in the home rather than in the host countries or in separately owned and operated affiliates and subsidiaries in third countries. For these reasons, regulatory oversight and discipline is likely to be more difficult and less effective in host countries with a substantial foreign bank presence than in countries without this presence. The resolution process is also less effective.

Perception of these problems is likely to heighten incentives on the part of host country regulators to seek to protect their own citizens through ring-fencing of assets, even at the expense of host country citizens.²⁷ However, attempts to engage in ring fencing may be of little value. With so many assets now being in electronic form or booked in other locations, it may be impossible to actually get hold of the assets. At best, the main benefit of ring fencing may be to establish legal claim to certain assets that would have to be settled in international courts, a process that could prove difficult and time consuming and adding to the negative externalities that may result.

²⁷ New Zealand has addressed this issue by requiring that subsidiaries be structured in such a way that if the parent becomes insolvent, solvent subsidiaries can be operated effectively without interruption in terms of capabilities and management. This doesn't seem to be a practical solution for large multi-national banking organizations on a broad scale since this may deny these institutions the economies of scale and scope and risk management.

Adding to potential depositor confusion and information asymmetries is the fact that two banking organizations headquartered in different host countries may be subject to different bankruptcy procedures; to different policies concerning the timely availability of funds in the event of a bankruptcy; and even different policies as to whether deposits in foreign branches are or are not insured. The U.S., for example, doesn't insure the foreign deposits in offshore branches of US banks, but may insure the deposits in the branches of foreign institutions operating in the US.

With respect to the international dimension to the agency problem, home country regulators may take insufficient account of how the externalities that a failure, and the way that it is resolved, may affect the host country. That is, because all the regulators in countries in which a banking organization operates may have different objective functions and incentives, they may not all be pulling in the same direction at the same time with respect to prudential supervision and regulation. And these conflicts may be important, even when there exist coordinating bodies or agreements and understandings as to principles.²⁸ Even when there is a statutory mandate for regulators with overlapping responsibilities to cooperate, agency problems sometimes prevent this from happening. When cooperation breaks down, as it is most likely to do when a crisis arises and real money is at stake, agency self interest often trumps even the law. This is more likely to happen when agreements lack even the force of law, and there is no way to enforce agreements that may have been made ex ante. Regulators may take conflicting

²⁸ Schüller(2003) indicates that in Europe, for example, that there were over 90 memoranda of understanding (MoU's) in Europe as of 1999 governing the exchange of information and commitments for handling troubled institutions. With the addition of the accession countries 300 bilateral arrangements need to be put in place for handling troubled institutions, and this may not cover the needed information sharing when a bank operates in more than two EU countries. The two main problems with these MoUs are that they are secret, so the depositors have no information as to how they might be treated, and that these MoUs rely upon "soft law" for enforcement and can be disavowed at any time. See also Boot (2006).

actions to benefit their own country's residents or institutions, say, with respect to the nature and timing of any sanctions imposed on a bank for poor performance, the timing of any official declaration of insolvency and the associated legal closing of the bank, the resolution of the insolvency, or the timing and amount of payment to insured and uninsured depositors.^{29 30}

From the home country perspective, the incentives are not only to pay less attention to the externalities that failure may impose on host countries, but also to protect home country residents from possible costs of failure. These incentives may be especially significant with respect to the provision of deposit insurance, which is one of the main tools designed to assure and protect depositors in the event that a bank gets into financial difficulty. However, the structure of the deposit insurance system, deposit insurance coverage, and how the guarantee system is funded can significantly affect incentives and may introduce potential conflicts between regulators, who may or may not have the authority to close banks, the legal system governing the declaration of bankruptcy and the resolution of failed institutions, and distribution, size and sharing of loss burden.

Consider first the issue of the declaration of bankruptcy and how that affects losses. The longer an insolvent institution is kept open, the greater the losses are that both uninsured creditors and the deposit insurance scheme must absorb. If a regulator has the closure responsibility, and engages in forbearance, then the regulator is one of the main sources of loss (risk) to uninsured creditors and the deposit insurance fund. On the

²⁹ A classic case of just such a decision occurred in the Herstatt Bank failure.

³⁰ In the US, such conflicts have existed among state regulators and among federal banking regulators despite a national mandate to coordinate regulatory and supervisory policies and the existence of the Federal Financial Institutions Examination Council.

other hand, if an economically insolvent institution legally must keep operating until it can no longer meet a payment obligation, then the bankruptcy law and not the regulator affects the amount of the losses that exist. Ironically, in the US, while the closure decision is the responsibility of the regulator (the chartering agent), the losses are born by depository institutions who must ex post recapitalize their fund. But the institutions at risk have no oversight responsibilities for evaluating regulatory performance. That is, the regulator is not accountable to the institutions that must bear the risk of lack of performance. If the deposit insurance scheme is publicly funded, as it has been in the past in the US and is in many other countries, then deficiencies in the fund must be born by the taxpayer. And here, there is not always clear that the taxpayer will step up, even if there is an implicit, let alone explicit responsibility to do so. There are many instances, such as the State of Ohio, where taxpayers reneged on their implicit guarantees and their deposit insurance system failed.³¹ The likelihood of taxpayers not living up to their guarantees is directly linked to the size of the losses. It is hard to imagine countries like Luxembourg or the Netherlands incurring large fiscal debts to honor claims of a significant number of depositors located in other EU countries. Of course, if deposit insurance guarantees are not honored, then not only may losses be incurred by both insured and uninsured creditors, but they may also experience significant liquidity problems as well.

Finally, the nature of deposit insurance coverage may also impose negative externalities in cross-border situations. For example, not only does the US deposit insurance system not cover deposits in foreign branches of US banks but also the deposit insurance fund stands ahead of uninsured creditors in terms of priority of claims to

³¹ See Eisenbeis and Kaufman(2006).

recovered assets. Hence the failure of a large and significant US institution with branches in another country that may have a large share of the market would put the depositors of that branch into limbo until the failure is resolved.³² Similarly, uninsured depositors would also suffer liquidity and credit losses. For US banks, these externality risks are not large, because the failure of a large bank is intended to be resolved promptly, and both insured and uninsured creditors should have prompt access to most of their funds.³³ In Europe, and many other countries, it is much less certain as to how depositors may fare if a large cross border banking organization were to fail. First, there are no special bankruptcy provisions in most EU countries for bank failures, so resolution depends upon the courts.³⁴ Second, most laws don't require immediate access to funds. Third, while deposits in branches of other EU countries are covered, they typically aren't in branches in non-EU countries.

Probably the least explored set of issues in the literature are the negative externalities associated with market disruptions that involve liquidity or other problems in international debt or equity markets. The sudden breakdown of financial markets, for example, might have both domestic and international consequences, and it is not at all clear who or under what circumstances governmental intervention might either be justified or occur. Clearly, central bank intervention can occur through either use of the discount window, as was done following the September 11th terrorism attack in the US, or through broad based open market operations. Similarly, a rescue package was also put together to deal with the problem that occurred in Mexico. International organizations

³² Again, when the branch in the host country is significant in size, there would be a strong temptation to engage in ring fencing of assets, which is what the U.S. did in the failure of BCCI.

³³ See Kaufman(2004) for a detailed discussion of how US bank failures typically are resolved now.

³⁴ For a discussion see Lastra (2006).

such as the World Bank or IMF have also stepped in to deal with problems in individual countries. But with the internationalization and cross border ownership of exchanges and spread of derivatives markets, the potential for financial disruptions seem to have become greater and potentially more significant.³⁵

A related issue concerns recent developments in world payments systems and the finality rules in real time gross settlement systems (RTGS) in which settlement payments are made in central bank funds and once accepted into the system are final. Under Fedwire, for example, payments initiated into the system are guaranteed by the Fed as final, which interposes a central bank between counterparties. New arrangements in the clearing and settlement of foreign exchange transactions involve involving a private sector solution to the Herstatt problem through a consortium of banks that created CLS bank. Work has just begun exploring the implications that these arrangements may have for systemic risk issues. A concern is that because CLS settles using central bank funds, the effect is to link payments systems together in ways that failures may require liquidity to be provided by central banks in ways that are both difficult to predict.³⁶ Moreover, to the extent that central banks defacto must provide such credit to avoid meltdowns, disincentives may be created for counterparties to monitor their risk exposure, giving risk to moral hazard.³⁷

³⁵ Lindgren(2006) found little evidence of cross-border contagion in his examination of recent financial crises.

³⁶ For discussions see Kahn and Roberds(2000), Kahn and Roberds(2006), and the references therein.

³⁷ See Fujiki, Green and Yamazaki(2006).

Summary and conclusions

This paper has attempted to examine the issues surrounding the negative externalities that may occur when a large bank fails, to describe the nature of those externalities and to determine whether they are greater in a case involving a large cross-border banking organization. The analysis suggests that the chief negative externalities are associated with credit risk and losses of liquidity and these losses are critically affected by how promptly an insolvent institution is closed, how quickly depositors gain access to their funds, and how long it takes borrowers to re-establish credit relationships. While regulatory delay and forbearance may affect the size and distribution of losses, the likely incident of systemic risk and the negative externalities are more associated with the structure of the applicable bankruptcy laws and methods available to resolve a failed institution and quickly get it operating again. The assumption here is that a large organization will not be liquidated but instead must be promptly reorganized, recapitalized and re-privatized in order to limit the externalities that the failure may bring with it. The analysis also suggests that, while agency conflicts and goal conflicts among the responsible regulators, deposit insurance funds and taxpayers may increase the size of potential losses, as was the case for a large domestic-only institution, the incident of negative externalities are more determined by the bankruptcy and resolution policies that are in place. This implies that regulatory concerns about systemic risk should be directed first at closing institutions promptly, at reforming bankruptcy statutes to admit special procedures for handling banking failures and to provide mechanisms to give creditors and borrowers prompt and immediate access to their funds and lines of credit.

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