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*Problem Bank Resolution:
Evaluating the Options*

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98-05-B

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*The Working Paper Series is made possible by a generous
grant from the Alfred P. Sloan Foundation*

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October 1998

A Paper Prepared for the Annual Financial Management Association Meetings, Chicago, Illinois, October 15 - 17, 1998

I. Introduction

The banking systems in too many countries are insolvent; whether one looks at Japan, Malaysia, Thailand, Korea, China or Russia, the same situation is uncovered. Bank balance sheets have weakened, and there are real questions about the solvency of the entire system. At first, regulators and policymakers do not want to look, hoping that time will redress the ills and raise the value of troubled assets. However, in most cases, they come to recognize the obvious - some sooner than others. When this time comes, the regulator looks first for causes then for scapegoats, but eventually they look for answers. They slowly recognize the need to resolve their financial structure problems. This point, they are frequently offered expert advice, but rarely offered a survey of the full range of alternatives. They are often offered vague references to past experience, but they are rarely offered a full review of the recent relevant experience. This is the goal of the present paper.

Here, we look at the various options available to deal with problem institutions and evaluate their usefulness. Beyond enumeration, and a theoretical description we present a realistic analysis of the set of options that are available, and have been available to bank regulators. Then, we examine how they have been employed in three cases in the past from different parts of the world.

The result of the effort is not a simple prescription, however. We will show that there are a series of remedies for problem institutions, each with something to recommend it and problems associated with its use. In the end, the regulator has to weigh many factors before choosing an optimal path in his own environment. He must select from the choices available given the circumstances at hand. Yet, knowing what can and has been done, plus what the likelihood of success depends upon ought to aid us all in understanding both the past and the future paths of bank resolution.

I.1 The Role of Institutions In the Financial Sector

The discussion of bank crises and options for resolution can not begin without a recognition of the perceived importance of the banking sector to policymakers and economists alike. One worries about bank problems because banks are viewed by both of these groups as warranting special attention.

The current view of the role of these intermediaries is that they serve two primary functions that are essential for the smooth operation of an aggregate economy. First and foremost, they are generators or creators of assets. These assets are obtained from either the government, to finance deficits, or from the private sector. In the latter case, they are expected to screen the set of borrowing opportunities presented to them, using an expertise and specific-capital that is unique this sector (Diamond (1984), and Bhattacharya and Thakor (1993)). Projects found worthy are financed and monitored until repayment. This second phase of the lending function, on-going servicing and monitoring, is critical for a number of reasons. First, once the loan is made, it is frequently illiquid and difficult to value without substantial effort (Gorton and Pennacchi (1990)). Second, such oversight by firms who are responsible for financing the investment project often leads to higher returns from the endeavor, as investors respond to on-going monitoring by increasing effort and closer adherence to the proposed purpose of the loan (Allen and Gale (1988)). In both cases, the existence of a monitoring institution improves the performance of the project returns accruing to the stakeholders of the intermediary itself.

The second function of the intermediary sector is the channeling of savings resources to a higher purpose. This is achieved in two distinct ways. For transaction balances, the financial sector has developed the capacity to use idle balances, even while the payment system functions efficiently. From the perspective of the institution, it provides depository services in order to finance the lending activity outlined above. Yet, the fact that financial institutions are central to the clearing process suggests a need for regulatory concern and oversight, viz., the integrity of the payment system (Goodfriend (1989)). For standard savings balances, return

must warrant risk and delayed consumption. The institution offers standard financial assets to the public which must be priced to permit a positive return for deferred consumption.

As an intermediary, the financial institution provides both of these functions simultaneously, i.e., it makes loans and assumes liabilities. In fact, it often does so with assets that have maturity lengths that differ substantially from the average maturity of its liabilities. In so doing, the standard asset transformation function includes maturity transformation, as well as resource mobilization. While these can be viewed as mostly complimentary services, at times the use of relatively liquid liabilities to finance illiquid and longer-term risk assets generates an inherent instability in the system (Diamond and Dybvig (1983), and Gorton (1988)). Yet, it is central to providing the economy its value-added activity of mobilizing savings assets into productive real investment.

I.2 The Instability of the Sector

Given the above description of functions performed by the sector, it should be transparent that some regulatory oversight of this sector is appropriate. Financial institutions are structurally vulnerable because they finance the holdings of direct claims that can be valued only imperfectly with short-term liabilities that are viewed as redeemable at par. In addition, they provide the valuable service of maturity transformation, which is mutually beneficial to borrowers and savers, but which may, nonetheless, place the financial institution itself in jeopardy. See Kareken and Wallace (1978), Jacklin (1987), and Santomero (1992). In addition, marketability and valuation are likely to be fundamental characteristics of most of the direct claims held by these institutions. Therefore, holders of their claims (liability holders) cannot readily evaluate the solvency of the institutions by affirming that the market value of its assets exceeds the promised value of its aggregate liabilities.

Nonetheless, depositors and many other liability holders place funds in these institutions fully expecting to be able to withdraw them whenever they choose. In most circumstances, their withdrawals are purely random and statistically predictable. However, if liability holders become concerned about the solvency of the institution, withdrawals may become systematic and jeopardize the liquidity and solvency of the entire industry (Gorton (1988), and Jacklin and Bhattacharya (1988)).

Runs, once begun, tend to be self-reinforcing. News that the depository institution is selling direct claims at distressed prices or is borrowing at very high rates will further undermine the confidence of current and potential depositors. Even those who believe that, with sufficient time, the financial institution would be able to redeem all of its liabilities, have a motive to join the run. They have reason to fear that the costs from the hurried liquidation of direct claims in response to the run by other creditors might render such an institution insolvent. This is the story that Diamond and Dybvig (1983) relate so forcefully.

This vulnerability to runs is more than the strictly private concern of an individual depository institution and its customers. It becomes a public policy concern when a loss of confidence in the solvency of the sector or many of its members leads to a contagious loss of confidence in other institutions. This will destroy not only the specific capital of the institution under pressure but also diminish the capacity of the financial sector to fund economically viable projects and monitor them to a satisfactory conclusion (Bernanke and Gertler(1989;1990)and Gertler(1988)). This is a particularly serious problem when there are a few large institutions with national or international franchises. The larger the institutions, the greater the likelihood

that the failure of any one will attract public attention and undermine confidence in the financial system in general, and in other similar large financial institutions in particular.

I.3 The Financial Safety Net

It is for this reason that regulators everywhere have chosen to establish a mechanism to address the problem of weakness in the financial institution sector. The financial safety net, an elaborate set of institutional mechanisms for protecting the financial system, has been constructed, which has largely succeeded in preventing contagious runs in the financial sector. Through this mechanism, most countries have developed a regulatory structure that prevents the amplification of shocks through the financial system. This safety net can be viewed as a set of preventive measures that can and should be triggered at various stages in the evolution of a financial crisis.

However, the safety net has worked only moderately well over the past half century. The chartering and prudential functions, so key to the integrity of the financial sector have been responsible for maintaining a reasonably good reputation for the sector as a whole, worldwide. While crises of confidence occasionally arise, they are the noted exception, not the rule. Likewise, since the 1930s remedies aimed at the last stages of contagion control, the lender of last resort function and the monetary neutralization of a crisis, have been largely successful.

Regulators and policymakers have had less success in dealing with a situation when a large institution or the industry as a whole is faced with a solvency crisis. Some regulators have been successful in navigating through these waters, closing troubled institutions early and

containing a solvency crisis to a subset of the industry. All too often, however, when problems are the result of anything more than idiosyncratic behavior on the part of one entity, the record has been decidedly mixed. Sectors have fallen victim to contagion; governments have been left with large bills; and the institutional structure has been badly damaged.

This is in part due to the political nature of the process, but it is also due to lack of clear understanding of the options available. All too frequently, policy is made on limited information and great pressure by special interests - hardly a recipe for optimal policy choice. It is for this reason that a review of the options available for problem bank resolution may prove helpful.

II. Options Available For The Resolution of Problem Institutions

We will consider the case where a regulator finds a single institution in trouble, as well as when the entire structure of financial institutions is weakened. These situations nearly always are the result of a sudden decline in the value of capital associated with a precipitous decline in asset value. In such a case, the regulatory authority has to resolve a situation of a troubled institution or institutions with little or no capital. What are the choices facing the regulator in this situation? And, how do the circumstances surrounding the crisis effect the outcome?

II.1 Understanding the Conditions Associated With Resolution Options

To answer these questions, this section begins by evaluating the generic answers, and goes on to a finer, more detailed list. At the outset, however, two points warrant mention. First, it is not at all clear that the selection of the appropriate resolution option is related to the cause of the crisis. Second, the choice selected probably does depend on the breadth and depth of the problem. While more will be said about this below, these two points warrant early attention.

We take as given that the choice of the resolution mechanism should be made based upon the minimization of the social cost of the financial sector problem at hand. As such, the regulator must recognize that the solution sought is aimed, not at the cause of the bank solvency itself, but on its effect on the financial structure. To large measure, the cause of the crisis is irrelevant; it is a matter for historians, lawyers, and politicians, not economists. The latter ought to look for the optimal regulatory response to a hampered institutional structure. Their interest should rest on how to assure a return to *status quo ante*, i.e., an environment in which needed investment capital flows to the highest bidder in a relatively efficient manner, and savers regain their confidence in the system. Their role should not be one which attempts to impose penalties on the institutions or the managers involved. Nor, should it necessarily be to renovate the workings of the system. This can be left to a latter time.

Nevertheless, it should be recognized that any specific action which is taken will have repercussions. As the regulator addresses the current problem situation, he is sending clear signals to the market. In short, he is informing market participants as to the likely resolution option which will be used next time a crisis arises and building expectations into the system. In this regard, therefore, actions taken today will affect the workings of the system tomorrow, by affecting expectations and in defining the expected cost of failure for the next cycle.

The second point mentioned above relates to the scale of the problem to be addressed. Often economists are quick to argue that failure should have a rapid and brutal response. Failed private institutions should pay the private penalty for default. However, while this result may be viable in theory, it is never employed in practice. In reality, the options open to the regulator will depend not only on the state of the institutions involved, but also on the state of the industry and the broader financial market itself.

Resolution options open to an isolated failure of a single institution are different than those available to the regulator when facing systemwide failure, or the collapse of a whole market. This is true for at least two reasons. First, if the institution is part of a collapsing financial system, the reasons for establishing a safety net in the first place become critical. The

regulator has no interest in closing the entire banking system because of a financial collapse or a sectoral decline which renders capital ratios negligible or indeed negative. The resultant cost of such a move, in terms of investment disruption and consumer confidence, is in all likelihood far larger than the regulatory process would tolerate, to say nothing of the political costs attendant to such a crisis. Likewise, given the systemic nature of a problem, which could wipe out an entire sector, it is not at all clear that the immediate liquidation of financial assets to satisfy creditors is an appropriate strategy. Firesale prices, large bid-ask spreads, and the virtual lack of bids are common elements of a mass liquidation. The regulator accomplishes little by adding to the frenzy.

This having been noted, systemic problems must be addressed. No central bank has the capacity, nor should it have the authority to sustain a bankrupt structure indefinitely. The issues that arise must be addressed and a resolution achieved. We are all too familiar with banking systems that remain bankrupt for long periods of time. The inevitable result is neither efficient funding of capital projects so central to growth, nor a stable depository structure in which depositors have confidence. The result is inefficiency, distrust, and subsequent collapse.

II.2 Enumeration of Options

With this as a starting point let us look at the generic options available for problem resolution. At their core, there are only three: (a) permitting continued operation under some restrictions, (b) forcing a merger with another institution or (c) closure of some form. Let us examine each in turn.

a) The Continued Operations Options

The obvious first option is to allow the institutions to operate in spite of its hampered financial condition. The determination of whether a bank will be permitted to continue as distinct institution, however, is dependent upon a number of factors, including the health of its balance sheet, public attitudes toward continued operation, and regulator's view of the likelihood of acceptable long-run performance. The ideal resolution for a problem situation is

the return to strong financial performance and solvency. Regulators may use the tools of forbearance and even provide a capital infusion towards this end. However, the goal must be in sight, that is to say that this option may not be efficacious if the initial condition of the institution or institutions involved is severely troubled or the conditions result from a severely weakened asset base.

A somewhat more harsh remedy may take the form of continued operation with some form of regulatory control and management. This action is taken when it is thought that current management cannot orchestrate a turn around. Regulatory control is generally viewed as a temporary measure, along the way to either liquidation or merger. Regulators are usually considered to be caretakers, as they do not generally have the skill or staffing to maintain management control indefinitely.

Extreme financial stress may prompt the government to provide a rescue with a substantial capital infusion. At the limit such an action is tantamount to *de facto*, if not *de jure* nationalization. This is undertaken when the institution is considered to be of such critical importance to the financial system that its continued functioning is a matter of national urgency. Even if this is the case, nationalization is only undertaken when other avenues are closed and national sentiment does not preclude this option.

b) The Merger Options

A next best solution from the standpoint of the long-term corporate viability, which also retains some of the bank's franchise value, is a merger with another hopefully healthier institution. However, merger of this form frequently requires enhancement of the balance sheet in order to entice prospective partners. This may range from partitioning of assets, so that only some are transferred to the acquiring entity, all the way to the partitioning of the entire bank, in the form of a good-bank, bad-bank split. Both measures are essentially forms of purchase and assumption. The real distinction is how much of the old entity can be transferred to the new organization.

c) Payout Options

Regulators may ultimately conclude that liquidation is the most efficient, indeed the only, solution. However, this choice is usually made only after the going concern value of the entity is considered and weighed against the taxpayer cost of maintaining the surviving firm. In the event this decision is taken, there is still the issue of which class of liability holders share in the associated loss. The tallying of total cost must incorporate a decision as to which depositors should be and which will be reimbursed. If the country possesses explicit deposit insurance, only a decision concerning uninsured depositors is needed. In other jurisdictions *de facto* implicit insurance leaves the issue of coverage and co-insurance to the regulator, in conjunction with the political process. Lastly, a plan for the disposal of assets must be determined.

II.3 Complete List of Options Available

The choices are, however, a bit richer than this enumeration would suggest. There are several ways to continue operations, to force a merger, or to liquidate. We consider seven options below that have been employed around the world. The commentary illustrates that many also have sub-options.

a) Forbearance

An institution which is experiencing financial distress may be able to resolve its problems if given time. The granting of time for a management turn-around, the orderly disposal of problem assets, and/or the generation of positive profits against which to charge off losses is defined as forbearance.

As this suggests, forbearance can occur for two separate reasons. Either the firm is thought to be bankrupt but the timing of the liquidation is deferred for market reasons, or the firm is perceived as salvageable if given enough time to recover from an unexpected and large

loss. In the first case it is sometimes alleged that immediate liquidation of assets is not possible in the real world. It is argued that pressure to liquidate assets can lead to returns which do not reflect fair market value. Therefore, to achieve maximum return an institution is given leeway to liquidate its assets as favorable bids are received. However, the institution is viewed as managing to liquidation, rather than solvency.

The success or failure of forbearance to achieve true financial recovery can often hinge upon the diligence and/or flexibility of regulatory monitoring. Monitoring can be passive or active. In the passive mode, bank management is allowed the freedom to pursue its own means and strategy of turn-around, as long as risk exposure is considered reasonable by regulators. Active monitoring entails management submitting a strict plan for recovery and being closely watched for adherence. Some circumstances warrant substantial oversight, while others deserve a greater degree of flexibility.

Various mechanisms can be used in support of forbearance. Small cash flow problems can be ameliorated by allowing access to central bank funding, using either direct borrowing lines or refinancing vehicles. Lines of credit drawn on the central bank, or arranged by it through private sector institutions, are another approach that has been employed. Such arrangements usually come with implicit government guarantees along with promises of further capital infusion or deposit backing if financial condition deteriorates. Kryzanowski and Roberts (1993) attribute this method as allowing many insolvent Canadian banks time to regain their health in the period from 1922 to 1940. The same could be said for First Pennsylvania in the US, or Nordbanken in Sweden over different periods of time.

A strong argument against forbearance is based upon the management moral hazard argument. This line of reasoning raises relevant concerns both for the assisted institution and for the signal such actions send to other solvent institutions. If a troubled bank is insolvent and is aware that a further government bailout is an option, management may feel that it has nothing to lose by further increasing risk in the hope of achieving solvency. It may then invest in high risk strategies at the expense of its government guarantor. This attitude has often

resulted in subsequent higher closure costs, and is frequently been associated with the thrift crisis in the US. For this reason regulators are wary of forbearance and usually implement it only in combination with strict monitoring.

b) Capital Infusion With Existing Management

Many of the arguments put forth for forbearance also extend to favoring direct capital infusion to hampered institutions. According to proponents of this approach, frequently it is the case that a bank's insolvency is not the fault of current management, or may be easily correctable by an accounting recognition of the problem. Current management may be able to regain solvency with forbearance and a sufficient capital infusion provided by the government authorities. In this way it is allowed to put its problems behind it and have its coffers replenished.

Infusion may take many forms including increased access to the discount window, loan guarantees, and direct loans. However, the real need is to raise capital. Toward this end, the bank may attempt to raise capital through equity or debt offerings with government guarantees lowering the required interest rate. Alternatively, the government may directly provide the institution with the needed capital as has been done in both the US and Western Europe. However, prudent use of capital infusions is advisable because competitors may rightly view it as a subsidy, and subsequent privatization and/or liquidation may prove difficult.

c) Regulatory Control

Problems may be so severe that regulators do not think current management is capable of turning things around. This may be attributed to the severity of condition, a lack of faith in management competence, or concerns as to possible malfeasance as a cause of the problem being addressed. Once regulatory control is decided upon, authorities must decide whether to personally manage or delegate responsibility. In the first case government employees take on the role of management, while in the second outside experts are hired to provide these services. The latter, while preferable, is fairly expensive and, again, leads to problematic incentive issues.

New management derived from the banking industry is the preferred method as it is commonly thought that bureaucrats should not be in the business of day-to-day bank operations, following the usual comparative advantage arguments. In any case, it should be clear that regulatory control is not a permanent solution. The goal is to return the bank to health or enough so to attract a merger candidate.

d) De Facto Nationalization of the Institution

Balance sheet problems may be so severe that none of the previous solutions are capable of leading to a satisfactory outcome. A major capital infusion may be required, or buyers are in short supply. In such a situation an offering may still proceed with the government guaranteeing purchase of unsold shares. However, in this case, despite its intent, the government may well end up with a controlling interest. In such a case, the bank is in fact and in law an extension of the state. It is a nationalized institution. Minority interest is of little consequence.

Use of this method of financial rescue of a troubled bank is often country dependent. Countries such as the United States find this solution philosophically unpalatable, although they have come close on several occasions. Others, most notably in Western and Southern Europe have been traditionally more comfortable with nationalization.

Opponents argue that a nationalized bank may evolve into an arm of government economic policy. With this comes incentive problems. As major shareholder, the government may not be able to require that the bank be efficient and profitable. Bank workers may essentially become bureaucrats and the institution unable to compete without continued government indulgences. Indulgences then may lead to the expectation that the bank carry out political objectives. France using *Crédit Lyonnais* to bolster national employment is a case in point.

Once nationalized, an institution can be difficult to privatize. A bank that has been protected from the market grows inefficient and may be unable to survive without government help. Prospective equity owners will find valuation difficult and should be wary that their

investment may be wiped out by future re-nationalization or restrictions on new management's ability to rationalize the firm's operations.

e) Good-bank, Bad-bank Split

In the 1980s, another method of problem resolution emerged, known as a good-bank, bad-bank model. This method has been employed several times since and is often viewed as a mechanism to be used in preparation for future merger. Essentially, the bank is divided into two parts. The good-bank retains performing assets, while non-performing assets are transferred to a bad-bank shell. The rationale is that the good-bank can now operate more efficiently and raise capital with greater ease and at lower rates. The bad-bank can then direct all of its efforts at loan recovery and self-liquidation. Funds recovered from problem loans are channeled into dividends and/or interest payments to shareholders of the residual asset bad-bank entity. This focusing of bank personnel improves overall efficiency.

The bank must decide on the exact form of the bad-bank structure. Choice may be dependent upon securities laws but possibilities include a subsidiary of the bank, a separate bank complete with separate charter, or a trust company form. In any case, the bad-bank purchases non-performing assets from the parent bank. The key issue, however, is funding the entity as such debt can be difficult to place. Some funds are derived from reserves formerly allocated to the assets, but equity or debt sales are the primary source of bad bank funds.

The first use of this method was in the mid 1980s when high yield debt capital was relatively easy to come by. The subsequent collapse of the junk bond market has raised costs, and reduced the attractiveness of this alternative.

The winding down of the Thrift Crisis has lessened the necessity of problem bank resolution in the United States. Accordingly this approach has not been used recently in the banking sector of the US. The good-bank, bad-bank approach has more recently been used internationally as other regions have experienced similar banking difficulties.

f) Purchases and Assumption

This is basically a form of acquisition. An acquirer may either purchase the entire bank balance sheet or just the retail deposit base and a subset of the assets. If the whole bank is purchased the acquirer may receive a government payment covering the difference between the market value of assets and liabilities. If only some deposits are purchased, the acquirer may be given the option of purchasing any of the others and get their pick of bank assets. What is purchased is decided upon through either negotiation or prior partitioning by regulators.

The purchase and assumption agreement (P&A) is often enhanced by government guarantees. These often take the form of putbacks, whereby the government promises to buy back the assets at a stated percentage of value within a specified time frame. The percentage is a declining function of time; therefore, there is an incentive for the acquirer to quickly identify problem assets. This guarantee is essentially a put option issued by the banking authorities.

The offering of a put can distort incentives, resulting in some loans being liquidated when they in fact have a greater value if worked out (James (1991)). Rosengren and Simons (1994) therefore advocate that loans should be transferable. With the guarantees intact, the borrower can search for a bank that is willing to assume the loan. If successful the government is likely to save money. If it is not, the loan would be returned to the liquidation pool.

g) Liquidation With and Without Governmental Assistance

Regulators have often shown great reluctance to liquidate banks. Perhaps this is because in many countries liquidation must proceed through the court system. However, it may also be because banks are seen as unique in their importance to a countries' financial base. A loss of confidence in banking could result in a severe economic contraction as we noted above. However, as we also point out above, this aversion to liquidation can lead to perverse incentives. If aid is offered, it is essentially rewarding an inefficient bank. It is for this reason that many economists and politicians have concluded that if a bank is poorly run, it should be allowed to fail. It is felt that resolution decisions should be based solely upon a least cost basis, taking into account franchise value but nothing more.

While many would argue that this perspective ignores the cost of bank failure to the economy as a whole, there are clearly cases where closure is a preferred solution. In such cases, if a bank chooses an unaided liquidation, regulators must ensure that bank management and shareholders do not profit from the liquidation. Their primary loyalty is supposed by charter to be to depositors. A shortfall in assets may lead to some insured and all uninsured depositors not being compensated. The government will then be left to step in so as to pay off the insured depositors, where direct explicit insurance exists, and decide whether the uninsured depositors should be compensated at all or in part.

However, in most cases liquidation occurs with some government resources. Government assistance in the liquidation is usually provided in order to give the bank time to efficiently dispose of assets and clearly satisfy its liability holders of various types. Help may come in the form of an advance or a permanent cash infusion. The latter is done reluctantly and only when it is deemed to lower eventual payouts.

A more extensive and expensive liquidation procedure results when regulators eject bank management and oversee the liquidation themselves. Insured deposits are paid-off or transferred to another institution. A decision is then made as to what if anything uninsured depositors should receive. Assets are sold individually or sorted into pools in order to make valuation and disposal easier. Bids are then accepted for the disposal contract. A proviso is usually made in such cases that liquidation should not unduly affect local markets.

III. A Brief Review of Worldwide Experience and An Evaluation of Results

With the options reviewed in some detail, it may be useful to summarize the actual experiences prior to the current crisis. Therefore, three different regions where we have seen use of the resolution options enumerated will be reviewed below, and the results evaluated. The US has had the most experience because of the sheer size of its banking sector, so this will be reviewed first. Scandinavia has recently gone through a financial crisis which is reviewed next. Finally, we touch on the activity in France for a somewhat different experience.

III. 1 US Experience

Perhaps the best place to begin in the US is to review the decline in the U.S. thrift industry. Forbearance was initially the primary tool used in an attempt to resolve the Thrift Crisis of the 1980s. This was by directive of the Federal Home Loan Bank Board and drew justification from earlier banking acts, such as the Garn-St.Germain Depository Institutions Act of 1982.

Nakamura (1990) points out that forbearance was supported by those who felt the state of the economy required caution, considering the deep recession of the early 1980s. Dissolving or merging insolvent thrifts would have been difficult in this environment, it was argued at the time. Regulatory authorities firmly believed in an imminent economic recovery and the lowering of interest rates. In addition, a practical consideration was the possibility that the FSLIC's insurance fund was insufficient to undertake wide-scale closure. Replenishment would likely be politically unpopular. Unfortunately, the dissipation of the recession in 1982 made these constraints of less importance but the policy of forbearance was continued.

The effectiveness of forbearance was hindered by two key problems that were part of the thrift crisis. Capital requirements were not risk-based and there was inadequate FHLB staffing for oversight. On top of this, along with forbearance came new accounting practices. Thrifts were given the option of using less stringent regulatory accounting practices (RAP), rather than generally accepted accounting practices (GAAP). This created the illusion of healthier balance sheets than was, in fact, the case. The results were disastrous.

Dellas et al. (1996) find that the average time from insolvency to closure was 38 months. The Congressional Budget Office (CBO) estimated that over \$60 billion of additional costs can be attributed to the delay in closure. However, the CBO reported that by 1991, 345 thrifts had recovered resulting in a savings of \$ 1.5 billion over closure. *But*, of the 345, a disturbing 70% were still considered to be under financial stress. The dour good news was counterbalanced by the concurrent loss of 1,600 thrifts which were unable to regain their health.

In 1986, the FDIC unveiled the Capital Forbearance Program. Brinkman et al. (1996) examine the performance of the 325 banks which were accepted into the program from 1986 to 1989. It is found that there was no substantial improvement of the capital ratios of the chosen institutions. A further examination was done to see as to whether there were ex ante identifiable characteristics that could be attributed to the expectation that these institutions could return to solvency. Their finding is there were not. Thrift improvement was linked to the general improvement in local economic conditions, lower credit risk arising from the improved economic conditions, private sector capital infusion, extraordinary income items, and greater franchise value. Determining ex ante which thrifts would benefit from forbearance was therefore futile except in the cases where there was a strong likelihood of improvement of local economic conditions.

Access to the Federal Reserve's discount window did not seem to mitigate the crisis or its cost either. As is well known, such borrowing is allowed only in order to meet short-term liquidity problems. Nonetheless, many thrifts availed themselves of this option during the Thrift Crisis. Critics have voiced the view that the Fed was too lenient in allowing troubled thrifts to habitually use this source of cash during this period. It became, in a sense, a form of forbearance.

In 1991, the House Banking Committee found that 90% of institutions receiving credit at the discount window from January 1985 to May 1991 subsequently failed (see Dellas et al (1996)). It was stated that troubled institutions which were assigned CAMEL-5¹ status stayed open an average of 10 to 12 months. The implication was that without this source of liquidity thrifts would have failed earlier, thereby saving taxpayer money.

Gilbert (1994) dissents from the view that Federal Reserve lending increased the FDIC's losses. After being rated CAMEL-5, both borrowers and non-borrowers lasted a median of 20.5 months before failure. He does point out, however, that banks which borrowed

¹ CAMEL is an acronym for: capital adequacy, asset quality, management, earnings, and liquidity. Institutions which are considered to have the highest probability of failure are rated CAMEL-5.

in their last 13 weeks tended to have been rated CAMEL-5 for a period of 9.5 months as opposed to 7 months for non-borrowers. Borrowers were also statistically more likely to exhibit worse loss ratios. Nonetheless, Gilbert argues that these facts do not prove a direct link to increased FDIC losses.

Regulators also have had the option of direct cash infusion as a tool toward regaining a thrift's financial health. Open thrift assistance (OTA) was used sparingly by the FDIC because it was felt that aid of this sort would take away management and shareholder's incentive to regain solvency. The FDIC's rule was that neither group should be allowed to profit from OTA. Nonetheless, it was widely viewed as a form of subsidy that allowed unhealthy institutions to take market share away from healthy thrifts, hardly a desirable side effect of the resolution option.

A more prevalent method of raising capital has been through the issuance of private subordinated debt. Issuance of subordinated debt provides a capital infusion which may return an institution to solvency or secondarily, attract merger interest. However, such issues have been floated without guarantees of any kind. Troubled banks that issue this debt have had to do so at market rates which incorporate the perceived risk of the bank. This is rightly viewed as a form of risk-based capital. However, Osterberg and Thomson (1992) correctly argue that the effectiveness of market pricing of risk is mitigated by deposit insurance and implicit government guarantees. Therefore, FDIC forbearance and insurance increases the value of subordinated debt and alters required rates of return. So, subordinated debt will not reflect risk unless insurance premiums also do so. It is, however, a start and a move in the right direction.

Overall, James (1991) has shown that the costs of bank failure has been quite high in the U S, on the order of 10% of direct costs. This figure is much higher than that found in non-financial firms. James adds that returns on non-performing assets are maximized when loans are transferred to purchasers. This and other studies lend credence to the FSLIC's priority of returning a thrift to health or its next best alternative of merger with a stronger institution.

Toward this end, initial merger attempts involved noncompetitive bidding. In retrospect this has been considered unfair, but it can likely be attributed to a lack of bidders. Bidder scarcity eventually led the FSLIC to open bidding to non thrifts to increase investor interest.

In addition to the complaints concerning noncompetitive bidding, FSLIC incentives, such as future payments for capital losses, yield maintenance guarantees, and tax benefits, were all criticized for creating moral hazard and adverse selection problems. However, Gosnell et al (1993) investigate whether there were in fact abnormal wealth increases experienced by acquiring institutions. It is found that under the FSLIC a few small institutions did experience wealth effects that are attributed to implicit guarantees for continued operation (the RTC discontinued these guarantees). However, in general, from 1984 to 1991 there are no wealth effects found.

With the establishment of the Resolution Trust Corporation (RTC) in 1989 came a much more formal and efficient process, including detailed directives and guidelines, better evaluation techniques, competitive bidding, increased auction participation, and limited time limits on asset putbacks. Prices for problem institutions improved, and the cost of insolvency resolution declined.

Throughout the period mergers in both the thrift and the banking industries continued, both assisted and unassisted. Assisted mergers were termed Purchase and Assumption Transactions (P&As). In a P&A, the buyer assumes either all or only insured deposit liabilities and purchases a portion of the assets. Assets that are not purchased are further marketed and, if unsold, placed in an agency pool earmarked for liquidation.

Details of P&A agreements over the period were quite flexible, with the unique method now known as a good-bank, bad-bank structure first used in the 1984 bail-out of Continental Illinois. For the transaction a subsidiary was created which became the repository of the institution's bad loans. The subsidiaries' sole purpose was the liquidation of these loans. This is one of the techniques open for such transactions, as we have noted above. A good overview of the generalized process can be found in Herlihy and Wasserman (1992).

However, an interesting variation of the good-bank, bad-bank method was used in 1988 by Mellon Bank. Mellon created a new institution, Grant Street National Bank which was the repository of problem loans carrying a written down book value of \$1 billion, further written down to \$640 million at the time of sale. GSNB purchased the loans with \$123 million of cash which was paid in by Mellon and the issuance \$513 million in Drexel Burnham Lambert junk bonds. What makes the Mellon case unusual is that Mellon was not insolvent. It independently decided (with regulatory approval) that it would be more efficient with restructuring (Santomero (1989)).

Two years after incorporation, GSNB Chairman William B. Eagleson (1990) reported that Mellon's and GSNB's experience had been positive. He does, however, point out possible areas of difficulties for banks attempting to emulate their example, including high cost, difficult fund raising, insufficient staffing of the bad-bank, and determination of the most efficient corporate form.

With the collapse of the junk bond market raising capital for the creation of bad-banks has become more difficult. This and the winding down of the Thrift Crisis has resulted in a decline in the use of this method for problem loan resolution in the U.S. But it has spread to other areas, such as insurance liability structures.

In retrospect, it is generally agreed that liquidation of failed banks has been expensive in the US. Indeed, it has been much more costly than bankruptcies in other industries, as James (1991) pointed out. This is why the regulatory authorities seemingly put a premium on rehabilitating troubled banks. However, ultimately, decisions must be based on cost/benefit analysis. If it was less expensive to close a bank, it must be closed. In such cases, liquidation entailed the payoff of insured, and many uninsured, depositors in the early days of the Thrift Crisis. This caused a tremendous drain on the insurance funds and ultimately led to the inadequacy of the FSLIC fund. FDIC disposal of assets was then contracted out under a Standard Asset Management and Disposition Agreement (SAMDA). This followed the sorting and grouping of assets into homogeneous pools. Contractors then submitted proposals and

bids for management and disposal. Costs fell and the efficiency gains reduced the expenses of the troubled bank resolution.

Ultimately approximately 40% of savings and loans were liquidated. Closure was initially slow under the FSLIC, but accelerated under the RTC. At the end of 1995, when the RTC itself was closed, over 1,600 thrifts had been liquidated.

Total cost of the Thrift Crisis has been estimated in the neighborhood of \$150 billion. Regulatory authorities were clearly unprepared for the magnitude of the Thrift Crisis. Costs were multiplied by initial inaction and bureaucratic inefficiency. There was a steep learning curve which by the 1989 creation of the RTC began to level off. Unlike countries that subsequently experienced similar problems, the US was fortunate that the thrift problem was small in relation to the total size of the financial system.

III.2 Scandinavian Experience

The Scandinavian experience is really the story of three bank crises, one for Norway, Sweden and Finland. We will consider each in turn.

Prior to 1984, Norway had experienced low unemployment and low real interest rates. Credit expansion was rapid in this environment, 40% in 1985 and 1986. Expansion was aided by the liberalization of Norway's financial markets which began in 1984.

1986 saw the collapse of oil prices which began the disruption of Norway's banking system. Inflation rose as savings declined. Credit losses mounted in 1987 as property values declined precipitously. Heiskanen (1993) points out that new accounting standards magnified the appearance of a weakening balance sheet. The position of savings banks, which prior to 1988 had no capital requirements and were typically undercapitalized in comparison to its neighbors (6% of tier one capital²), grew precarious.

By 1991, the banking crisis had become systemic. Shareholder equity and the insurance funds were exhausted. The government then took its first vigorous steps by nationalizing the

² Bennett, Rosemary, Good Bank, Bad Bank, October 1993, Euromoney.

banking system. The Government Bank Insurance Fund and Government Bank Investment Fund infused the industry with Nkr 28 billion. The government did not interfere in day-to-day operations but did prompt changes in senior management, work force reductions, and cost reduction. Individual banks such as Christiania (CBK) were forced to institute strict loan screening, loan portfolio monitoring, and a reduced international presence.

Despite these actions, 1991 legislation was surprisingly vague. The Kredittilsynet (Banking Inspection Board) was overhauled and the Banking, Insurance and Securities Commission was strengthened, but no long-term banking or crisis management policy was elucidated. Guidelines were issued which indicated that resolution should be at the lowest possible cost, capital adequacy ratios must be restored, and the regulatory authorities will determine the level of claim coverage. However, the political process did little to lay down an explicit time table to achieve those goals, leaving this to the Banking Inspection Board for implementation.

Rising oil prices and emergence from recession improved the prospects of Norway and its banks. By 1992, household savings was at 6%, a sizable improvement from the -13% experienced in 1987. The September 1995 equity sale of Focus Bank was very successful. Bolstered by this success, the government reduced its stake in the two largest banks, Den Norske Bank and Christiania to 50% in 1997.

Looking across to Norway's problems, Sweden thought that it was protected by its diversified economy. Unlike Norway and Finland, there were no external shocks to the economy. However, high inflation, rapid credit expansion, primarily in the real estate sector, and a recession in exports all contributed to Sweden's distress. Heiskanen (1993) pinpoints the primary problem as being in non performing loans in the property sector. This then led to increased bankruptcies, falling collateral value, and finally new, tougher accounting standards.

The evolution of the crisis was fairly clear cut. From 1989 to 1993, metropolitan property values declined 70% causing finance companies to be the first to experience distress³.

³ Sweden- Strong Recovery for Swedish Banks, Institutional Investor, June 1994.

Swedish banks, some having as much as 75% of their loan portfolios in property, were also strongly affected. Banks lost an estimated SKr 100 billion from 1990 to 1992 (Lexner(1993)).

The floating of the krona on November 19, 1992 then led to a 25% depreciation which catalyzed large bank losses in the foreign exchange market and foreign denominated currency loans. Many banks were already in precarious positions with capital adequacy ratios at dangerous levels. Gota and Förningsbanken's capital adequacy ratios were 3.4% and 6.9% respectively in 1993. The government took interim action by infusing Nordbanken with SKr 25 billion of capital and Sparbanken Första with SKr 10 billion in loans and guarantees. This effectively nationalized both institutions.

An extensive rescue of the banking industry (and some affiliated institutions) was passed in the legislature on December 18, 1992. Sederowsky (1994) summarizes the essence of this bill as targeting protection of the payment system and safeguarding the supply of credit. The Bank Support Authority (BSA) was to receive advice from a string of outside consultants.

Guarantees were provided on all retail deposits, senior and subordinated debt, problem assets, loans and new equity issues. Banks were to bear the full costs of any government intervention and cash infusion was achieved via loans at commercial rates. If a bank accepted an aid package it had to fully open its books and submit to government directed restructuring and cost cutting. These features led the two largest private banks to strive to avoid requesting aid and all of the disclosure that it would involve.

The good-bank, bad-bank method of problem loan resolution was extensively used in the Swedish bailout. Nordbanken channeled SKr 67 billion of its non performing loans into bad-bank, Securum. This split was augmented by a SKr 10 billion capital infusion by the government into Nordbanken and SKr 40 billion into Securum. Gota created bad-bank Retriva and transferred SKr 38 billion in bad loans to it. Gota was subsequently sold to Nordbanken for SKr 3.1 billion, thus creating Sweden's largest bank.

Svenska Handelsbanken (SHB) and Skandinaviska Enskilda Banken (SEB) were, prior to the Nordbanken-Gota merger, the two largest Swedish banks. Both were able to survive

without government aid despite dark days. Their strength was attributed to conservative policy which was evidenced by their strong capital adequacy ratios throughout this period. SHB had very strict loan policy and avoided entanglement with finance companies. SEB sought relief by capital infusion through equity sales, the selling of loans to a bad-bank subsidiary, Diligentia, and an 8% staff reduction.

The health of Swedish banks improved with falling interest rates. Fee income has increased and non performing loans are generating lower costs. Unaided banks such as SHB and SEB have seen vast improvements in their stock prices (700% by SEB in 1993 alone). SHB has subsequently purchased two Norwegian banks.

The cost to the Swedish government has been estimated at well over SKr 60 billion and the bailout has not been praised by all. Good banks such as SEB and SHB feel that the government went too far. It is felt that troubled banks such as Nordbanken received an unfair competitive advantage by essentially having their balance sheets wiped clean with government help. The merger of Nordbanken and Gota, and its resultant expansion, is seen as an unjustified reward for poor performance.

In Finland, the 1980s saw steady economic expansion. Unemployment was a steady 5% to 6% as was GDP growth at 3%. During this time, banking embarked upon massive expansion in the credit market and major investment in corporate equity (export companies especially). For the most part, growth was financed by debt.

Akin to Norway's oil crisis, Finland's recession was spurred by the exogenous effect. In their case it was the Soviet Union's collapse. Trade with the Soviets declined 65% in 1991. This reinforced declining domestic demand which resulted in a drop of 7% in GDP. Property values which had increased 68% from 1987 to 1989 declined precipitously. By year-end, listed companies showed a negative Fm 10 billion in aggregate profits.

After a loss of Fm 475 million in the first eight months of 1991, Skopbank became the first bank taken over by the central bank. The number of savings banks declined from 275 to 86. The remaining were consolidated into the Saastopankki Suomi (Savings Bank of Finland).

Kansallis-Osake-Pankki (KOP) experienced losses of Fm 250 million in currency market speculation and another Fm 270 million in dealings with a single Finnish investor, Pentti Kouri.

The government was slow to react to the above signals. Legislative action in April of 1992 infused the Government Guarantee Fund (GGF) with Fm 28 billion in order to back the three existing deposit guarantee funds. The newly created Savings Bank of Finland revealed that it was in deep trouble in the summer of 1992, which then resulted in the GGF taking over its operation. By year-end 1992, all insurance funds were exhausted.

Banks wrote-off Fm 21 billion in non-performing loans in 1992 leaving an additional Fm 55 billion on their books. The Eduskunta (parliament) authorized an additional Fm 20 billion for insurance funds but required it to be held by the Ministry of Finance as opposed to the GGF. In addition, it pledged to back the banking system under all circumstances underscoring this statement with guarantees of up to a ceiling of Fm 35 billion.

The GGF was successful in selling the Savings Bank of Finland to competitors in October 1993. However, many banks did accept capital from the GGF over the entire crisis period. This capital infusion occurred using a total of Fm 8 billion of 50-year floating rate certificates. These instruments were unusual in that interest payment was at year-end, and only one payment is required in the first three years. After three years of non-payment, the government retained the option of conversion to equity, and after 10 years the interest rates will be ratcheted upwards.

Faced with this governmental alternative, some banks chose to raise capital on their own. In 1993 KOP, for example, experienced increased income and a steadying of their non-performing assets. They decided not to ask for government help, instead raising Fm 2.85 billion in debt and equity issues which raised their capital adequacy ratio to 10%. Concurrently, KOP reduced staff by 8%, cut costs by Fm 500 million, and reduced its international presence.

III.3 French Experience- Crédit Lyonnais

Crédit Lyonnais' (CL) expansion beginning in the 1980s was massive in scope. From 1988 to 1993 the value of its industrial holdings increased nearly 500% to FFr 49 billion. Lending doubled in the five years ending in 1992. CL lent extensively to high profile individuals who eventually defaulted: Bernard Tapie (FFr 1 billion owed), Robert Maxwell (FFr 1 billion owed), Florio Fiorini (his company SASEA went bankrupt owing \$ 3.8 billion), and Giancarlo Parretti (whose takeover of MGM eventually cost Crédit Lyonnais \$ 2 billion).

The Crédit Lyonnais empire began to unravel in 1993 when Parisian commercial property values declined significantly. Heavy lending to property developers and others led to a FFr 6.9 billion year-end loss. The government came to CL's aid in the form of a FFr 23 billion bail-out in 1994 and an additional FFr 45 billion in 1995. Estimates of the eventual cost to the government have run as high as FFr 135 billion.

Many of Crédit Lyonnais' competitors have voiced their displeasure at the seemingly unending bail-out. However, it has always been difficult to disentangle Crédit Lyonnais and the government's dealings. According to former CL President Haberer, the industrial expansion was with the blessing, if not prodding of the Socialist government. President Chirac has in the past scolded CL for not lending more to business to protect jobs. Many have questioned the lack of government supervision.

The government has justified its bail-out by pointing to CL's asset size which totals one quarter of France's GDP. The reasoning is that CL's failure would destabilize France and extend to the world banking system. The French government has promised the taxpayers that they will not have to pay for the bail-out, costs will come out of CL's future profits.

To facilitate the rescue, the government has allowed FFr 135 billion in assets to be transferred to a CL subsidiary, Consortium de Realisation (CDR) which will act as its bad-bank. The transfer was financed by a loan from a state-owned entity which in turn will be reimbursed by a 20 year FFr 145 billion loan from CL. Other measures include trimming its work force of 38,000 by 10% and the replacement of top management. In addition, the

European Competition Commission has mandated that CL sell 35% of its non-domestic assets (worth an estimated FFr 330 billion) by the end of 1998. The outcome, however, is still in doubt.

IV. The Implications From International Experience

As is apparent, there are any number of ways in which the regulatory authority can intervene in the financial sector. In the three regions reported above, we have seen the full array of the seven models discussed. In each and every case, regulatory intervention is described as essential, and the circumstances unique. In each case, regulators attempt to limit the impact of the crisis by some form of forbearance. Capital inflow usually follows, and merger talks are not far behind. Often, merger is tantamount to liquidation, as a forced P & A has the effect of liquidation with government assistance. In the end, costs are higher than expected, and the industry structure changes more than anticipated.

If there are lessons from the experience, several come to the surface:

1. Costs of intervention are generally larger than anticipated;
2. Interventions aimed at preserving the current institutional structure generally do not achieve the expected outcome;
3. The only sure resolution appears to come from confronting the insolvency directly and addressing its financial implications, no matter how large.

Regulators, however, often delay action in the hope of a turnaround. If the regulator is lucky, a change in the aggregate economy will remedy the financial imbalance. However, regulators are rarely lucky, at least in recent history. Resolution options available to regulators only permit them to delay the effects of a massive asset valuation change on bank structure in the hope of a return to financial viability. If they do not set off a series of counterproductive incentive effects, they may offer both the regulator and the bank manager time to shore up balance sheets and improve profitability. But, they offer only a little time and often require considerable luck. If the banking system can not correct its problems in short order, as was the

case in the US Thrift Crisis, or if the economy continues to deteriorate, as in the Scandinavian case, or if the losses are too large, as in France, the policy will not achieve its end. On the edges these policy options may offer some hope to sustain the institutions' lending capacity and consumer confidence for a short period of time. However, in the end, all of these options are no replacement for sound bank management and a sound balance sheet.

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