

## **DEVELOPING DISTRESS RESOLUTION PROCEDURES FOR FINANCIAL INSTITUTION**

---

***Clas Wahlborg\****

### **Abstract**

A common response of governments to signs of stress in the domestic banking system is to issue a blanket guarantee for banks' liabilities. The recent crisis has led to a re-evaluation of the channels of contagion that may create systemic risk in the financial system. In particular, contagion through price changes on securities and liquidity in markets for securities have been emphasized by economists while the more traditional contagion through payment and settlement systems have become less of a threat as a result of innovations in these systems. The emphasis on price and liquidity contagion has implications for the financial regulatory framework as a whole as well as for procedures for dealing with financial institutions in distress. Systemic liquidity problems can arise when financial institutions are induced to hoard available liquidity out of fear that funding in the market may not be available when needed and as a result of uncertainty about the soundness of each financial institution trying to borrow funds in the market. Prompt and predictable procedures for resolution of distress would mitigate this problem.

**Keywords:** Financial Institutions, Banking System, Liquidity, Regulation

*\* Chapman University, 333 N. Glassell, Orange, CA 92866, United States*

*Tel.: +17147447630*

*Email: [wahlborg@chapman.edu](mailto:wahlborg@chapman.edu)*

### **1 Introduction**

A common response of governments to signs of stress in the domestic banking system is to issue a blanket guarantee for banks' liabilities. For example, the Swedish government guaranteed all liabilities of domestic banks during the banking crisis in the early 1990s to prevent any kind of run on the banks and to allow them to have continued access to international markets for financing. Although the guarantee was legally abolished in 1995 the expectations that the government will behave the same way in another crisis naturally linger. The expectations have been confirmed in the recent 2007-2009 crisis. Banks' creditors and, to some extent, shareholders have been provided with a safety-net across Europe. Only in the US have bank failures been allowed to result in losses for large groups of creditors. Even there, large banks and other financial institutions (with the exception of Lehman Brothers) were protected and bailed out in the US as well.

One consequence of the recent crisis is that public sentiment has turned strongly against the use of taxpayer money to bail out financial institutions in the US, in particular, but public opinion in many European countries seems to have moved in the same direction. Thus, there is now political pressure in many countries to develop institutions that will make large scale bail-outs unnecessary or less necessary in the future.

The longer term adverse effect of not allowing large financial institutions to fail is that creditors worry less about their solvency and, as a result, creditors monitor them less intensively. Thereby, the protected financial institutions gain a competitive advantage through lower costs of funds. This implicit subsidization leads to further concentration in the financial industry and implicit protection of an increasing share of the financial industry. It is well-known and empirically well documented that financial institutions, wherein creditors are largely protected, have incentives to take excessive risk since part of the down-side is carried by tax payers and deposit insurance funds.

The incentives to take excessive risk associated with explicit and implicit protection of banks' creditors are not typically revealed as deliberate opportunistic behavior of bank managers. Risktaking is the result of an artificial low cost of debt relative to the cost of equity and insensitivity of the cost of debt to increased risk. Banks facing competition seek to minimize the cost of capital and, at a given cost of funds, banks will seek to maximize the return on capital. With weak monitoring from creditors and a low penalty for risk-taking, the industry standards for proper risk management and risk awareness declines. As a result, banks tend to neglect that relatively high return assets often are associated with relatively high risk without being penalized. Liquidity risk may similarly become excessive and reveal itself in increased short term funding of long term commitments.

The Basel Committee on Banking Supervision acknowledges that in a market economy, failures are part of risk-taking and that a prompt and orderly liquidation of institutions that are no longer able to meet supervisory requirements is a necessary part of an efficient financial system. Forbearance often leads to worsening problems and higher resolution costs. On the other hand, the Committee explicitly states that "in some cases the best interests of depositors may be served by some form of restructuring, possibly takeover by a stronger institution or injection of new capital or shareholder." The Committee's, as well as the European Commission's, focus has been on shareholders having to face responsibility for losses. However, it is the protection of creditors that reduces the cost of debt financing. Creditors do not penalize risk-taking sufficiently and they do not have strong incentives to monitor banks' behavior. Limited liability of shareholders implies that they have incentives to "gamble for survival" when the equity capital at stake falls in value.

The focus on shareholders' responsibility for losses may explain why the Basel Committee before the crisis did not pay much attention to the development of explicit procedures for bank distress resolution including procedures for allocating losses to banks' creditors. Even procedures for "structured early intervention" along the lines of the US rules for Prompt Corrective Action (PCA) were neglected.

Another reason why formal insolvency procedures for financial institutions have been neglected may be a common belief that banking crises are often caused by systemic shocks that tend to put a large part of the banking system in distress at one time. Subjecting a large part of the system to insolvency procedures at one time seems unimaginable and, therefore, protecting the system by taking over its losses is viewed as the only acceptable alternative. A consequence of this view is that insolvency procedures are almost superfluous as instruments of crisis management. The argument misses the point that even a large macroeconomic shock need not threaten the whole financial systems if financial institutions are not excessively fragile. The fragility of the whole system is partly caused by distorted risk-taking incentives and effective insolvency procedures are a necessary condition for removing these distorted incentives. Thus the insolvency procedures should improve the ability of the system as a whole to handle a large macroeconomic shock without system wide insolvencies.

Several economists have discussed the potential contribution of bank insolvency law in enhancing market discipline in Europe, where specific bank crisis resolution procedures have not been implemented.<sup>1</sup> The European Shadow Financial Regulatory Committee (1998) expressed the objective of a special insolvency law for banks in the following way: "The implementation of insolvency law for banks should achieve an acceptable, low risk of runs and low risk of contagion while inefficient owners and managers exit. The contractual predictability of claims and the predictability of bankruptcy and PCA (Prompt Corrective Action)-costs should provide efficient ex ante incentives. By achieving these objectives the government's and the regulator's fear of a system crash should be alleviated. Thereby, non-insurance of groups of creditors and shareholders would be credible".

In a similar vein, *the Economist* wrote more recently<sup>2</sup> that "What is needed is a way of pushing losses onto creditors without sparking a run that endangers the whole system." The editorial continues to note that "The alternative (to break up large banks into banks small enough to fail) is to find a way to allow a controlled default of part of banks' balance sheets. That will require the rejigging of their liabilities to

---

<sup>1</sup> See Angkinand and Wihlborg (2006), Eisenbeis and Kaufman (2007, 2008), Goldberg, Sweeney and Wihlborg (2005), Huertas (2007), Hupkes (2003), Krimminger (2005), Lastra and Wihlborg (2007), Llewellyn and Mayes (2003), Schiffman (1999),

<sup>2</sup> Editorial on Jan. 30, 2010

include new forms of debt, as well as the creation of resolution authorities with enough power to impose losses on some creditors, but not so much that they terrify counterparties into running."

Llewellyn (2010) has suggested that a fourth pillar should be added to the three pillars of the Basel Capital Accord. This fourth pillar should focus on resolution arrangements including structured early intervention and rules for activation of the procedures with the objective of reducing costs of bank failures.

Procedures for structured early intervention and allocation of losses to creditors in case of insolvency need to be designed with the special characteristics of financial firms in mind in the sense that they minimize the risk of contagion among financial institutions. Without predictable rules for the allocation of losses, resolution will be delayed and, in the meantime, management and shareholders of distressed firms are likely to try to avoid the realization of losses in various ways. Expectations of government intervention may delay the realization of losses further.

During the recent crisis the G-20 and others have suggested that large financial institutions should plan for their own unwinding while in good health by means of "living wills." Such plans cannot substitute for formal procedures but the information required in living wills can be made part of "structured early intervention" as suggested by, for example, Avgouleas et al (2010) and Llewellyn (2010).

In the following, the role of insolvency procedures and efficiency aspects of insolvency procedures for non-financial corporations are reviewed in Section 2. The traditional view of banks' specialness and the argument for special bank insolvency law is discussed in Section 3. In Section 4 the specialness of banks relative to other financial institutions is questioned based on experiences of systemic risk in the recent financial crisis. The argument that the closure of large insolvent banks or a large part of the banking system in a crisis is not feasible is discussed in Section 5. Existing procedures for dealing with and resolving distress and insolvency of banks are reviewed in Section 6 with a focus on New Zealand, the US and the UK. The discussion leads to a focus on specific important issues that must be addressed. These issues are summarized in section 7. In Section 8 pros and cons of recent developments in other countries including Sweden are discussed. Ongoing work within the European Commission is also noted.

Even the best law for dealing with distress in financial institutions cannot solve all problems associated with excessive risk-taking and systemic risk. The need for complementary reform of financial regulation is discussed in Section 9. Concluding remarks follow in Section 10.

## **2 The role of and efficiency of Insolvency Law**

Efficient corporate insolvency procedures allow appropriate restructuring, debt-reduction, management change, liquidity infusion or other actions to take place. Debt reduction or forgiveness allows a person or a firm to "start over without the burden of old debt". The difficulty of designing efficient insolvency procedures is to a large extent caused by information problems with respect to the cause of distress and asset values. Collateralized loans and priority rules discourage "runs" on the available resources of a distressed firm. A run can force a firm into bankruptcy prematurely. In banking this "run problem" is particularly acute. Another issue discussed below is that efficient insolvency procedures at the time insolvency occurs need not be efficient *ex ante* when incentives for taking on debt and risk must be considered.

In countries with explicit corporate restructuring law such as Ch. 11 in the US, an independent body with enforcement powers, such as a court, is required to determine the value of the firm and the value-maximizing course of action. Contracts are abrogated when firms enter restructuring proceedings. Therefore, the predictability of the outcome for various stakeholders is low and the outcome is generally more favorable to the shareholders and management than the outcomes in countries with a more creditor- and liquidation oriented approach to insolvency.<sup>3</sup> The predictability of formal insolvency procedures is also influenced by arbitrariness of court procedures, corruption of judges, and political influences on the procedures. Clearly, the nature of the insolvency procedures and their predictability affect the process of loss allocation, its speed, and the ability of different stakeholders to influence the allocation of losses.

---

<sup>3</sup> See Wihlborg, Gangopadhyay and Hussain (2001)

According to Schiffman,<sup>4</sup> corporate insolvency laws should seek to fulfill two principal objectives: fair and predictable treatment of creditors and maximization of assets of the debtor in the interests of creditors.

Forgiveness of debt allows a person or a firm to start over without being burdened by previous mistakes but expected forgiveness may provide incentives to borrow in excess of what is *ex ante* efficient. A time consistency problem exists when the efficient action against an insolvent firm or individual at the time of the insolvency event is different from the efficient procedures to be incorporated in persons' and firms' borrowing and project decisions. The "first best" approach to resolve the insolvency at the time of the event may include forgiveness of debt but, if forgiveness is expected, the likelihood of insolvency could increase as a result of incentives to borrow and take risk. In this case, lenders are likely to reduce the supply of credit in this situation but with imperfect information about the honesty of the borrower and the risk he or she is taking. A second best solution at the time of insolvency may include a penalty on the person becoming insolvent in order to create superior *ex ante* incentives to reduce the demand for credit.

### **3 The special characteristics of banks. The need for *lex specialis***

In banking there are potential externalities associated with insolvency which make the time consistency issue particularly relevant. It is widely accepted that one bank's failure can lead to a "domino effect" threatening the banking system. If so, the first best response to a bank's insolvency may be to bail out the bank or in other ways protect its creditors. Expecting a bail-out the bank's shareholders have an incentive to leverage the bank excessively. Protection of creditors in the case of insolvency may prevent "domino effects" but, if the protection is expected, the supply of credit to the bank becomes excessive and there is no incentive for creditors to monitor the bank's risk-taking. Limited liability of shareholders has the same effect on incentives. In both cases, the bank will find it optimal to accept a relatively high probability of insolvency.

As for persons and firms, an *ex ante* rule for loss sharing in case of insolvency could reduce the demand for, as well as the supply of, borrowed funds to the bank. Although the rule would be second best at the time of an insolvency, it would provide more efficient incentives for risk-taking in the banking system.

The time consistent rule would occur when the expected degree of bail-out and creditor protection is equal to the actual bail out and creditor protection policy. There are multiple time consistent rules and policies but the efficient one would induce risk-taking in accordance with households' preferences for risk. For a rule to be time-consistent it must be made credible by the loss allocation at the time of insolvency. Since insolvency is not an everyday event the credibility may have to be supported by an institutional framework providing commitment to the rule.

Although the roles of insolvency procedures for banks in some ways are the same as for non-financial corporations the objectives of the procedures differ in important ways. These differences are explained by the special characteristics of banks and other financial firms as mentioned above and discussed in more detail below. Speed of action in distress resolution is of the essence. Conventional liquidation and restructuring procedures are too time-consuming to be applied to banks without modification.

For the reasons mentioned, corporate bankruptcy and restructuring laws are not often applied in cases when banks fall under the jurisdiction of these laws. Few countries have special insolvency law for banks and other financial firms, however.<sup>5</sup> The main exception is the USA that has implemented bank-specific insolvency procedures through the FDIC through the enactment of FDICIA (Federal Deposit Insurance Corporation Improvement Act) in 1991. A bank reaching a capital ratio of two percent is put under the receivership of the FDIC. Specific rules for merging or allocating the assets of the bank exist as described in Section 6. Several hundred small and medium-sized banks were closed during the years 2008-2010. The procedures have so far not been tested on a large bank, however.

---

4 See H. Schiffman (1999) pp. 89-90.

5 In addition to the USA, Canada, Italy, and Norway have specific insolvency laws for banks. The existence of a law does not necessarily mean that it is successful in the sense that it achieves its objectives. If not, as in Norway, the law is typically not put to use. In Sweden a law for public administration of distressed banks was proposed in 2000. The law has not yet been implemented, however.

It seems appropriate that the insuring authority like the FDIC takes the coordinating role that large, senior creditors often have in non-bank re-structuring. However, in many countries the insuring authority may be the government and, even if there is a specific authority, there are in most countries neither pre-established procedures for settling claims against non-insured creditors, nor the expertise in the authority to manage the insolvency.

In banking, the definition of insolvency (the trigger point for an insolvency proceeding) is sometimes a matter of controversy. There are two traditional definitions of insolvency in commercial bankruptcy laws: failure to pay obligations as they fall due (equitable insolvency), and liabilities exceed assets (balance sheet insolvency)<sup>6</sup>. In banking the line of demarcation between illiquidity (lack of liquid funds) and insolvency is not always clear. An economically insolvent bank is not always declared legally insolvent by the responsible authorities and may be offered financial assistance instead.

The pre-insolvency phase is of great importance in banking because of the difficulty of evaluating when the net worth of a bank is zero in market terms. In recent years PCA (prompt corrective action) rules, including SEIR (structured early intervention at trigger points while there is equity capital left) have been advocated. In the USA, legally binding PCA-rules exist since the enactment of FDICIA in 1991. This Act makes the structured early intervention legally binding in order to enhance credibility and predictability of actions against distressed banks.

An important function of structured early intervention rules is to allow intervention before insolvency occurs in order to rehabilitate or restructure a distressed bank. Laws with respect to bank rehabilitation, reorganization or restructuring vary widely from country to country. A takeover or a merger generally preserves the going-concern value of an institution, as the acquirer succeeds both to a depositor base and to a base of loan customers. As opposed to a straight liquidation, a merger eliminates the danger that vital banking services in a community will be disrupted. Sometimes, failed banks may be placed under special administration in the form of bridge banks, new banks, special funds or other arrangements. This is often meant to be a temporary solution in order to take over the operations of the failed bank and preserve its going-concern value while the government fiduciary seeks a more permanent solution to the problems or until an acquirer is found. We return to these procedures below.

#### **4 New views of systemic risk. Are banks really special?**

The traditional arguments for government regulation of industries are to constrain monopoly power and the existence of externalities. In the financial sector the externality most often emphasized is that the failure of a bank can threaten the payment system as a consequence of contagion of one bank's failure through the banking system. The contagion could occur through runs on solvent banks because they are opaque and through inter-bank claims arising within payment and settlement system.

In the traditional view banks were special as a result of their participation in payment systems and as suppliers of liquidity. These roles of banks imply that very short term liabilities provide most of their funding while longer term, illiquid loans dominate on the assets side.

The interconnectedness of banks implies that there is a substantial difference between the failure of a bank and the failure of, for example, a car manufacturer. One car manufacturer's failure improves the profitability of others. One bank's failure can lead to losses for other banks with claims on the failing bank.

It can be debated whether the contagion effect in banking is a true externality since the individual bank evaluating the risk of lending to another bank should take into account the probability that systemic problems can arise as one factor in the lending and pricing decision. Whether we want to call the contagion effect an externality or not, the fact remains that the distress of one bank can have system-wide consequences and each bank may not take these potential consequences fully into account in their risk management.

---

<sup>6</sup> See Schiffmann (1999), pp. 96-97.

The sub-prime financial crisis has led to increased awareness that the failure of non-bank financial institutions can create contagion effects as well. Thus, in addition to bank contagion mentioned above, there are channels of contagion we can call price contagion and liquidity contagion.

Price contagion occurs through securities markets when a large financial institution must sell assets quickly resulting in a decline in asset values throughout the financial system. This type of contagion has increased in importance as a result of increased reliance on mark-to-market valuation and higher capital requirements.

Liquidity contagion refers to lack of liquidity in securities markets with the consequence that financial institutions wanting to or having to sell securities have difficulties finding buyers at prices corresponding to conventional economic values. The lack of liquidity may arise as a result of uncertainty about the solvency of financial institutions. Thus, the source of this type of contagion can be similar to the bank run problem caused by market participants' inability to identify the insolvent banks. If there is fear of a liquidity squeeze, financial institutions may also hoard liquidity out of fear that they may not be able to sell when needed. In this case, the financial institution looks liquid on the balance sheet but this liquidity could contribute to lack of liquidity in securities markets.

These types of contagion have in common that they affect non-bank financial institutions as well as traditional banks, and that they are likely to have repercussions on the real economy when the financial institutions reduce the supply of credit in order to retain or build up capital or retain or build up liquidity. The contagion effects are particularly severe for financial institutions with substantial mismatch of maturities of assets and liabilities. As the crisis has demonstrated non-banks often financed the purchase of long term securities in the markets for short term securities such as commercial papers. Cohen (2008) reports that Bear Sterns funded much lending activity through overnight borrowing.

Price and liquidity contagion are likely to reinforce each other since the market value of securities can drop dramatically when buyers require a substantial liquidity premium and, therefore, bid below the traditional economic value. Mark-to-market valuation clearly plays an important role in the process.

Brunnermeier et al (2009) discuss the process of contagion through securities markets. They point out two externalities in a market-based financial system:

1. Fire sale externalities
2. Interconnectedness externalities.

The fire sale externality implies that financial institutions do not take into account the price impact on other institutions of their sales in a possible future liquidity crunch. The interconnectedness externality refers to the case when a financial institution does not consider consequences of their actions on connected institutions that may suffer losses as a result of its actions.

To analyze these externalities further Brunnermeier et al elaborate on alternative models of contagion. The traditional "domino model" refers to the traditional bank contagion model. One bank's insolvency implies a loss for another bank and if this loss is big enough it will default with consequences for a third bank and so on. Most studies of this domino effect conclude that its impact on contagion is small.

An additional consideration from a systemic point of view is that lack of market liquidity and price effects can amplify the systemic effects of losses incurred by one bank. One bank suffering losses draws down its balance sheet including claims on another bank. This second bank must find a new source of funding. Without access to another source it must sell assets and thereby depress prices.

Brunnermeier et al describe the potentially serious systemic "loss spiral" for financial institutions caused by price effects in securities markets.<sup>7</sup> To start the downward spiral they consider a fall in the price of a security held by hedge funds and banks. The net worth of the financial institution falls more than the price. To restore the equity cushion the institution sells assets to repay debt. The asset price falls further

---

<sup>7</sup> Brunnermeier et al (2009) base their descriptions of loss spirals on Brunnermeier M and L. Pedersen, "Market Liquidity and Funding Liquidity" Review of Financial Studies, 2009.

impacting on the equity cushion of other financial institutions. Mark-to market valuation plays an important role in the process that works in reverse as well.

The loss spiral can be amplified further by a "margin/haircut spiral" in leveraged financial institutions. Margins and haircuts determine the maximum leverage a financial institution can choose. An increase in margins forces the financial institution to sell assets to de-leverage. Asset prices fall and financial institutions must sell more assets to de-leverage further and so on. If many market participants find themselves in a similar situation there are no buyers and liquidity disappears with the result that the price drops become more accentuated.

Adrian and Shin (2007) present evidence of this spiral showing that there is a strong positive correlation between change in leverage and change in assets. The percent change in asset (change in log assets) is on the average equal to the percent change in leverage (change in log assets-change in log equity). This observation implies that adjustment in leverage takes place mostly through asset expansion and contraction and not through equity adjustment. This pattern is consistent with the margin/haircut spiral reinforcing the asset price spiral. These spirals have the effect of causing procyclicality in the reaction of financial institutions to changes in asset prices over the cycle.

The expanded view of contagion and systemic risk summarized above has strong implications for the regulation and supervision of the financial sector. One is that contagion and, thereby, systemic effects of financial institution's distress is not confined to traditional banking in the modern financial system. A second implication is that mark-to-market accounting contributes to "price contagion" and the procyclicality of financial activity. It does not follow, however, that mark-to-market accounting should be abandoned. Instead, capital adequacy regulation with its rigid minimum capital ratio may have to be reconsidered. Third, maturity mismatch between assets and liabilities of financial institutions makes the financial system vulnerable to liquidity shocks. Fourth, requiring financial institutions to satisfy minimum liquidity ratios on the assets side may make matters worse if the ratios are rigid since fire sales can be triggered by shocks to the amount of liquidity held. Fifth, implicit subsidization of "too big to fail" and "too interconnected to fail" financial institutions can only strengthen systemic risk. Implicit subsidization takes place through bail-outs of financial institutions. Sixth, transparency with respect to valuation of assets contributes to transparency with respect to solvency and, thereby, to a lower likelihood of that a financial institution will face liquidity problems. Seventh, "living wills" that specify how a financial institution plans to unwind in case of distress does not address the systemic risk associated with distress. The individual bank may consider asset sales as one aspect of its unwinding but it is exactly such sales that can be the cause of contagion.

Some of the above implications refer to the broader regulatory framework for financial institutions but several have direct relevance for procedures for dealing with financial institutions in distress. The following observations can be made with respect to the legal and regulatory framework for financial institutions:

1. Special insolvency law may have to cover non-bank financial institutions as well as banks.
2. Flexibility in the required capital ratio can reduce the need for fire sales of assets. "Structured early intervention" prior to insolvency along the lines of Prompt Corrective Action procedures is one way of achieving flexibility while reducing the probability that a financial institution will reach the default point.
3. Principles for valuation of assets should be transparent and clear since they affect points of intervention and insolvency.
4. Insolvency procedures need to be specified with one objective being to minimize the asset price effects and market liquidity effects of one institution's default.
5. It must be recognized that the procedures for dealing with a financial institution in distress affect the incentives for risk-taking and liquidity planning (including mismatch of maturities) prior to insolvency.
6. Valuation principles affect these incentives as well. For example, mark-to market accounting is associated with greater risk of insolvency as well as liquidity problems at a given capital ratio

and maturity mismatch. On the other hand, the greater variability of market prices can provide incentives to raise capital ratios and improve liquidity planning.

## **5 Can the market handle the insolvency of a large financial institution?**

Many observers of the financial crisis have argued that it was made unnecessarily severe by Lehman Brothers' default on September 15, 2008. The most common description of events is that banks' short term cost of funding shot up and liquidity in short term securities markets dried up. Most economists and policy makers use these observations from the time of Lehman Brothers' default as evidence that large financial institutions must not be allowed to fail because, if they default, the systemic consequences can cause a disastrous credit crunch and, therefore, depression.

A smaller group of economists dispute both the evidence of the market's reaction to Lehman's default and the explanations for the credit crunch and decline in economic activity that followed. In particular, Cochrane and Zingales in an article in *Wall Street Journal* on the anniversary of Lehman's default showed evidence that the bank-credit default swap spread (the cost of buying insurance against default) on Sept. 22, 2008 one week after the default was down on the same level as on Sept. 12 a few days before the default. Thus, it seems that the markets absorbed Lehman Brothers' default within a week. On Sept. 25 the spread was up again, however. What happened between Sept. 22 and Sept. 25 that could raise the spreads again?

Cochrane and Zingales notes that on Sept. 23 and 24 the Chairman of the Federal Reserve Board, Ben Bernanke, and the Treasury Secretary, Henry Paulson, gave speeches to congress requesting \$700 billion for the Troubled Asset Relief Program (TARP). The LIBOR-OIS spread capturing the riskiness of short term interbank lending shot up 60 points from Sept. 23 to Sept. 25 while it rose only 18 points the day of Lehman's collapse. How can an announcement of massive aid to financial institutions lead to an increase in risk-spreads and a collapse of liquidity in short term markets?

The Cochrane-Zingales story is that the speeches by Bernanke and Paulson amounted to saying "The financial system is about to collapse. We can't tell you why. We need \$700 billion. We can't tell you what we are going to do with it."

Actually, the Fed and the Treasury had felt for some time that they may need authority to carry out bail-outs but in Cochrane-Zingales interpretation the public saw a government in panic and banks in worse trouble than previously thought.

The more common interpretation of Lehman as the cause of the deepening crisis leads to the policy implication that the government must have bail-out power and ability to avert serious systemic consequences of the default of large financial institutions. The Cochrane-Zingales interpretation has the implication that markets can adjust reasonably quickly to the default of one institution. Most of the Lehman's operations were up and running with new owners within a few days and losses were to a large extent allocated to various creditors. There were problems though when, for example, repos were stuck in a UK bankruptcy court.

The Lehman bankruptcy was carried out under bankruptcy laws intended for corporations in the UK as well as the US.<sup>8</sup> It is not surprising that there were some problems. Nevertheless, there was no great wave of contagion to creditors of Lehman.

The main implication of Cochrane and Zingales' analysis is that systemic liquidity problems can arise when financial institutions are induced to hoard available liquidity out of fear that funding in the market may not be available when needed and as a result of uncertainty about the soundness of each financial institution trying to borrow funds in the market. The consequences of these liquidity problems are likely to be more severe the longer the time the "clean-up" of the system is expected to take.

In another paper Cochrane (2009) draws the conclusion that "once every one expects a bail out, it (the government) has to bail out or chaos results." The expectation of bail out of large institutions creates a

---

<sup>8</sup> In most cases bankruptcies under Chapter 11 in the US are time consuming and characterized by long negotiations about loss allocation.



competitive advantage for large, interconnected and opaque institutions. If so, there are incentives to organize financial activities in such financial institutions. Externalities creating systemic risk are thereby created by the fear of systemic risk.

Cochrane (2009) does not draw the conclusion that regulation is unnecessary. Regulation must deal with the problem that explicit insurance of some depositors creates incentives to use deposited funds for risky activities. Regulation and tax systems should not encourage the creation of obscure and fragile institutions like the Special Investment Vehicles that invested in mortgage backed securities funded by short term commercial papers explicitly or implicitly guaranteed by a bank. Short term funding of longer term risky assets is bound to cause problems as soon as the value of the risky assets falls in any institution with insufficient capital.

Funding for financial institutions beyond the necessary explicit insurance must be explicitly risky for investors. Investors facing default risk of financial institutions would penalize the overly opaque and interconnected financial institution since it would be subject to greater risk including the risk of contagion from others market participants. This view implies that the externalities discussed above may be reduced in a financial system where opaqueness and interconnectedness are penalized by creditors of financial institutions.

The procedures for dealing with the large financial institution are not addressed in the mentioned papers. However, Cochrane notes that the creation of a resolution authority does not in itself reduce the likelihood of bail-outs but that the likelihood may actually increase if the resolution authority is given a large amount of arbitrary power with few legal constraints. Thus, predictability of rules for allocation of losses is an essential part of insolvency procedures if bail-out incentives are to be reduced.

A more detailed view of the market's ability to deal with a large financial conglomerate in distress is given by Huertas (2007). He argues that the financial infrastructure has become sufficiently robust to handle even the largest financial institution's default as a result of increased robustness of payments, clearing and settlement systems. On these grounds Huertas proposes that in a large crisis affecting most of the financial system the public authority should consider the use of liquidity creating powers to prevent the second large failure but not the first.

Huertas points to several robustness-enhancing financial developments in recent decades and to potential innovations that would contribute further to robustness. First, capital markets can provide funds even to very large firms if investors can be convinced that a distressed firm has a viable strategy for correcting past errors. Funding can be obtained in the form of common equity, mezzanine financing (preferred stock and subordinated debt), securitization and structured finance in various forms. The sale of a part of the conglomerate is another source. Subordinated debt can be made convertible into equity at a critical level of distress. Flannery (2005) and Ostrup (2008) has suggested mandatory convertible debt as a part of the regulatory capital.<sup>9</sup>

Capital markets can also provide protection in advance of distress by means of financial instruments that pay out contingent on an event and/or level of equity. Contingent capital is offered by insurance companies. Catastrophe bonds are a form of derivative that pays out if losses exceed a certain trigger coupled with a fund invested in low risk securities to eliminate counterparty risk.

Another factor pointed out by Huertas is the increased robustness of payment systems as a result of real-time gross settlement systems and multilateral netting. According to the Lamfalussy principles<sup>10</sup> a multilateral netting system "should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the largest single settlement obligation." Furthermore, the system should have a well-founded legal basis under all relevant jurisdictions." Essentially, operations of payment and settlement systems should be insulated from the bankruptcy of operations. Bankruptcy codes are not consistent with this principle in some jurisdictions but in the EU payment and

---

<sup>9</sup> In 2005 there was about 25 billion in mandatory convertible bank debt outstanding according to Huertas. Credit Suisse Group issued CHF 1 billion in 2002.

<sup>10</sup> Committee on Payment and Settlement Systems (1997)

settlement systems have been "carved out" from insolvency law (EU Directive on Settlement Finality in Payment and Securities Settlement systems (1998/26 OJ L. 166,11/06/1088)).

The so called Herstatt risk in foreign exchange markets<sup>11</sup> has also been reduced substantially through the introduction of the CLS bank in 2002. This bank is owned by a group of large banks and its purpose is to settle foreign exchange transactions on a continuous basis. The bank matches foreign exchange transactions, provides for multilateral netting and arranges for settlement of net obligations. Participating banks post collateral with the CLS Bank.

The third robustness factor pointed out by Huertas is the implementation of standards for documentation of derivatives contracts. The standards have been negotiated through the ISDA (International Swap Dealers Association). The documentation allows for bilateral close-out netting within and between countries. Remaining exposures are often collateralized.<sup>12</sup>

Turning finally to securities markets, robustness has improved through improvements in payment, clearing and settlements systems. In addition, the Group of Thirty (2003:2) building on earlier recommendations to reduce the risk in clearing and settlement systems made recommendations with the objective to develop an efficient and safe global network for securities market trading. In particular "automation and acceleration of trade matching and confirmation" by means of common technical and communication standards have been emphasized. The greatest progress in this respect has been made in the EU.<sup>13</sup> Furthermore, the interval between trade date and settlement data has been shortened to three to four days and a Central Counterparty (CCP) has been created. The CCP is the buyer for every seller and the seller to every buyer. The CCP takes the counterparty risk. To reduce the risk of failure of the CCP it limits its exposure to each participant and requires collateral for remaining exposures.

The mentioned measures to increase the robustness of the financial system has contributed to making the so called domino effect a minor source of contagion among traditional banks as well as among other financial institutions including conglomerates. Contagion through price and liquidity effects have not been eliminated, however, as demonstrated by the recent financial crisis. Since these effects are closely associated with macroeconomic economic developments, Huertas (2007) emphasizes the provision of liquidity of the central bank as a key instrument to dampen the contagion and mitigate its effects. This route has also been followed by central banks in the current crisis.

Brunnermeier et al (2009) referred to in the previous section also consider these sources of contagion a macro-prudential issue but they also emphasize that inability to distinguish between solvency and a liquidity problems contributes to contagion. Cochrane's view is that the vulnerability to contagion is very much a result of explicit and implicit protection of creditors, in particular, and the impact of this protection on incentives to create large opaque institutions that become vulnerable to liquidity shocks.

Huerta's relatively optimistic view of the market's ability to manage the insolvency of a large bank is based on the presumption that market participants are able to evaluate whether a bank has a viable strategy for the future. Thus, a degree of transparency of operations is required. This transparency seems to have been lacking during the crisis years. As a result the liquidity support during the crisis had to be much larger than required in a less opaque financial system.

## **6 Approaches to bank insolvency. The US , New Zealand and UK**

### ***The US approach***<sup>14</sup>

Current US law with respect to insolvency separates the treatment of banks, but not non-bank financial institutions, from the treatment of corporations in general. Insolvency procedures for banks are specified in the FDICIA (Federal Deposit Insurance Improvement Act of 1991).

---

<sup>11</sup> Herstatt risk occurs when banks settle one leg of a foreign exchange transaction in advance of the other.

<sup>12</sup> In 2005 55 percent of OTC derivatives exposures was supported by collateral according to Huertas (2007).

<sup>13</sup> Group of Thirty (2005 p3-4 and 16-18)

<sup>14</sup> Eisenbeis and Kaufman (2007) provide a summary of the US approach. See also US Shadow Financial Regulatory Committee, Statement 160, (2000)

The FDICIA has two important components that complement and support each other. First, Prompt Corrective Action (PCA) procedures prior to insolvency have the purpose of reducing the likelihood of insolvency as well as increasing the preparedness for implementing insolvency procedures if necessary. Second, there are legally mandated rules for declaring insolvency and for procedures for dealing with the insolvent bank and its stake-holders. These rules address several problems discussed above. In particular, the rules recognize the need for speed, that groups of creditors must be at risk, that the risk of contagion as a result of the insolvency must be low and that predictability of procedures reduces uncertainty about consequences of various action and strengthen incentives to take action to avert insolvency.

There are two characteristics of the US framework that stand out; one is “promptness” of actions by the FDIC at different stages of a bank’s distress. The second characteristic is that the actions are legally mandated. Both contribute to predictability for stakeholders and to reduced incentives for “runs” on a bank in distress.

#### PCA: Prompt Corrective Action

The PCA procedures specified in the FDICIA represents a form of “structured early intervention” with the purpose of reducing the likelihood that a bank approaching distress will actually fail and potentially becoming a systemic problem. The procedures also restore the buffer role of capital, since PCA allows capital to fall below the Basel based regulatory minimum but increasingly harsh sanctions are imposed on the banks at specific trigger capital ratios. The sanctions impose predictable costs on banks’ shareholders and management. In the words of Eisenbeis and Kaufman (2007) the PCA procedures serve as “speed bumps” slowing down a bank’s deterioration and forcing the FDIC to become involved well before insolvency occurs.

The sanctions described in Table 1 include change in senior management, reduction in dividends, restriction on acquisitions and adoption of capital restoration plans. If the bank is a subsidiary of a financial holding company, the parent loses its status as holding company relative to the bank subsidiary. These sanctions are imposed at specific trigger capital ratios that define zones of capitalization. The first trigger at a 10 percent capital ratio moves the bank from the well-capitalized zone to the adequately capitalized zone. The last trigger at two percent moves the bank into the “critically under-capitalized” zone. In this zone the FDIC becomes conservator or receiver. Effectively, the bank is considered insolvent and the insolvency procedures described below apply.

**Table 1.** US Prompt Corrective Action (PCA) Trigger Capital Ratios and Provisions in different zones for capital ratios (Eisenbeis and Kaufman (2007))

<b>Zone</b>	<b>Mandatory Provisions</b>	<b>Discretionary Provisions</b>	<b>Risk Based Capital Ratio (%) Total</b>	<b>Risk Based Capital Ratio (%) Tier 1</b>	<b>Leverage Ratio (%)</b>
1. Well capitalized			>10	>6	>5
2. Adequately Capitalized	Brokered deposits only with FDIC approval		>8	>4	>4
3. Under-capitalized	Suspend dividends and mgmt fees; Require capital restoration plans; Restrict asset growth; Approval required for acquisitions, branching and new activities	Order recapitalization; Restrict inter-affiliate transactions, deposit interest rates, other activities	<8	<4	<4
4. Significantly Under-capitalized	Order re-capitalization; Restrict inter-affiliate trans-actions and deposit interest rates;	Conservatorship or receivership if bank fails to submit or implement plan to	<6	<3	<3

	pay of officers restricted	recapitalize pursuant to order: Zone 5 provisions if necessary to carry out PCA			
5. Critically Under-capitalized	Receivership or conservatorship within 90 days Receiver if still in zone after 4 quarters; Suspend payments on subordinated debt; Restrict other activities			<2	<2

Another feature of the PCA-procedures is that the trigger points are defined in terms of three different capital ratios. Two ratios are based on the Basel rules’ definitions of risk-based Tier 1 and Tier 2 capital. The third ratio is a simple leverage ratio defined as book value of tangible equity relative to total on-balance sheet assets. Each capital ratio is binding meaning that each ratio triggers intervention even if the trigger ratio has not been reached in terms of the other definitions. Table 1 shows the trigger ratios defining zones of capitalization and required actions by the FDIC and the bank.

#### US insolvency procedures

The FDICIA specifies a bank-closure rule that is triggered when a bank becomes “critically under-capitalized” at a leverage ratio of two percent. Within 90 days the bank must be declared legally insolvent, closed by the appropriate federal or state authorities and placed in receiver or conservatorship. The bank charter is revoked.

The reason for the two percent rules is that it provides a margin for a discrepancy between the market value and the book value of assets, and errors in valuation. Thereby the closure rule increases the likelihood that only shareholders will face losses. The risk of runs by creditors are reduced by this margin. In general capital turns out to be less than the book value. In fact, the market value of equity has on average been negative at the time banks have been legally closed according to Wall and Eisenbeis (2002).

After the closing of the bank (Step 1) the following steps are mandated by the insolvency procedures ;

Step 2: Prompt payment to of insured deposit even if the bank is not promptly reopened in Step 4 below.

Step 3: Prompt estimation and allocation of credit losses.

Step 4: Prompt reopening of large banks

Step 5: Prompt re-privatization and recapitalization

In step 1, depositors obtain immediate access to the insured parts of their deposits. Other creditors obtain access to their claims depending on their priority and the estimated value of credit losses as discussed in Step 4 below. The PCA procedures preceding insolvency implies that the FDIC should be able to make a conservative estimate of asset values quickly in Step 3. Based on these losses, pro-rata losses (haircuts) are allocated to claimants in order of legal priority. The FDIC stands in the shoes of insured depositors. After making these depositors whole, the FDIC shares in the losses with uninsured claimants.

The FDIC is required to manage the insolvency in order to achieve “the least losses to the deposit insurance fund. There is an exception when this objective could have serious systemic consequences. This “systemic risk exception” implies that an exception may be made for a bank considered “too big to fail.”

The legal closure of a bank need not imply physical closure in Step 4. In order to avoid liquidity losses for bank’s claimants, the FDIC can sell the insolvent bank, have another bank assume the claims on it or open a “bridge bank’ the day after the legal closure. This bridge bank would assume most or all of the assets of the failed bank at market value. The bridge bank provides time to find a buyer or to wind down the operations. Thus, “fire sales’ of the bank’s assets can be avoided. In general, all actions should be based on the objective of minimizing losses to the deposit insurance fund. This objective implies that the

conservator or receiver should aim to maximize the value of the assets and, thereby, take into consideration, for example, lack of liquidity and avoidance of "fire sales."

Although the minimization of liquidity losses of depositors and other claimants of the bank is not usually a deposit insurance function, liquidity considerations becomes important since they affect the likelihood of a bank run, The FDIC generally pays insured deposits up to the coverage amount at par the next business day.

Uninsured depositors and other claimants do not receive payments immediately but "receivership certificates". They are paid in order of their legal priority when assets of the bank are sold. However, the FDIC has the authority to make advance payments on the basis of estimated recovery amounts in order to avoid liquidity contagion to former counterparties. In the case when a bridge bank is set up, the estimated recovery value can be transferred to the bridge bank enabling it to make payments to uninsured depositors. Borrowers with credit lines also maintain access to these lines in the bridge bank.

Estimates of the recovery value of funds advanced tend to be on the conservative side because the FDIC must absorb the loss of overestimates. If the recovery values have been underestimated the FDIC makes additional payments when assets are sold. The FDIC in its capacity as receiver can borrow the necessary funds to make advance payments in its corporate capacity with access to the FDIC's accumulated fund.

In the words of Eisenman and Kaufman "the use of bridge banks should eliminate much of the fear of bank failures. It should permit efficient resolution of large banks without strong negative reactions by the affected depositors and having to invoke the idea that some banks are "too big to fail." Clearly, this statement seems overly optimistic in the hindsight of the current crisis,

As noted there is a legal requirement that insolvencies should be resolved at least cost to the FDIC. If asset values can be expected to fall in value during receivership, this requirement encourages rapid sales of assets. On the other hand, if low values depend on lack of liquidity in asset markets, the rule encourages the receiver to hold the assets until liquidity is restored.

In order avoid the dangers of political influences and forbearance on bank closure decisions a bridge bank is specified in law to exist for a maximum of two years with the possibility of three one year extensions. In Step 5, the whole or part of the bank should be sold to the private sector within this time frame unless all assets have been sold already. The sale must result in a bank that is adequately capitalized at a minimum.

In 2009 the FDIC managed the closure of more than 100 small and medium sized (by US standards) banks but the government focused on the recapitalization of the very large international banks like Citibank and Bank of America. Thus, the FDICIA procedures have not been tested on a very large bank, most likely out of fear that the banks are too large, complex and systemically important to resolve under the procedures at a time when the capacity of the system is already strained.

### ***The New Zealand approach***

The general approach of the New Zealand to banking regulation and supervision is reliance on market discipline. Rules with respect to information disclosure are implemented to strengthen the ability of depositors and other creditors to evaluate the risk associated with lending to a bank. If a bank is insolvent or likely to become insolvent it can be placed under statutory management and continue to operate while decisions are made with respect to allocation of losses and future ownership.

The New Zealand banking system is relatively concentrated and dominated by subsidiaries of Australian banks. The foreign ownership creates additional problems from the point of view of crisis management since integrated international banks may be able to shift assets and risk among subsidiaries. For this reason, New Zealand subsidiaries are required to be able to operate on a stand alone basis. One tool to achieve this objective is restrictions on outsourcing important functions to, for example, the foreign parent bank.

In case a New Zealand subsidiary bank is in distress the bank can be placed under statutory management. The statutory management powers are comparable with liquidation. "Haircuts" can be applied quickly on deposits and other claims before an insolvent bank opens within a day or two under statutory

management.<sup>15</sup> Crisis management capabilities are expected to be in place. However, there are no legally mandated procedures and principles for applying haircuts as in the US. Experiments have been conducted, however, on procedures for making decisions with respect to haircuts and for making funds available quickly. These procedures for what is called "Bank Creditor Recapitalization" have not yet been formally adopted. There is an awareness that the lack of formal rules for the legal and operational capability to deal with a large bank in crisis undermines market discipline by reducing the predictability of procedures and of the value of claims.

One specific study of resolution procedures for New Zealand is reported on in Harrison, Anderson and Twaddle (2007). The study puts particular weight on "pre-positioning" meaning that specific legal, operational and financial arrangements must be in place in order for resolution of a failed bank to be effective. The pre-positioning refers to the capability to implement procedures that look very much like the US FDICIA procedures described above. The following elements of pre-positioning are discussed:

1. Closure of insolvent bank
2. Reserve a portion of creditors' claims to meet potential losses (haircuts)
3. Next day release of remaining (non-frozen) claims in open bank under statutory management while the haircuts remain frozen.
4. Government guarantee of non-frozen claims

The pre-positioning involves the elements of the bridge bank in the US case. Legal capacity and legal powers must be clear, the operational capability must be in place even for a large complex bank and technological arrangements need to be worked out. The restrictions on out-sourcing of important functions of subsidiaries are intended to maintain technological and operational capabilities in New Zealand.

The pre-positioning of winding down procedures are also similar to FDICIA in the US. One additional element discussed is debt-equity swaps meaning that banks should be able to issue debt that automatically is transformed into equity in insolvency.

Although the proposed procedures for "Bank Creditor Recapitalization" in New Zealand are very similar to the US procedures there is a stronger emphasis on pre-positioning in the sense that legal, operational and financial capability must be in place at the time insolvency occurs. This problem may be larger in a small country with relatively few banks and fewer bank failures than in the US with thousands of banks and management of failures almost routine. The structured early intervention (PCA) procedures in the US also contribute to the readiness for dealing with an insolvent bank. New Zealand does not have similar procedures for structured early intervention with rules for increasingly severe constraints on a distressed bank in place.

## **7 Key issues for insolvency procedures**

In this section the key elements of insolvency procedures and their role in crisis management are summarized based on the discussion above.

### *a) The price and liquidity issue in securities markets*

Much of the implicit protection of banks' creditors is based on authorities' fears of contagion through the financial system as a consequence of a large bank's or a number of banks' distress. Contagion creating systemic risk occurs through runs, domino effects through payment and settlement systems, price effects of fire sales and liquidity effects in securities markets.

Minimization of the risk of runs is achieved by means of rapid closure of an insolvent bank and prompt re-opening of a "bridge bank" with funds available to insured depositors and funds minus haircuts available to non-insured claimants. The contagion through the payment and settlement systems is also made relatively small. Many observers argue that the more serious systemic effects of a large bank's distress occur as a result of fire-sales of assets which may create a vicious circle of price declines, the

---

<sup>15</sup> See Bollard (2004, 2005), Mayes (2004) and the Reserve Bank Act of New Zealand, 1989, p.117-125

need for additional sales in other banks leading to further price declines and so on. Liquidity in markets for important assets may also fall or disappear when banks are compelled to hoard liquidity and there is uncertainty about the solvency of many banks.

The price contagion is bound to occur well before a bank or bank becomes insolvent and made worse by rigid capital requirements. Procedures for Structured Early Intervention or Prompt Corrective Action in the US terminology make it possible to enhance the buffer role of capital. Thereby the need for fire sales is reduced. The prompt opening of a bridge bank after insolvency also contributes to a reduction in the supply of assets relative to a situation when a bank must be closed and assets liquidated.

Forbearance with a distressed bank may very well be the worst policy from the point of view of price and liquidity effects since the distress is not alleviated and, therefore, the bank must continue to economize on capital and hoard liquidity. Keeping so called Zombie banks in operation will contribute to and increase the duration of price and liquidity effects as long as there is uncertainty about the time it will take to restore bank capital completely. Legally mandated prompt procedures for both structured early intervention and the closing of banks and allocation of losses increase predictability and transparency. Thereby, the liquidity problem caused by uncertainty about a bank's solvency is alleviated.

*b) The valuation issue and mark-to-market accounting standards*

The difficulty of valuing an insolvent firm's assets generally prevent rapid resolution. For corporations this issue is less serious than for financial institutions. The insolvency procedures discussed above do not solve this issue but minimizes it by assessing minimum values based on which a preliminary allocation of losses can be achieved.

Mark-to-market accounting has no doubt contributed to the strength of the systemic risk caused by fire sales of assets and lack of liquidity in securities markets. On the other hand, mark-to-market accounting increases uncertainty about asset values. The risk-aware financial institution would therefore be induced to hold more capital under mark-to-market accounting than historical value accounting. Similarly, the risk-aware financial institution would take into account that asset prices may fall as a result of low liquidity in specific markets. The externalities caused by fire sales and lack of liquidity can therefore be reduced as well. This reasoning presumes a strong risk awareness in financial institutions. In other words, strong market discipline and credible lack of forbearance by authorities are required for mark-to-market valuation to induce financial institutions to hold capital against the risk of relatively unusual events.

The capital ratios triggering Prompt Corrective Action on different levels and legal closure of banks in the US are based on book values. Under marking-to-market accounting the book values would be market values. For example the simple leverage ratio would be equity capital relative to the total market value of assets.

*c) The trigger point for default*

The US procedures mandate that a bank must be closed when the capital ratio falls below two percent. Many observers in Europe argue that corporate law would not allow the closure of a bank before capital is exhausted. There are strong advantages to the US closure rule, however. If anything, an increase in the ratio that defines "critically undercapitalized" could be considered.

The advantage of having the trigger point for insolvency above zero is that it provides a margin increasing the likelihood that creditors will not have to face losses or only small losses. Thereby, the incentives for runs are weakened.

It can also be noted that the trigger point for insolvency cannot be based on the market value of a bank's equity since limited liability gives equity an option feature. The equity value can remain substantially positive even when the balance sheet equity is negative. This holds even under marking-to-market accounting.

*d) Rules vs discretion.*

US procedures for early intervention as well as for legal closure and receivership are legally mandated. It would be legally indefensible for the FDIC to apply forbearance. The legal mandate increases the predictability of actions and procedures for allocation of losses by reducing the discretionary power of the FDIC, the receiver and the bridge bank. Such predictability enhances market discipline by reducing the likelihood of implicit protection.

There are costs, as well, associated with legal requirements for intervention at specific points with specific measures. In a particular situation, the 'first best' regulatory intervention may very well be different from the legally mandated intervention. The ability to use discretion tends to increase the so called time inconsistency problem and undermine credibility of stated policies.

*e) The international dimension.*

As noted in the discussion of New Zealand, cross-border banking creates additional complexities in insolvency. Subsidiaries in host countries are formally separate legal entities but they are often de facto strongly functionally integrated with the home country bank. Nordea has an explicit strategy of functional integration across borders while operating in legally separate entities. The functionally integrated cross-border bank can shift asset and risk in various ways. Asset losses can be shifted to one country and risk can be shifted to countries where capital requirement and supervision is weak. Cross-border banking in "true" branches (without their own capital base) would reduce these incentives but it raises the problem that the host country supervisor lacks ability to regulate and supervise possibly systemically important banks.

One way of reducing the weight of these problems would be to clarify the distinction between subsidiaries and branches in such a way that a subsidiary is required to be functionally, as well as legally, separated while a cross-border branch is truly operated as a functionally and legally integrated unit. Nordea made plans in 2004 to re-organize itself into a Swedish bank with foreign branches. These plans met strong resistance from supervisors in the Nordic countries where Nordea operates. One reason is that conflicts of interest can arise in case Nordea becomes insolvent.

New Zealand's approach to cross border banking is, as noted, to require subsidiaries of foreign banks to functionally separate themselves substantially from the parent. Thereby, the likelihood that assets will "disappear" from a bank approaching distress is reduced and domestic resolution procedures can be applied.

Well-specified rule-based, home country insolvency procedures that prevent discrimination among claimants from different countries could enhance the acceptance in host countries of branches of foreign banks.<sup>16</sup> The EU Banking Directive envisions branch banking across borders within the EU under home country supervision but cross-border banking in subsidiaries dominates. The implementation of credible, rule-based insolvency law for banks in European countries can be viewed as a necessary requirement for the realization of the vision expressed in the Single Banking Act.

*f) Bank and non bank financial institutions*

The recent financial crisis has demonstrated that a large number of non-bank financial institutions can obtain the same degree of maturity transformation as banks. In other words, banks are no longer special but systemic risk arises in non-bank financial institutions as well as in banks. Thus, a special insolvency law for a group of financial institutions cannot be restricted to banks. If the insolvency law has the objective of enhancing market discipline and reducing systemic risk, it must be extended to cover all financial institutions with functionally similar activities.

---

<sup>16</sup> See Sgoldberg, Sweeney and Wihlborg (2005) and Lastra and Wihlborg (2007)



## **8 The Swedish 2000 proposal**

As part of the reform efforts after the Swedish banking crisis in the early 90s the government appointed a committee to analyze how to manage banks in distress. As in many other countries a bank in distress is treated in law as any other corporation. During the crisis it was found that general bankruptcy law does not provide appropriate procedures for closing an insolvent bank and to allocate losses. Reasons were discussed in Section 3 above.

The Swedish Committee delivered its proposal for managing banks in distress in 2000 (SOU 2000:66). The main thrust of the proposal is that a special Resolution Authority ("Krishanteringsmyndigheten") should be formed and this authority would have the main responsibility for Public Administration ("Offentlig Administration") of distressed banks. The objectives of creating procedures for Public Administration is to avoid systemic crises at low social costs and to enable restructuring of banks. Thus, the procedures substitute for laws with respect to bankruptcy and restructuring of corporations under some circumstances.

The responsibilities of the Resolution Authority relative to the Financial Supervisory Authority ("Finansinspektionen"), The Central Bank ("Riksbanken") and the Deposit Insurance Fund (Insättningsgarantinämnden) are discussed. The Committee makes proposals with respect to rules for placing a bank under Public Administration, legal consequences of placing a bank under Public Administration, objectives of Public Administration of distressed banks, and rules that apply for the Resolution Authority and the bank placed under Public administration. These rules include directives for the management of the bank, and for the Resolution Authority's rights to make decisions with respect to the bank's objectives, the composition of the bank's Board and management, the bank's organization, closure, and about the sale of the whole bank or parts of it. Among the legal consequences of Public Administration is the possibility of applying 'haircuts' to creditors' claims on the bank. Thereby, the procedures provide for the possibility to allocate losses to claimants while the bank continues to operate.

There are differences between the US rules under the FDICIA described above and the proposed rules for Public administration. One difference refers to the closure rule. While the FDIC must legally close a bank as soon as its book value of equity falls below two percent of total assets, the decision to place a bank under Public Administration would be left to courts which would consider Public Administration as one alternative to the application of standard bankruptcy if the bank is insolvent or if there is cause to recall the bank's charter rights. The Resolution Authority would make the judgment whether the Public Administration is appropriate; in particular from the point of view of protection against systemic risk consequences of the bankruptcy alternative. Thus, there is potentially greater scope for differential treatment of banks considered systemically important under the Swedish proposal than under the US rule. A second difference is the objective of Public Administration relative to the objective of the FDICIA procedures. The US law requires that all decisions with respect to the bridge bank, the sale of assets and the sale of the bridge bank are made with the objective of minimizing losses to the deposit insurance fund. The objective of Public Administration would be to reduce systemic risk consequences of a bank's distress as well as to enable restructuring of a bank. The objective of reducing costs to the deposit insurance system is taken into consideration, however, at the time the court approves the reduction of share capital as well as the reduction of creditors' claims (haircuts) on the bank in Public Administration. At this time the Board of the deposit insurance system ("Insättningsgarantinämnden") acts as one claimant representing the interests of the state. This board must approve (vote in favor of) the reductions in claims only if the reductions are expected to be to the advantage of the deposit insurance system.

Although the described mechanism for allocation of losses takes into account the interest of the deposit insurance system (and indirectly the tax payers), this interest is one of the interests that will be balanced in Public Administration. If the objective of Public Administration is the minimization of losses to the deposit insurance fund as in the US, the implication is that insured depositors contractually are considered the most senior creditors of banks. The proposed Swedish procedures are more comparable to American Chapter 11 bankruptcy procedures wherein contracts are abrogated and the objective of continued operations of firms is a primary objective. Such procedures lead to less contractual predictability and greater scope for shareholders and powerful creditor groups to retain a greater share of their claims. The objective of reducing systemic risk consequences also leaves a door open for creditor groups to obtain a greater degree of implicit protection.

An important principle for Public Administration as well as for the American FDICIA procedures is that the procedures should make it credible that all creditors will not be protected if a bank runs into financial difficulties. Thereby, implicit protection of creditors is reduced. To enhance the credibility of the reduced implicit protection the Public Administration procedures include the ability to stop payments contracted prior to Public Administration. The Resolution Authority would have the legal right to decide which payments would be stopped and which ones would not be stopped considering the systemic consequences of non-payments as well as the priority of claims. If some payments to some claimants are not stopped, other claimants should not incur losses as a result of stopped payments to them. The final payments to different creditors would be decided at the time losses are finally determined in the courts according to the procedures described above.

The ability of the Resolution Authority to stop some payments while allowing others to go through in the early stages of Public administration differs from the American procedures and the proposed New Zealand procedures where haircuts are applied immediately to various claims in accordance with the preliminary valuation of assets and the priority of claimants. The final payments to various claimants are then regulated when assets are sold or the bank is sold. According to the proposed Swedish procedures some systemically important payments would be likely to be paid in full immediately while losses are allocated at a later stage as described. Thus, it would seem like some uninsured claimants would not risk having to face losses at all.

The potential advantage of the proposed Swedish procedures would be that all systemically important claims would be paid in full. The potential disadvantage would be that the Resolution Authority in fear of contagion would be very reluctant to stop payments even if their systemic consequences may be small. The Resolution Authority would be bound by pre-determined rules to a lesser degree than the receiver in the US system and the proposed New Zealand statutory management authority. Thus, the scope for implicit protection would be greater under the proposed Swedish procedures.

One aspect of the Swedish proposal is that it allows a degree of pre-positioning of legal and operational capability for dealing with systemic threats to the banking system. The Resolution Authority would be in continuous existence and have readiness to deal with a bank in distress. It would have access to information from the Financial Supervisory Authority and the Central Bank at any time. Thereby, micro-, as well as macro prudential information would be available to the Resolution Authority.

Missing from the Swedish proposal is "structured early intervention" beginning as soon as a bank becomes less than well capitalized. Such procedures managed by the Resolution Authority or with its involvement would both reduce the likelihood that Public Administration becomes necessary and the readiness of the Authority to resolve a bank's distress.

## **9. The need for complementary reforms of financial regulation.**

Effective procedures for dealing with banks in distress by means of structured early intervention and a *lex specialis* for insolvency of banks and similar financial institutions are no panacea offering optimal risk-taking incentives and the prospect of no financial crisis. The procedures can strengthen market discipline on risk-taking and reduce the risk of systemic crisis but they must be viewed as one part in the financial regulatory structure. Even if they make it possible for even large banks to fail it takes time for the procedures to gain credibility and implicit protection of large financial institutions to diminish. Cross-border banking implies that effective procedures must be implemented in many countries for credibility of lack of implicit protection to be achieved. Contagion through price and liquidity effects in securities markets remain a threat to the financial system.

Other aspects of the financial regulatory structure that would complement distress resolution procedures and enhance the credibility of the procedures are the following:

- (i) The "too big to fail" argument for implicit protection of banks' creditors remain a major concern even with the best of insolvency procedures in place. One way to address this issue is to link capital requirements to potential contagion effects of a bank's failure and, indirectly to the degree of indirect subsidization. Bank size relative to a certain market may be a crude but

- useful proxy but the nature of a bank's interconnectedness could also be taken into consideration (European Shadow Financial Regulatory Committee, 2009a)
- (ii) Higher capital requirements and potentially higher capital ratios triggering increasingly harsh constraints on financial institutions (as compared to current US PCA rules) to compensate for potentially very large losses in asset values in a very short time (European Shadow Financial Regulatory Committee, 2009a).
  - (iii) Greater flexibility in minimum capital requirements to restore the buffer role of capital and to reduce pro-cyclicality of capital requirements. Structured early intervention at trigger capital ratios contribute to such flexibility (European Shadow Financial Regulatory Committee, 2009b, and Brunnermeier et al 2009).
  - (iv) Mandatory subordinated debt or mandatory debt that converts to equity at a low capital ratio to enhance the credibility of the existence of creditors that are not offered implicit protection (US Shadow Financial Regulatory Committee, 2000, Flannery, 2005, and Östrup, 2007).
  - (v) Capital insurance as suggested by Kashyap, Rajan and Zingales (2008) for banks to be able to increase equity contingent on large losses in asset value.
  - (vi) Capital requirements could take into account liquidity risk by linking capital requirements to the maturity mismatch and, thereby, discourage long term positions being financed with very short term financial instruments (Brunnermeier et al, 2009). Liquidity risk in the financial system cannot be reduced by the requirement that a certain share of all assets must be liquid since banks approaching the liquidity ratio must sell assets and contribute to reduced liquidity in the financial system as a whole (Brunnermeier et al 2009).
  - (vii) Clear and transparent valuation standards for assets based on mark-to-market valuation to the extent possible and clear standards for valuation of assets that are not traded.
  - (viii) The resolution of cross-border banks according to bank insolvency law could be made possible without political intervention to defend national interest if banks were required to operate cross border in entities that both legally and functionally are either subsidiaries (under host country jurisdiction) or branches (under home country jurisdiction) .
  - (ix) The central bank as a lender of last resort remains important but this function should not be used to subsidize too big to fail financial institutions.

## **10 Conclusions**

The recent crisis has led to a re-evaluation of the channels of contagion that may create systemic risk in the financial system. In particular, contagion through price changes on securities and liquidity in markets for securities have been emphasized by several economists while the more traditional contagion through payment and settlement systems have become less of a threat as a result of innovations in these systems. The emphasis on price and liquidity contagion has implications for the financial regulatory framework as a whole (summarized in Section 9) as well as for procedures for dealing with financial institutions in distress.

Systemic liquidity problems can arise when financial institutions are induced to hoard available liquidity out of fear that funding in the market may not be available when needed and as a result of uncertainty about the soundness of each financial institutions trying to borrow funds in the market. The consequences of these liquidity problems are likely to be more severe the longer the time the "clean-up" of the system is expected to take. Prompt and predictable procedures for resolution of distress would mitigate this problem.

A second implication of the new view of systemic risk is that special insolvency law may have to cover non-bank financial institutions as well as banks. A third implication is that flexibility in the required capital ratio can reduce the need for fire sales of assets. "Structured early intervention" prior to insolvency along the lines of Prompt Corrective Action procedures is one way of achieving such flexibility while reducing the probability that a financial institution will reach the default point. Fourth, principles for valuation of assets must be transparent and clear since they affect points of intervention and insolvency. Fifth, insolvency procedures need to be specified with one objective being to minimize the asset price effects and market liquidity effects of one institution's default. Sixth, it must be recognized that the procedures for dealing with a financial institution in distress affect the incentives for risk-taking and liquidity planning (including mismatch of maturities) prior to insolvency. Similarly, valuation principles affect these incentives. For example, mark-to market accounting is associated with greater risk of

insolvency as well as liquidity problems at a given capital ratio and maturity mismatch. Greater awareness of these potential threats to a financial institution would reduce the likelihood that price and liquidity externalities will have serious systemic consequences.

After a description of the procedures for distress resolution in the US and proposed procedures for New Zealand a number of specific issues that must be addressed in a special insolvency law for banks and similar financial institutions were summarized in Section 7. These issues will not be repeated here. Thereafter, the Swedish proposal for resolving banks in distress was compared to the procedures in the US in particular.

The Swedish proposal includes the creation of a special and permanent Resolution Authority for banks. The creation of a resolution authority does not in itself reduce the likelihood of bail-outs and implicit protection. The likelihood may actually increase if the resolution authority is given a large amount of discretionary power with few legal constraints. An important concern in an evaluation of the Swedish proposal is, therefore, whether the Swedish proposal provides sufficient legal constraints on the actions of the Resolution Authority.

In a comparison with the US procedures there is potentially greater scope for differential treatment of banks considered systemically important under the Swedish proposal than under the US rule. There is also less contractual predictability and greater scope for shareholders and powerful creditor groups to retain a greater share of their claims. The discretionary power that the Resolution Authority would obtain raises the possibility that it--in fear of contagion-- would be very reluctant to stop payments to claimants even if their systemic consequences would be small. Thus, it is not clear that the proposed Swedish Resolution Authority would substantially reduce the likelihood that a large bank would be allowed to fail with consequences for large creditor groups. A substantial reduction in implicit insurance of creditor groups would most likely not become a reality until the Resolution Authority has demonstrated its willingness to impose costs on banks' creditors. Unfortunately, such a demonstration would have to await another banking crisis.

## **References**

1. Adrian, T. and H.S. Shin (2007). "Liquidity, Financial Cycles and Monetary Policy," in *Current Issues in Economics and Finance*, Federal Reserve Bank of New York, Vol. 14, No 1
2. Angkinand, A. and C. Wihlborg, 'Bank Insolvency Procedures as Foundation for Market Discipline' in Caprio, G., D. Evanoff and G. Kaufman (eds) *Cross-border Banking*, World Economic Publishers, 2006
3. Avgouleas, E., C. Goodhart and D. Schoenmaker (2010), "Living Wills as Catalyst for Action", Duisenberg School of Finance, DSF Policy Paper, No 4, February.
4. Bollard, A. (2004). "Systemic Financial Crisis; Resolving Large Bank Insolvencies" *Reserve Bank of New Zealand Bulletin*, Dec., Vol. 67, No 4
5. Bollard, A. (2005), "Bank Regulation and Supervision in New Zealand; Recent and Ongoing Developments", *Reserve Bank of New Zealand Bulletin*, June, Vol. 68, 2
6. Boot, Arnoud W. A.. 'Supervisory Arrangements, LOLR and Crisis Management in a Single European Banking Market' Conference Paper, Federal Reserve Bank of Chicago, Oct 5-6, 2006
7. Brunnermeier, M., A. Crocket, C. Goodhart, M. Hellwig, A. Persaud and H. S. Shin (2009), *The Fundamental Principles of Financial Regulation*, Geneva Report on the World Economy, 11, Jan. 6
8. Brunnermeier M and L. Pedersen, "Market Liquidity and Funding Liquidity" *Review of Financial Studies*, 2009.
9. Campbell, Andrew, 'Issues in Cross-Border Bank Insolvency: The European Community Directive on the Reorganization and Winding Up of Credit Institutions' in *Current Developments in Monetary and Financial Law*, Vol. 3, International Monetary Fund, Washington DC, 2003.
10. Cochrane, J. N. (2009), "The Financial Crisis and Policy," Presentation at the Cato Institute, New York, Nov. 5
11. Cochrane, J. and L. Zingales (2009), "Lehman and the Financial Crisis", *The Wall Street Journal*, Nov. 15
12. Cohen, William (2008), "Why Wall Street has to Alter its Incentives" *Financial Times*, March 17
13. Eisenbeis, Robert and George Kaufman (2007), 'Cross-Border Banking: Challenges for Deposit Insurance and Financial Stability in the European Union', in Benink, H., C. Goodhart and R.M.

- Lastra (eds), *Prompt Corrective Action and Cross-border Supervisory Issues in Europe*, FMG Special Paper 171, London School of Economics
14. European Shadow Financial Regulatory Committee, 1998, 'Resolving problem banks in Europe', Statement No 1, London
  15. European Shadow Financial Regulatory Committee, 2009a, "The Financial Crisis and the Future of Financial Regulation," Statement No. 28, London, January 19
  16. European Shadow Financial Regulatory Committee, 2009b, "Letter to the G20", Statement No. 30, Warsaw, September 21
  17. Federal Deposit Insurance Corporation Improvement Act (FDICIA), 1991
  18. Flannery, M. (2005), "No pain, No Gain? Effective Market Discipline via Reverse Convertible Debentures," Ch 5 in H.S. Scott, ed., *Capital Adequacy Beyond Basel: Banking, Securities and Insurance*, Oxford University Press, Oxford
  19. Goldberg, Lawrence, Richard. J. Sweeney and Clas Wihlborg, 2005, 'Can Nordea show Europe the way?' *The Financial Regulator*, Vol 10, No 2, Sept
  20. Goodhart, Charles (editor), *Which Lender of Last Resort for Europe*, Central Banking Publications: London, 2000.
  21. Group of Thirty (2003:2)
  22. Harrison, I, S. Anderson and J. Twaddle (2007), "Pre-positioning for Effective Resolution of Bank Failures, *Journal of Financial Stability*, Vol. 13, No 4, pp 324-341
  23. Herring, Richard, 'International financial conglomerates; Implications for bank insolvency regimes', Financial Institutions Center, The Wharton School, Working Paper, 2004
  24. Huertas, T.F. (2007), "Dealing with Distress in Financial Conglomerates," in Benink, H., C. Goodhart and R.M. Lastra (eds), *Prompt Corrective Action and Cross-border Supervisory Issues in Europe*, FMG Special Paper 171, London School of Economics
  25. Krimminger, Michael, 'Deposit Insurance and Bank Insolvency in a Changing World: Synergies and Challenges', in *Current Developments in Monetary and Financial Law*, Vol. 4, International Monetary Fund, Washington DC, 2005.
  26. Hüpkes, Eva, 'Insolvency – Why a Special Regime for Banks', in *Current Developments in Monetary and Financial Law*, Vol. 3, International Monetary Fund, Washington DC, 2003.
  27. Kashyap, A.K., R.G. Rajan and J.C. Stein (2008), "Rethinking Capital Regulation", Symposium on Maintaining Stability in a Changing Financial System, Federal Reserve Bank of Kansas City, Aug. 21-23.
  28. Lastra, Rosa, *Legal Foundations of International Monetary Stability*, Oxford University Press, 2006.
  29. Lastra, R. and C. Wihlborg (2007) "Law and Economics of Crisis Resolution in Cross-border Banking" in Benink, H., C. Goodhart and R.M. Lastra (eds), *Prompt Corrective Action and Cross-border Supervisory Issues in Europe*, FMG Special Paper 171, London School of Economics
  30. Llewellyn, D. T. (2010), "A Framework for Crisis Prevention and Management: Where is Pillar 4?" paper presented at Annual Colloquium of the Belgian Financial Forum, Nov. 10. Working Paper, International Centre for Financial Regulation, London.
  31. Mayes, D. (2004), "Who pays for Bank Insolvency" *Journal of International Money and Finance*, Vol 23, pp 515-551
  32. Mayes, David and Aarno Liuksila (eds.), *Who Pays for Bank Insolvency?* Hampshire and New York: Palgrave, MacMillan, 2004..
  33. Reserve Bank of New Zealand Act, 1989
  34. Schiffman, H. (1999), 'Legal Measures to Manage Bank Insolvency' in R. Lastra and H. Schiffman (eds.), *Bank Failures and Bank Insolvency Law in Economies in Transition*, Kluwer Law International, The Hague
  35. Statens Offentliga Utredningar (2000), "Offentlig Administration av Banker, Stockholm, SOU 2000:66.
  36. U.S. Shadow Financial Regulatory Committee (2000), *Reforming Bank Capital Regulation: A Proposal by the U.S. Shadow Financial Regulatory Committee*, Statement No 160, American Enterprise Institute, Washington, DC.
  37. Wall, L.D. and R.A. Eisenbeis (2002), "Reforming Deposit Insurance and FDICIA?" *Economic Review*, Federal Reserve Bank of Atlanta, First Quarter, pp 1-16.
  38. Wihlborg, Clas and Shubhashis Gangopadhyay with Qaizar Hussain, 2001, 'Infrastructure requirements in the area of bankruptcy' *Brookings-Wharton Papers on Financial Service*
  1. Östrup, F. (2007), *Finansielle kriser*, CBS Press, Copenhagen