

Failure Resolution Methods, Costs, and Policy Implications: Experiences in the U.S. and Korea

Won-Keun Yang*

Korea Deposit Insurance Corporation

Sun Eae Chun**

Korea Deposit Insurance Corporation

Martha C. Duncan***

Federal Deposit Insurance Corporation

Abstract

Several important policy implications can be drawn out for Korea to build up an incentive compatible financial structure from the resolution experiences in the U.S. First, moral hazard behavior should be contained and market discipline needs to be established in order to control the undue risk-taking by depositors and banks through the strict application of the limited deposit guarantee system and introduction of risk based premium system. Second, failure resolution costs should be minimized by controlling the timing of the intervention and application of the least cost resolution method. Lastly, injection, management and recovery of public funds should be consistently overseen by one institution in order to obtain maximum possible recovery.

* Executive Director, wkyang@kdic.or.kr

** Senior Financial Economist, sechun@kdic.or.kr

*** Senior Resolution Specialist, maduncan@fdic.gov

I. Introduction

In competitive markets, some institutions prosper while others do not. The survival of the fittest produces a healthier, more efficient industry. From a public-policy standpoint, the failure of an individual financial institution is not a great concern. The responsibility of the bank regulatory agencies, including the deposit insurance corporation, is to maintain public confidence and stability in the entire banking system, rather than in any individual institution within that system. Nevertheless, the manner in which individual institutions are handled as they approach, and then reach, the point of insolvency, can have important implications not only for the eventual resolution cost, but also for the stability of the entire banking system, and for the long-term health and viability of the deposit insurer.

First and foremost, the primary objectives in determining the most appropriate failure-resolution method should be the maintenance of public confidence and stability in the banking system. Failure-resolution methods, which unnecessarily risk destabilizing the banking system, should be avoided. Second, failure resolution methods should encourage market discipline against risk-taking. Failure-resolution policies influence the probability and size of loss that claimants may incur. These factors in turn influence the degree to which any particular group of claimants will monitor and attempt to control a bank's risk-taking. Third, the failure-resolution method should be cost-effective.

The FDIC has accumulated a great deal of experiences pertaining to resolution and regulation of bank and thrift institutions since it was created in 1933. FDIC's procedure for selecting a resolution method has evolved over the years. In determining the most appropriate resolution method, the FDIC primarily tries to minimize disruption to the community and minimize the government's role in owning, financing, and managing financial institutions.

In contrast to the experiences in United States, there were virtually no failures of financial institutions prior to the financial crisis in Korea. When a financial institution, including banks, became insolvent, the government traditionally provided necessary financial support and kept it in business rather than letting it progress into bankruptcy. The practice consequently fostered moral hazard within the financial system and ultimately led to a higher taxpayer burden in resolution, while no individual resolution cost was incurred on a per institution basis.

In the process of recovering from the financial crisis, five banks that became insolvent were resolved by P&A transaction thereby confirming the new belief that banks could indeed fail. Also, many credit unions and other financial institutions were closed and liquidated.

It is only natural that the two countries experienced and adopted different resolution methods. Korea is a relatively small country with few banks of large asset base, while the U.S. is a large country with numerous banks, thus the impact of a bank failure on the economy would have been different in the two countries. The Korean government provided a temporary blanket guarantee during the financial crisis and all depositors were protected. In addition, public funds were injected and a considerable number of banks have been nationalized. Shares of financial institutions were sold to foreign investors leading to substantial change in the ownership structure of incumbent banks. Moreover, it has been only five years since the Korea Deposit Insurance Corporation was established.

This paper presents a comparative study of the U.S. and Korea in resolution methods adopted and their costs in resolving the financial sector crisis. Chapter II discusses the resolution methods and costs in the United States. Chapter III illustrates the Korean resolution experiences and costs during its financial crisis. Chapter IV extensively compares resolution & recovery procedures in the U.S and Korea and attempts to solicit some policy implications. The final chapter concludes with some challenges Korea is facing in building up an incentive-compatible financial system as a preventive measure to another financial crisis.

II. Resolution Experience of the United States

1. Overview

The Federal Deposit Insurance Corporation and the Resolution Trust Corporation coped with many challenges in resolving troubled banks and thrifts during the financial crisis of the 1980s and early 1990s. The U.S. banking and thrift industry in the early 1980s was facing a financial crisis of a magnitude not seen since the Great Depression years of 1929 through 1933, when depositors lost \$1.4 billion with the closing of 9,755 banks.(FDIC, 1984) The banking and thrift crisis of the 1980s and early 1990s bore certain similarities to banking conditions leading up to the Great Depression. With the notable exceptions of Continental Illinois National Bank and Trust Company (Continental),

Chicago, Illinois, and the New York savings banks, the early 1980s bank and thrift failures were generally small institutions, many with roots in the agricultural or energy sectors.

Continued problems in the energy sector and a collapse in several major real estate markets greatly increased the number and cost of failures. As a result, in 1988, the Federal Savings and Loan Insurance Corporation (FSLIC) insurance fund was reported to be at minus \$75 billion, and the ratio of losses to all insured deposits rose to 1.48 percent, a level that had only been exceeded in 1933. The insolvency of the FSLIC fund and the continued weakness in the thrift industry led to creation of the Resolution Trust Corporation(RTC) in August 1989. Before that year ended, 318 failed thrifts had been taken over by the RTC.

How large was the problem? Between 1980 and 1994, 1,617 federally insured banks with \$302.6 billion in assets were closed or received FDIC financial assistance. During this same time, 1,295 savings and loan institutions with \$621 billion in assets also were either closed by the FSLIC or the RTC, or received FSLIC financial assistance.

The failure of 2,912 federally insured depository institutions is equivalent to one failure every other day over the 15-year period. The combined total of \$924 billion in assets from the failed institutions is equivalent to \$168 million in failed bank or savings and loan assets that had to be liquidated or otherwise resolved each day for the 15-year period. The timing of the bank and savings and loan failures between 1980 and 1994, however, was not evenly distributed. At the height of the crisis, which was the five-year period between 1988 and 1992, a bank or savings and loan failed on an average of once a day, bringing with it a daily influx of \$385 million in assets.

2. Number of failures by various resolutions methods

There are three basic resolution methods for failing institutions used by the FDIC: Purchase and Assumption Transactions, Deposit Payoffs, and Open Bank Assistance Transactions. Through the years, there have been a number of adaptations of these basic resolution methods. Some of these strategies were refined over time, while others were abandoned after they had served their purpose. Although cost considerations determine the ultimate method through which a failed institution is resolved, the FDIC still possesses sufficient latitude to customize particular resolution methods within that framework.

A purchase and assumption (P&A) transaction is a transaction in which a healthy institution (generally referred to as either the acquirer or the “assuming” bank or thrift) purchases some or all of the assets of a failed bank or thrift and assumes some or all of the liabilities, including all insured deposits. Occasionally, an acquirer may receive assistance from the FDIC as insurer to complete the transaction. As a part of the P&A transaction, the acquirer usually pays a premium to the FDIC for the assumed deposits, which decreases the total resolution cost. There are several variations of the purchase and assumption agreement including a purchase and assumption agreement with loss sharing provisions and a purchase and assumption agreement involving a bridge bank.

In a deposit payoff, as soon as the appropriate chartering authority closes the bank or thrift, the FDIC is appointed receiver. The FDIC as insurer pays all of the failed institution’s depositors with insured funds the full amount of their insured deposits.¹ Depositors with uninsured funds and other general creditors (such as suppliers and service providers) of the failed institution do not receive either immediate or full reimbursement; instead, the FDIC as receiver issues them receivership certificates. A receivership certificate entitles its holder to a portion of the receiver’s collections on the failed institution’s assets. The FDIC may choose to pay off the failed bank through an agent institution. This transaction is called an insured deposit transfer. Arrangements are made with a healthy institution that is willing to act as agent for the FDIC and to pay insured deposits to customers of the failed institution. The FDIC transfers insured deposit accounts and secured liabilities of the failed bank or thrift, along with an equal amount of cash or other assets, to the healthy institution. Service to customers with insured deposits is uninterrupted.

In an open bank assistance (OBA) transaction, the FDIC as insurer provides financial assistance to an operating insured bank or thrift determined to be in danger of failing. The FDIC can make loans to, purchase the assets of, or place deposits in a troubled institution. Where possible, an assisted institution is expected to repay its assistance loan.² Due to restrictions imposed under the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 and under The Resolution

¹ The FDIC’s insurance limit is \$100,000. Any amount over that limit, including interest, is uninsured. The FDIC uses the term “insured depositor” to refer to any depositor whose deposits are under the insurance limit. Similarly, the term “uninsured depositor” is used to refer to those depositors whose deposits are over the insurance limit. It is important to note that customers with uninsured deposits are paid up to the insurance limit; and only that portion of their deposits that is over \$100,000 is uninsured.

² Generally, an OBA agreement includes provisions for the repayment of the assistance in whole or in part.

Trust Corporation Completion Act of 1993, which amended the Federal Deposit Insurance Act of 1950, OBA is no longer a commonly used resolution method.

The FDIC and the RTC used different approaches to find the most efficient way of managing bank and thrift failures. The resolution process itself went through a series of changes and adjustments throughout the crisis period because of ever-changing market conditions and legislation that prompted innovative cooperation between the government and the private sector.

The P&A was the favored resolution policy of the FDIC. From 1980 to 1994, the FDIC handled 1,188 of the 1,617 failing and failed institutions, or 73.5 percent, through P&A transactions. Similarly, of the \$302.6 billion in assets and \$233.2 billion in deposits, \$204 billion of the assets (67.4 percent) and \$161.3 billion of the deposits (69.2 percent) were in the 1,188 institutions handled through P&A transactions.

Like the FDIC, the RTC’s emphasis during its resolution history generally was on P&A transactions. Of the 747 institutions resolved by the RTC, 497 institutions, or 66.5 percent, were handled through P&As. Similarly, of the \$220.6 billion in deposits at those 747 institutions, \$161 billion of the deposits, or 73 percent, were in the 497 institutions handled through P&A transactions.

Resolution Methods Used by FDIC and RTC

(unit: no of transactions, \$bil)

		P&A	Deposit Payoff		OBA	Total
				IDT		
FDIC 1980~1994	No. of transaction	1,188 (73.5)	296 (18.3)	176 (10.9)	133 (8.2)	1,617 (100)
	Deposit Amount	161.3 (69.2)	14.3 (6.1)	-	57.6 (24.7)	233.2 (100)
RTC 1989~1995	No. of transaction	497 (66.5)	250 (33.5)	158 (21.2)	-	747 (100)
	Deposit Amount	161.0 (73.0)	59.6 (27.0)	-	-	220.6 (100)

* () represents percentage out of total transactions and total deposit amounts

source: Managing the Crisis: FDIC and RTC Experience 1980-1994, FDIC 1998.8

Deposit payoffs were used when no acquirer could be found or if the FDIC or the RTC did not receive a less costly bid for a P&A transaction. Of the 1,617 failing and failed institutions handled by the FDIC between 1980 and 1994, deposit payoffs were used 296 times, or 18.3 percent of the total. These transactions represented only 5.3 percent of the assets and 6.1 percent of the deposits of the banks handled by the FDIC for this period. Insured deposit transfers (a form of deposit payoff) accounted for 176 of the 296 deposit payoffs, or 10.9 percent of the total number of transactions.

At the RTC, deposit payoffs were more common because many of its early conservatorships consisted of institutions that had been insolvent for some time, were located in declining real estate markets, and had little franchise value because of industry conditions. Of the 747 institutions resolved by the RTC, 250, or 33.5 percent, were handled through deposit payoffs while 158, of these transactions involved straight deposit payoffs.

3. FDIC Resolution Cost of Bank Failures

The 1,617 banks that failed (or required open bank assistance) between 1980 and 1994 had \$302.6 billion in assets. The FDIC's cost for handling the failures was \$36.3 billion, or about 12 percent of the assets in the banks that required FDIC financial assistance.

The FDIC's annual failure resolution costs steadily grew during the 1980s, along with the rise in bank failures. The years between 1987 and 1992 were exceptionally costly. The FDIC's failure resolution costs exceeded \$2 billion in each of those years. In 1988, the costs peaked at \$6.87 billion. Costs exceeded the \$6 billion mark in 1989 and 1991 as well. To put the costs in perspective, FDIC insured commercial banks, the group that pays the insurance premiums to cover those costs, earned an average of \$18.2 billion a year during 1987 to 1992. During the same period, the FDIC's bank failure costs averaged \$4.6 billion, or 25 percent of the industry's total earnings.

Looking at the FDIC's annual resolution costs as a percentage of failed bank assets shows no clear pattern. Because of the dominance of the Continental Illinois open bank assistance transaction in 1984, the ratio is a relatively low 4.48 percent in that year. The late 1980s show relatively high cost-to-asset ratios, exceeding 20 percent in 1986, 1987, and 1989. In those years, in spite of a large number of failures and a weak economy, few dominant, sizeable failures pulled down the averages. The 1990s, with its gradually improving economy, proved to be less costly than the 1980s.

A strong negative correlation exists between bank asset size and failure resolution costs as a percentage of assets. For smaller bank failures, those of banks with less than \$500 million in total assets, the overall failure resolution cost is about 20 percent of assets during 1980 to 1994. As bank asset size increases, the ratio steadily declines, reaching 6 percent for banks with more than \$5 billion in assets. The economies of scale associated with handling larger bank failures make it difficult to discern trends over time in the FDIC's cost for handling the "typical" bank failure.

One way of looking at resolution costs is by the transaction method, which reveals a relatively high cost of deposit payoffs, whether they are straight deposit payoffs or insured deposit transfers. In addition, OBA transactions were less costly than P&A transactions. It is difficult, however, to draw firm conclusions from that type of comparison. Historic bidding procedures generally did not allow for open competition among transaction methods. Open bank assistance was used for a greater percentage of larger bank resolutions, so they cannot be directly compared to the others. Because of the FDIC's preference for P&A transactions over deposit payoffs, it is difficult to draw any conclusions there as well. The FDIC used deposit payoffs in the worst situations, those where no one really wanted the failed bank franchise in a P&A transaction.

The P&A transaction, the most frequently used method, resulted in high costs (in excess of 20 percent of failed bank assets) from 1980 through 1987, except in 1982 when the cost-to-asset ratio was only 6.6 percent. The 1982 ratio, however, is an aberration caused by one large bank failure that had zero cost to the insurance fund. From 1988 through 1994, those costs were below 20 percent of assets, dropping to single digits in 1991 and 1992. Open bank assistance resulted in relatively low costs. The average cost of the OBA transactions for banks with less than \$500 million in assets was only 7.8 percent, which is well below the cost for other types of small bank transactions. This lower cost suggests that handling those institutions relatively early helped to hold down their overall costs. The costs associated with straight deposit payoffs and insured deposit transfers as a percentage of failed bank assets peaked later in the 1980s when the economy was weak and the country experienced the largest number of bank failures. Those banks often were unmarketable institutions that no one would purchase. In 1989, the average cost of the nine deposit payoffs was 44 percent of the failed banks' assets. It is difficult to draw any strong conclusions from the above discussion other than to point to the fact that larger banks cost less to resolve on a cost-to-asset basis than do smaller institutions.

4. RTC Resolution Costs of Thrift Failures

The 747 institutions that the RTC resolved between August 9, 1989, and year-end 1995 had \$402 billion in book value of assets before failure. Unlike the FDIC, however, the vast majority of those institutions were not sold immediately after failure, but instead were placed into conservatorship and were later resolved after significant asset shrinkage.³ The RTC's cost for handling those failures was estimated at December 31, 1995, to be \$87.9 billion (later estimated to be \$87.5 billion), or about 22 percent of the assets at time of failure. These costs represent the difference between recoveries from receivership assets and the amounts advanced to pay depositors and other creditors of failed institutions plus the expenses associated with resolving institutions.⁴

The \$87.9 billion in costs was almost twice the initial \$50 billion FIRREA appropriation, but it was substantially less than the high end of the range that the U.S. Treasury predicted at the peak of the cycle in June 1991 of close to \$130 billion in 1989 present value costs or \$160 billion in absolute dollars.

In response to the worsening savings and loan crisis, the Congress enacted the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) on August 9, 1989. FIRREA provided RTC with a total of \$50 billion in funding to resolve failed institutions and pay related expenses. FIRREA also established the Resolution Funding Corporation (REFCORP) to provide RTC with \$30 of the \$50 billion in funding through the issuance of bonds. However, funding provided to RTC by FIRREA was not sufficient and the Congress enacted subsequent legislation resulting in a total of \$105 billion being made available to RTC to cover losses associated with resolutions.⁵

Also, the RTC's resolution costs were skewed by the fact that the majority of institutions resolved in 1990 and 1991 were institutions that had been put into conservatorship by the RTC in

³ During conservatorship, assets were reduced by \$162 billion to \$240 billion through sales, collections, and other adjustments. In the receivership phase, assets were further reduced by \$232 billion. Thus, at December 31, 1995, RTC assets in liquidation totaled approximately \$8 billion. The remaining assets were transferred to the FSLIC Resolution Fund effective January 1, 1996.

⁴ \$81.3 billion, or 92 percent, of RTC's total estimated costs have already been realized through December 31, 1995, and therefore, are known. The estimated \$6.6 billion remaining at December 31, 1995, represents expected future losses on remaining receivership and corporate assets. The ultimate recoveries on those assets are subject to uncertainties.

⁵ The RTC Funding Act of March, 1991 provided an additional \$30 billion. The RTC Refinancing, Restructuring, and Improvement Act of November, 1991 provided \$25 billion in December 1991, which was only available for obligation until April 1, 1992. In December 1993, the RTC Completion Act removed the April 1, 1992, deadline, thus making the balance of the \$25 billion available to RTC for resolution activities.

1989 and 1990. A large number of those institutions had been insolvent for some time, were located in declining real estate markets (for example, the Southwest), and had little franchise value remaining. Approximately \$72 billion, or 82 percent, of the total RTC resolution costs resulted from those 531 institutions that were put into conservatorships or were resolved through the Accelerated Resolution Program during 1989 and 1990. Another gauge of those institutions' poor financial condition is that 239 of those 531 institutions, or 45 percent, were resolved through straight deposit payoffs or insured depositor transfers. To put those costs in perspective, the FDIC's bank failure costs totaled only \$9.1 billion for 1989 and 1990.

Looking at the RTC's annual thrift resolution costs as a percentage of failed thrift assets shows a pattern of decreasing costs until 1993 when costs begin to rise through 1995. The ratio is extremely high at 36 percent for those thrifts failing in 1989. Again, the RTC expected that ratio because those institutions were the worst off financially and had little, if any, franchise value. For 1992 and 1993, as the economy gradually began to improve in most of the nation, those years show relatively low cost-to-asset ratios, between 9 and 10 percent. Cost-to-asset ratios for 1994 and 1995 increased. In those years, only four failures occurred; three of those failures were in California, which was still suffering economically.

Although a correlation exists between thrift asset size and failure resolution costs as a percentage of assets, that correlation is less pronounced than that expressed above for bank failures. While bank failure costs show a steadily declining cost ratio as bank size increased, thrift costs are almost identical for thrift failures less than \$500 million (30.2 percent) and those between \$500 million and \$1 billion (30.9 percent). The RTC resolution costs as a percentage of total assets does not drop until the total assets increase to more than \$1 billion and continues to fall, reaching 13.9 percent for thrifts with more than \$5 billion in assets. The economies of scale associated with the handling of larger thrift failures make it difficult to discern trends over time in the RTC's cost for handling the "typical" thrift failure.

One way of looking at resolution costs is by transaction type. As expected, P&A transactions have the lowest average cost ratio compared to the straight deposit payoffs and insured deposit transfers. It is interesting to note that, for thrifts failing in 1989, all transaction types, including the P&As, show much higher cost ratios compared to the more recent years. The RTC resolution costs (as

a percentage of assets) for thrifts failing in the other years (1990 to 1995), however, are similar to the cost ratios for bank failures occurring during those years.

Another factor influencing the ultimate resolution costs for the RTC was inadequate or delayed funding. Interruption of funding occurred before passage of each of the three funding bills. The longest and most significant delay occurred for a 21-month period starting from April 1, 1992, through December 17, 1993. During that 21-month period, resolution activity was severely reduced. The delays in resolution funding tended to leave the institutions operating in conservatorship status much longer than the RTC would have preferred. Because of the large percentage of nonperforming assets, those institutions' liquidity needs were funded through deposit liabilities. If those institutions had been resolved promptly, carrying costs would have been reduced because assets retained by the RTC were funded at RTC borrowing rates rather than at the higher insured deposit rates.

Total Costs

RTC's costs of \$8 for its responsibilities in resolving the savings and loan crisis represent only a portion of the total costs of the savings and loan crisis. The cost associated with FLSIC assistance and resolutions, which amounts to \$64.7 billion, represents another sizable direct cost. In addition, the total cost includes indirect costs related to tax benefits, \$7.5 billion, granted in FSLIC assistance agreements.

Although most of the direct and indirect costs of the savings and loan crisis had been funded or provided for through December 31, 1995, significant fiscal implications remain as a result of the crisis. Substantial funds were borrowed through bonds specifically designed to provide funding for a portion of the direct costs. Both taxpayers and the industry are paying financing costs on those bonds.

In 1987, the congress established FICO, which had the sole purpose of borrowing funds to provide financing to FSLIC. FICO provided funding for FSLIC-related costs by issuing \$8.2 billion of noncallable, 30-year bonds to the public. In 1989, the Congress established REFCORP to borrow funds and provide funding to RTC. REFCORP provided funding to the RTC for resolution losses by issuing \$30.0 billion of noncallable, 30- and 40-year bonds to the public. The annual interest expense on the \$38.2 billion of bonds issued by FICO and REFCORP has and will continue to have a significant impact on taxpayers and the savings and loan industry.

The annual interest on the FICO bonds is \$793 million and is currently being paid from industry assessments and interest earnings on FICO’s cash balances. The annual interest obligation on the FICO bonds will continue through the maturity of the bonds in the years 2017 through 2109. The total nominal amount of interest expense over the life of the FICO bonds will be \$23.8 billion. Annual interest expense on the REFCORP bonds is \$2.6 billion. The Federal Home Loan Banks contribute \$300 million annually to the payment of REFCORP interest expense, and the remaining \$2.3 billion of annual interest expense is paid through appropriations. Annual interest expense will continue through the maturity of the REFCORP bonds in the years 2019, 2020, 2021, and 2030. The total nominal amount of interest expense over the life of the REFCORP bonds will be \$88 billion.

The largest source of funding to pay the direct costs of the savings and loan crisis was provided by taxpayers as a result of legislation enacted to specifically deal with the crisis. This legislation was enacted during a period in which the federal government was financing-via deficit spending-a sizable portion of its regular, ongoing program activities and operations. Under these circumstances, it is arguable that substantial incremental Treasury borrowing occurred in order to finance the taxpayer portion of the crisis.

Estimated Total Costs for Resolving S&L Failures

(unit: dollars in billions)

	Funding Source		
	Total	Taxpayers	Private Sources
Total estimated direct and indirect costs	\$160.1	\$132.1	\$28.0
FSLIC costs	\$64.7	\$42.7	\$22.0
RTC	\$87.9	\$81.9	\$6.0
Tax benefits under FSLIC assistance agreements	\$7.5	\$7.5	-
Total estimated interest expense on appropriations	\$320.8	\$285.2	\$35.6
Interest expense on FICO bonds	\$23.8	-	\$23.8
Interest expense on REFCORP bonds	\$88.0	\$76.2	\$11.8
Estimated interest expense on appropriations	\$209.0	\$209.0	-
Possible payments for claims	\$90	\$90	-
Total	\$ 489.9	\$ 426.3	\$ 63.6

Source) GAO, Resolution Trust Corporation’s 1995 and 1994 Financial Statements

For purposes of estimating Treasury interest expense associated with resolving the savings and loan crisis, it is assumed that the entire amount of appropriations used to pay direct costs was borrowed. Under the assumption that the \$99.3 billion⁶ in appropriations for the FSLIC Resolution Fund and the RTC would be financed for 30 years at 7 percent interest, with no future refinancing, approximately \$209 billion in estimated interest payments would be needed over 30 years to cover the interest expense related to appropriations used to cover the direct costs of the crisis. Accordingly total cost for Resolving S&L failures comes to \$426.3 billions, which is 5.7% of real 1995 GDP.

III. Resolution Experience of Korea

1. Overview

Even though the imminent cause of the Korean financial crisis that broke out in late 1997 was the depletion of foreign currency reserves, the domestic origin of the crisis can be traced back to long-standing structural weaknesses within the Korean economy. Korea's government-led industrialization strategy was based on fostering the growth of the chaebol conglomerates, which channeled household savings into investment and expansion into new export markets. By 1997, the Korean economy was dominated by large corporations which were highly dependent on borrowing, particularly from the banking system. The high leverage ratios of the chaebols and their low profitability made them very vulnerable to any shocks to their cash flow.

The health of the banking system, in turn, was extremely dependent on the viability of the chaebols. However, the government-directed policy lending decisions prevented the development of a commercially oriented and sound banking system. Before the crisis, the profitability of Korean banks had been quite low due to poor asset quality, regulated interest rates, excessive competition for deposits, and poor asset-liability management.⁷ Reflecting the implicit assumption that the government stood behind the banking system, and that large corporations were "too big to fail", a

⁶ Total appropriations of \$99.3 billion for FSLIC and RTC differ from the \$124.6 billion in taxpayer costs presented in table. The difference of \$25.3 billion represents the taxpayer share of the REFCORP transaction, which is the present value of the taxpayers' share of future interest expense on the bonds issued by REFCORP. The \$25.3 billion has been excluded from the calculation of estimated Treasury interest in order to avoid charging interest on interest expense.

⁷ For the period of 1987~1995, the average ROE of Korean commercial banks was only 5.86%, which was just a half of that of American banks.

perverse moral hazard problem prevailed. Weak regulatory and supervisory arrangements allowed banks to incur in excessive risk without building a capital base to withstand shocks. Inadequate accounting rules, lax prudential standards and supervisory forbearance also contributed to the deficiencies of the Korean financial system.

Starting from the beginning of 1997, an unprecedented number of the highly-leveraged chaebols went into bankruptcy⁸, dragged down by excessive investment, declining profits, and a substantial debt burden. The large bankruptcies, together with rising bankruptcies among small and medium sized enterprises resulted in the deterioration of loan portfolios of Korean banks, resulting in a staggering accumulation of non-performing loans(NPLs) in the financial sector and the erosion of financial institutions' capital base.

A series of chaebol bankruptcies and the negative effect it had on the soundness of Korean banks caused a sharp decline in investor confidence. Abrupt outflow of short-term foreign portfolio investment in September and November 1997 initiated a sudden capital flight. Foreign investors refused to revolve the existing loans to Korean banks, which dried up a precarious foreign exchange reserve, ignited a currency tumble and drove Korea to the brink of default.

The IMF came to the rescue, but demanded in return, an immediate structural reform in the banking sector. The resolution of the Korean banking crisis included the following elements: 1) closure and merger of insolvent banks, 2) transfer of bad loans to an asset management company and recapitalization of the bank with public fund 3) bank sector restructuring closely linked to corporate sector restructuring taking into account that the troubles in the two sectors were interrelated through a vicious circle 4) enhancing the commercial orientation of the financial system and strengthening financial supervision and management to prevent the recurrence of similar problems in the future.

2. Number of failures by various resolutions methods

Rapid and successful resolution of a banking crisis requires the establishment of a special unit with wide powers to orchestrate a rapid response to the crisis, eliminate regulatory and administrative obstacles for the resolution process, design and implement a strategy, create consensus around it, coordinate involved government agencies, and ensure consistency and appropriate sequence of policies.

FSC was granted de jure as well as de facto authority and the responsibility for resolving not only the banking, but also the corporate sector crisis.⁹ The Structural Reform Planning Unit, a special task force, was created within the FSC with the mandate of resolving the banking crisis and was granted a wide set of powers. Its main function was to design an overall strategy and work plans for structural reform of the financial and corporate sectors.

Resolution of Financial Institutions by various methods

(as of April 2001)

	End of 1997(A)						Newly Entered	April 2001
			Licenses Revoked	Merges	Others*	Total(B) (%.B/A)		
Bank	33		5	6	-	11(33.3%)		22**
Non-Bank	2,069		108	140	453	561(27%)		
	Merchant Banks	30	22	4	1	27(90.0%)	1	4
	Securities Houses	36	5	1	1	7(19.4%)	16	45
	Insurance Companies	50	5	6	4	15(30.0%)	3	38
	ITCs	31	4	1	5	10(32.3%)	8	29
	MSFCs	231	61	25	25	111(48.1%)	12	132
	Credit Unions	1,666	2	102	277	381(22.9%)	9	1,294
	Leasing Companies	25	9	1	-	10(40.0%)	3	18
Total	2,102		113	146	313	572(27.2%)	52	1,582

*transferred to bridge bank, operation suspended, liquidated **18 if take into account of 4 banks under FHC, and Cheju bank which is scheduled to be included in the FHC by Shinhan bank

Source: FSC, Korea

By April 2001, authorities closed or suspended a total of 572 financial institutions which make up 27% of the total financial institutions. Viable banks obtained “clean-bank” status with 10 to 13 percent BIS ratios through recapitalization as well as sales of NPLs to the Korea Asset Management Corporations(KAMCO). In the banking sector, 5 banks have been closed through P&A, and 5 other banks have been merged with other banks. As for non-bank financial institutions, 27 merchant banks,

⁸ By end-November, six of the top 30 chaebols had filed for court protection; a seventh went into bankruptcy in December.

⁹ Laws passed in December 1997 consolidated all financial sector supervision(for banks, nonbank financial institutions, insurance and securities markets) in a single Financial supervisory commission(FSC), separate from the government.

7 security companies, 15 insurance companies, 111 mutual savings, and 381 credit unions have been closed.

For the banks and ITCs, resolution methods of open bank assistance were widely used where capital was injected for the normalization of management. Accordingly, NBFIs such as Daehan ITC and Korea ITC, Daewoo security company and Daehan Life have been nationalized, not to mention banks such as Korea First, Seoul, Hanvit, Choheung, and Korea Exchange Bank.

(1) Banking Industry

Banks were given the priority in all efforts in resolving financial insolvency and in enhancing financial soundness, considering its disastrous impact on the nation's financial system as a whole if they were to become insolvent. Together with the Ministry of Finance and Economy (MOFE), the Financial Supervisory Commission (FSC) set the principles and developed resolution plans for nonviable financial institutions.

Capital adequacy was the basis for identifying troubled financial institutions. For the 12 problem banks, whose BIS capital adequacy ratio were below 8% at the end of 1997, rehabilitation plans were submitted on April 30, 1998. By June 30, 1998, these plans were evaluated by an Appraisal Committee and the rehabilitation plan of five banks were refused: Daedong, Dongnam, Dongwha, Choongchung and Kyunggi Banks. These five non-viable banks were liquidated through P&A in July 1998. They were acquired by 5 banks, Kookmin, Housing & Commercial, Shinhan, Hana, and KORAM Bank, respectively.

The rehabilitation plans of seven other banks¹⁰ were "conditionally approved". These banks submitted plans to implement the conditions which contained the plans for change in management, recapitalization and merger, capital reduction, cost reduction, and schemes to prevent the accumulation of NPLs. Among them the Commercial Bank of Korea (CBK) and Hanil Bank merged and became Hanvit Bank, becoming Korea's first voluntary merger. Cho Hung Bank merged with Kangwon Bank and Hyundai Merchant Bank and became CHB. Among the 12 viable banks Boram

¹⁰ Cho Hung Bank, Hanil Bank, Commercial Bank of Korea(CBK), Korea Exchange Bank(KEB), Peace Bank, Kangwon Bank, and Chungbuk Bank

Bank merged with Hana Bank. It was the first merger between two viable banking institutions. Also Kookmin Bank merged with special bank, Korea Long-Term Credit Bank (KLTTCB).

Most important of all, Korea First Bank¹¹ was finally auctioned off to Newbridge Capital Consortium of the United States on the last day of 1998, as pledged to the international community from the early days of the crisis. KFB became the first ever Korean bank to be majority-owned and operated by international investors.

2nd round of restructuring: Financial Holding Company

Despite the improvement in the soundness of the financial institutions¹², however, the overall financial market condition has been stagnant and investor confidence has not been restored. It became clear that a one time cleaning of banks did not guarantee that the banks would remain clean and bank reform could never be completed unless the corporate sector was also duly reformed. Delay in the treatment of Daewoo until summer 1999 contributed to the rise of the defaulted size to an unwarranted high and the market perceived that banks would remain vulnerable to unrevealed potential losses.¹³

The government launched the 2nd round of financial restructuring with a focus on strengthening the competitiveness of the domestic financial industry by clearing up ailing assets such as non-performing loans and implementing forward-looking reforms based on the results of the initial stage of financial restructuring.¹⁴ For the 6 ailing banks which had posted a BIS capital adequacy ratio below 8% with potential losses accounted for as of end-June 2000 or had received direct injections of public funds, were ordered to submit management improvement plans to the Management Evaluation Committee (MEC). According to the results of the evaluation, Hanvit, Peace, Kwangju, Cheju banks were deemed as being not self-sustainable.

¹¹ Korea First Bank and Seoul Bank experienced financial trouble and were nationalized even before the financial crisis

¹² NPLs at banking and non-banking financial institutions amounted to 66.7 trillion won as of the end of 1999, down from 112 trillion won estimated as of the end of March 1998. KAMCO's buyout scheme, closure of non-viable financial institutions and self-rescue efforts contributed to reducing the total amount of NPLs by 92 trillion won. During the same period NPLs rose by 47 trillion won from the Daewoo Group restructuring, as well as by the toughened international standards of classifying bad loans by adoption of FLC in counting NPLs.

¹³ Total credit of Daewoo to banks and NBFIs reached 57 trillion won.

Further consolidation has been achieved through a government (KDIC)-led financial holding company. Woori (meaning “we” in Korean) Financial Holding Co. is set on 2nd April, 2001. Capitalized at 3.63 trillion won, Woori Financial Holding Co. has taken Hanvit Bank, Peace Bank, Kyongnam Bank, Kwangju Bank and Hanaro Merchant Bank under its wings.¹⁵

The due diligence conducted by the FSS on the six banks (above-mentioned banks and Seoul Bank) confirmed that each of the 6 banks’ liabilities exceeded their assets. Therefore, they are officially designated as ‘ailing financial institutions’, and subsequently, KDIC injected additional capital to these banks. Through the injection of public funds, the four member banks have got rid themselves of a large amount of non-performing loans, while at the same time increasing BIS capital adequacy ratios to around 10 percent. Prior to the public fund injection, complete capital reduction was ordered to the six banks making KDIC 100% shareholder. Member banks are expected to boost their competitiveness by cutting cost and making joint investments in information technology.

(2) Non-Bank Financial Institutions (NBFI)

Once the strategy for bank restructuring was in place, the authorities targeted the restructuring of the NBFI. NBFIs comprised 30 percent of total assets in financial system at the end of 1997. They have been directly or indirectly owned mainly by chaebols and other large shareholders. They have been a device for chaebol groups’ finance activities and have become an increasingly significant source for intermediating chaebol notes and other paper.

The soundness of these institutions deteriorated significantly due to the bankruptcy of the big companies. The FSC gave similar treatment to the restructuring of non-bank financial institutions. Management normalization is promoted under the responsibility of majority stockholders in consideration of each sector. Self-rehabilitation measures under the initiative of major shareholders are being implemented, with the FSC closely monitoring the progress. Should the self-rehabilitation

¹⁴ First, on June 30, 2000, Korea commercial banks are required to disclosed potential losses in their assets in accordance with the forward looking criteria(FLC). Second, the clearance of impaired assets are to be expedited in order to facilitate the transformation of commercial banks into “clean banks.”. Also, the recoverable portion of impaired assets will be cleared through the issuance of Asset-Backed Securities(ABS) or by a Corporate Restructuring Vehicle(CRV). KAMCO would also provide the source of funds through structural adjustment loans from the IBRD as well as recycled assets. Third, all commercial banks are advised to revise their management improvement plans to include a plan for clearing impaired assets and a plan for improving their BIS capital adequacy ratios

measures prove inadequate, the institution was subject to either corrective actions or closure. In the course of this process, financial institutions unable to survive or to pay what they owe were disposed of.

Among the NBFIs, the worst asset quality is seen in investment trust companies (ITCs) and securities firms. ITCs have been suffering from a bearish stock and bond market, causing unrealized capital losses on the ITCs' securities accounts. By mid 1998, it became clear that investment trust companies could not continue to pay the promised return on bond-type beneficiary certificates because their capital bases had been eroded by the accumulating losses. Two ITCs went bankrupt and the FSC revoked the licenses of two ITCs by August 1998. Other several IMCs had their licenses revoked or dissolved as their parent companies go bankrupt or in accordance with the restructuring plan by major shareholders.¹⁶ For other ITCs, rehabilitation plans have been submitted and after judging satisfactory implementation of such plans, necessary management improvement measures has been imposed (September, 1998).

After the crisis, the banking sector became reluctant to provide new credit to the private sector and the corporate sector were relying on the corporate bond market to tide over the credit crunch. From the second half of 1998 to the first half of 1999, bond issuance was the most important funding source and Korea was able to recover from the crisis.

At the time when the Daewoo crisis broke out, however, it became apparent that the financial insolvency of investment trust companies was far more serious than generally believed. The demise of Daewoo triggered a liquidity crisis for the ITCs, resulting in flight to quality, which shifted more than 100 trillion won in deposits from the ITCs to commercial banks, where deposits were fully insured. In tackling the financial strain of ITCs initially, the intention of the Government was to wait until after the settlement of the Daewoo crisis and then to handle that matter on the principle of sharing losses by all parties involved, preventing moral hazard from becoming widespread. However, due to the faltering stock market and the spread of sentiment against investment, the government resorted to its

¹⁵ The five subsidiaries in turn have nine affiliates, including Hanvit Securities Co., Hanvit Investment Trust Management Co. and Nexbitech, a unit of Peace Bank. Woori ranks roughly 90th amongst financial services groups in the world, with the combined assets of its subsidiaries amounting to 102.89 trillion won.

¹⁶ IMCs specialize only in fund management and investment advisory services. The ITCs are institutional investors while the IMCs are not

own investment in kind to achieve the early normalization of management.¹⁷ Measures to reform the sector included the requirement that all funds established after mid-November 1998 be marked-to-market by mid-2000, and early introduction of the PCA.

4. Resolution Costs of Failed Financial Institutions

An astronomical sum of money was required for restructuring the entire Korean financial sector. However, the volatility of the international financial market resulting from the Asia's foreign exchange crisis practically prevented government from raising money through foreign loans or investment. The only alternative left for government was to raise public funds by issuing bonds whose payment was guaranteed by the government.¹⁸

The Korean government originally allocated 64 trillion won in public fund for financial sector restructuring in May 1998.¹⁹ Initial Public funds of 64 trillion won were raised by issuing DIF bonds (W43.5 trillion) and NPL Disposable Fund (NPLF) bonds (W20.5 trillion). Funds raised by DIF bonds by KDIC were used for financial institutions and funds by NPLF bonds issued by KAMCO were used to redeem non-performing loans. KAMCO purchased the NPLs from the various financial institutions at discount.²⁰

All public funds (64trillion won) raised by issuing bonds had been used up by the end of 1999. However from the latter part of 1999, it became clear that additional public funds would be needed to sort out insolvent financial institutions from the market. Moreover, in the face of the abolition of the

¹⁷ ITCs are not the insured depository institutions. However in order to prevent the market instability due to the Daewoo Crisis, public funds was injected into Daehan ITC and Korea ITCs. In the case of Korea ITC and Daehan ITC there have been heavy losses arising from bonds issued by the Daewoo Business Group on top of losses accumulated in proper accounts. To resolve this situation, the government and government banks initially channeled public funds totaling 3 trillion won at the end of 1999 with a view to doing away with concerns then prevailing among investors and restoring stability in the financial market. Following this, 2 trillion won from the surplus fund of Korea Asset Management Corp. was deposited for the above two investment trust firms by the end of May, 2000. In the following month of June, Korea Development Bank and Industrial Bank of Korea deposited 2.9 trillion won, bringing the total to 4.9 trillion won, for the early recovery of their liquidity positions and for eventual conversion into investment in Korea Deposit Insurance Corp at a later date.

¹⁸ Differently from the case of Sweden in early 1990s, the IMF recommended not to include the expenditure for financial sector reform in the budget.

¹⁹ At May, '98, additional 50 trillion won is estimated to be needed as follows, in addition to the already utilized 14 trillion won. Purchase for NPLs: 25 trillion won(NPLs are roughly estimated to be around 100 trillion won. 50% of NPLs are supposed to be disposed by financial institution and 50% of NPLs to be purchased by KAMCO at the 50% of face value), capitalization: 16 trillion won, deposit payoff: 9trillion

²⁰ For uncollateralized loans, 3% of book value was paid. For collateralized loans, 45% of the appraisal value of the collateral was paid, excluding claims on wage and advanced lease payment. Long-term loans were purchased at a discount rate of 45%. The discount rate was, however, settled later by the net present value method after the court decision on the terms of repayment was made.

blanket deposit guarantee system, there was mounting anxiety that a big shift in the deposit could drive less creditworthy banks out of the market. To avoid any panic in the market, issue of additional public funds of 40 trillion won was approved by the National Assembly parliament at the end of 2000 and 50 trillion won including 10 trillion won recovered has been allocated for the 2nd round of restructuring.

19.8 trillion won out of 50 trillion of 2nd round of public fund has been used up during December 2000 to March 2001. In December, 2000, 9 trillion won of public funds has been injected for the recapitalization of banks and Seoul Guarantee Insurance. For the 6 banks, 4.1 trillion won out of 7.1 trillion won is injected to raise the BIS ratio up to 10%.

Aside from the above-mentioned public funds, 23.7 trillion won has been used since November 1997. Considerable portion was used at the initial stage of coping with the financial crisis before a total of 64 trillion won was made available as public funds. It was also used as investment to special-purpose banks or for the purchase of subordinated bonds from some commercial banks. Capital of special-purpose banks has been largely increased to resolve credit-stringency worsened by loan shrinkage of private bonds and to enhance the window function of providing foreign fund. Of the amount 32.7 trillion won recovered as of March 2001, 27.3 trillion won of has been recycled.

As of March 2001, the government has spent public funds amounting to 134.7 trillion won. 52.5 trillion won is used for equity participation, 18.2 trillion won is used for deposit payment, 12.2 trillion won is used for contribution, 14.2 trillion won is used for buying assets, while 37.6 trillion won is used for purchasing NPLs.

Public Funds Used

(as of March 2001, trillion won)

	Equity Participation	Deposit Payoff	Contribution	Asset Purchases	NPL Purchases	Total
Bond issuance	34.4	13.5	11.2	4.2	20.5	83.8
Re-used from recovery	3.3	4.1	1.0	3.6	15.3	27.3
Public money	14.8	0.6	-	6.4*	1.9	23.7
Total	52.5	18.2	12.2	14.2	37.6	134.7

* include purchase of subordinate bonds

Source: Ministry of Finance and Economy

80.7 trillion won which is 60% of the total public funds went to the banking sector. In P&A transactions, public money was injected as capital so as to prevent the deterioration of the asset quality of acquiring banks and BIS ratio. Also the difference between assumed liabilities and assets of the acquiring banks were covered by fiscal support.

Financial Supports for Banks and NBFIs

(as of March, 2001, unit: trillion won)

		Equity Participation	Contribution	Deposit Payment	Asset Purchases	NPLs Purchases	Total
Banks		33.3	10.5	-	13.3	23.6	80.7
NBFIs		19.2	1.7	18.2	0.9	11.8	51.8
	Merchant Banks	2.7	-	12.2	-	1.6	16.5
	Securities Houses	-	-	0.01	-	0.1	0.1
	ITCs	7.7	-	-	-	8.2	15.9
	Insurance Companies	8.8	1.6	-	0.3	1.8	12.5
	Credit Unions	-	-	1.8	-	-	1.8
	MSFCs	-	0.1	4.2	0.6	0.1	5.0
FIs abroad						2.2	2.2
Total		52.5	12.2	18.2	14.2	37.6	134.7

Source: Ministry of finance and economy

Also financial support was provided in order to facilitate the mergers of banks such as Hanvit Bank and Choheung Bank and to induce the self-normalization of other banks. In the case of the merger between a sound bank and a nonviable bank which is utilized as a means to resolve nonviable banks, sufficient financial support was provided to make the new bank's BIS ratio up to that of a sound bank with the aim of creating, in a short time-span, competitive and efficient leading banks. In case of the merger between two nonviable banks, capital was injected to bring the new bank's BIS ratio up to 10%(taking into account potential of assets turning bad thereafter).

For restructuring process of NBFIs, 51.8 trillion won, 38% of total public funds have been provided. A majority of these public funds allotted was injected in the resolution process of ITCs, Merchant Banks and Insurance Companies. For the closure of merchant banks 16.5 trillion won of public funds was injected which were mainly used for the deposit payment. For the resolution of ITCs

15.9 trillion won of public funds was provided and 12.5 trillion won was used for the resolution of insurance companies. For the resolution of security companies 0.1 trillion won was used.

The majority of public funds injected for the mutual savings and finance companies and credit unions were used for making deposit payments. For the resolution of mutual savings and finance companies 5.0 trillion won of public funds was injected of which 4.2 trillion won is used for deposit payment. For the resolution of credit unions 1.8 trillion won was used for the purpose of deposit payment.

The amount of public funds (gross costs) raised, as explained above, for restructuring the financial sector should be distinguished from the actual fiscal burden borne by the annual government budget. Estimating the cost of financial restructuring is an evolving exercise because loss recognition is still taking place. These losses will be reflected in the budget when the bonds are retired. The net costs will only be known after the losses are realized in the process of selling assets acquired in the restructuring process such as NPLs, equity, and other assets (if the sale price is lower than the price the government paid for these assets). Primary fiscal costs will also include the cost of interest payments on debt. As of March, 2001, 32.8 trillion won has been recovered, recording recovery rate of 24.3%, as follows. 21.6 trillion won from NPLs, 4.5 trillion won from dividends, 4.0 trillion won from asset sales, and 2.7 trillion won from equity sales.

IV. Policy Implications: U.S. v.s Korea

1. Resolution Process

Formal resolution activities in United States begin when a financial institution's chartering authority sends FDIC a "failing bank letter, advising the FDIC of the institution's imminent failure. The resolution process in the United States is multi-faceted and includes the following steps: preparing an information package, determining the value of the assets of the institution, determining the appropriate resolution structure, marketing the institution, conducting an information meeting, and accepting bids.

The FDIC develops detailed data for the information package on the amounts and types of assets and liabilities that the failing institution holds. The information varies depending on each institution's business strategy as reflected in its asset and liability structure.²¹ Simultaneously, the FDIC begins a review of the failing institution's assets using valuation models to estimate the liquidation value of the assets. This estimate is used in calculating the cost of a deposit payoff. All of the information gathered during the FDIC's review of a failing institution is used to determine the appropriate resolution structures to offer to potential bidders.

In developing the marketing strategy, the FDIC considers four factors: 1) the asset and liability composition of the failing institution; 2) the competitive and economic conditions of the institution's market area; 3) any prior resolution experience with similar institutions in the same market; and 4) any other relevant information, such as potential fraud at the institution. Based on this information, the FDIC determines how best to structure the sale of the bank or thrift.²²

The FDIC invites all approved bidders to an information meeting. In most cases, the FDIC will receive at least one bid that is less costly than the estimated cost of liquidation. The FDIC is required to choose the alternative in which the total amount of the FDIC's expected expenditures (including any immediate or long-term obligation and any direct or contingent liability for future payment) is the least costly to the deposit insurance fund of all possible methods for resolving the failed institution.

The final step in the resolution process occurs when the institution is closed, and the assets that the acquirer purchased and the deposits that it assumed are transferred to the acquirer. The chartering authority closes the institution and appoints the FDIC as receiver. The entire resolution process is generally carried out in 90 to 100 days, not including the post-closing settlement time frames.

Resolution methods in Korea have gradually become more efficient. FSIA (Financial Structural Improvement of Financial Industry Act) gives the FSC power to decide the resolution

²¹ For example, if a failing bank or thrift is involved primarily in residential mortgage lending, the FDIC will develop information on the basis of that bank's asset characteristics, such as the interest rates and the terms of the loans, as well as the performance status of the portfolio (that is, performing versus nonperforming).

²² The primary decisions include the following factors: 1) How to market the institution; that is, whether to sell it as a whole or in parts. Portions of the bank or thrift, such as its trust business, its credit card division, or its branches may sell best as separate transactions. 2) Which types or categories of assets should be offered to prospective purchasers. 3) How to package saleable assets; for example, should the acquirer be required to purchase them, should they be sold with loss sharing, or should they be offered as optional asset pools. 4) At what price the assets should be sold; for example, at book value, at a fixed value estimated by the FDIC, or at the reserve price.

method for failing or failed financial institutions in relation with PCA.^{23 24} When the financial institution falls short of certain criteria of financial statement such as BIS capital ratio, or there is the possibility of such occurrence due to a major financial incidence or accumulation of NPL, FSC can recommend/require/order for the management rehabilitation or for the submission of the management rehabilitation plan. PCA includes retirement or consolidation of stocks, suspension of the business, M&A, P&A or contract transfer, etc.

The recent enactment of the Public Fund Special Act explicitly requires the adoption of the least-cost test, fair loss sharing and self rescue effort principle and enhanced the closer coordination among the safely net players accordingly. The authorities of KDIC are mostly related with capital infusion and the recovery activities.

A financial institution is designated to be insolvent by the FSC and the KDIC policy committee.²⁵ When designated to be insolvent from the on-site examination, part of the operation is cancelled by the order for the management rehabilitation as described in PCA and resolution process is proceeded, and the administrator is appointed.

FSC may recommend another financial institution as an acquiring institution. The KDIC may arrange mergers between insured financial institutions and failed financial institution, arrange for the acquisition of a failed financial institutions by the third party, or arrange assignments of business as deemed necessary for the protection of the depositors and maintenance of the stability of the financial system. KDIC may provide financial support for the merger or acquisition of the failed financial institution. KDIC actively participate in the detailed process of taking over such as pricing in relation with the decision of the financial support amount needed .

KDIC can establish the resolution financial corporation with the permission of the Ministry of Finance, in case where net debt of the failed financial institution is excessively huge, or merge/transfer/take over by third party is deemed impossible due to the deterioration of the

²³ The legal framework for the resolution and recovery of failing or failed insured financial institutions in Korea is found in The Depositor Protection Act(DPA), The Act on Financial Structural Improvement of Financial Industry(FSIA) Commercial Law(CL), and Bankruptcy Law(BL). The DPA and FSIA do not stipulate the detailed process for the liquidation of a failed or bankrupt financial institution so the articles for the general liquidation process found within the Commercial Law and the Bankruptcy Law are used. The CL and the BL does not contain any specific sections for dealing with the unique nature and number of depositors and this further limits the options available in the resolution process

²⁴ When the financial institution falls short of certain criteria of financial statement such as BIS capital ratio, or there is the possibility of such occurrence due to a major financial incidence or accumulation of NPL, FSC can recommend/require/order for the management rehabilitation or for the submission of the management rehabilitation plan

management. Resolution corporation may conduct the task which is necessary for the payment of deposit and credit, recovery of the loans and credit, and expeditious resolution activities.

2. Receivership & Recovery

Receivership

A receivership is designed to market the assets of a failed institution, liquidate them, and distribute the proceeds to the institution's creditors. The FDIC as receiver succeeds to the rights, powers, and privileges of the institution and its stockholders, officers, and directors. In exercising this significant authority, the FDIC is required by statute to maximize the return on the assets of the failed bank or thrift and to minimize any loss to the insurance funds.

The FDIC may collect all obligations and money due to the institution, preserve or liquidate its assets and property, and perform any other function of the institution consistent with its appointment. A receiver also has the power to merge a failed institution with another insured depository institution and to transfer its assets and liabilities without the consent or approval of any other agency, court, or party with contractual rights. Furthermore, a receiver may form a new institution, such as a bridge bank, to take over the assets and liabilities of the failed institution, or it may sell or pledge the assets of the failed institution to the FDIC in its corporate capacity.

The FDIC as receiver is not subject to the direction or supervision of any other agency or department of the United States or of any state, in the operation of the receivership. These provisions allow the receiver to operate without interference from other executive agencies and to exercise its discretion in determining the most effective resolution of the institution's assets and liabilities.

DPA(Deposit Protection Act) and relevant laws have been revised and enacted regarding the receivership role of the KDIC. When the KDIC is the major creditor of the failed financial institution, the FSC may recommend to the court that an employee of KDIC(or a financial expert) be appointed as a liquidator/receiver. The court shall appoint the person recommended by the FSC as

²⁵ A financial institution shall be deemed insolvent when 1) an insured institution has liabilities which exceed its assets, 2) when an insured institution fails to pay deposits or creditor, 3) when an insured institution may face difficulties in making

liquidator/receiver in bankruptcy unless there exist any special reasons which would prohibit that person effectively performing the tasks assigned. In case of mutual savings & finance companies and credit unions where KDIC is determined to be the largest creditor, an employee of KDIC can be appointed as a receiver by the president of KDIC.

In the case of a bank failure, it is mandatory for the Chairman of FSC or the employee of the FSC to assume the role of the receiver. However by the establishment of the Special Law on the Public Fund Management, KDIC or the employee of the KDIC is required to be appointed as a receiver for the public fund injected financial institution with the time limit of 5 years.

Recovery

Many factors determine the overall recovery rate of each bank that fails, including the selected method of resolution, the bank's financial condition at the time of failure, and the economic conditions of the region.

In United States in the middle to late 1980s, when the economy was weaker and fewer banks were interested in purchasing the franchise of a failed institution, the costs of the resolutions were higher. As the economy improved in the 1990s, fewer banks failed and the costs decreased.

Assets that are not sold immediately at the time of the resolution are transferred to the FDIC and booked as assets of the FDIC. Generally, the FDIC has two basic policy goals for disposing the remaining assets of failed financial institutions: (1) to dispose of the assets as soon as possible without upsetting local markets, and (2) to maximize the return to the receivership. The decision when to hold versus when to sell assets, or when to litigate versus when to compromise, evolves in response to the circumstances at the time. At the beginning of the crisis years, the FDIC used in-house staff to liquidate assets one at a time. By the end of the crisis years, more sophisticated methods had evolved, including securitized sales of assets and equity partnerships with private-sector firms.

Asset Management has developed an Asset Disposition Business Plan which sets the primary disposition strategies for each primary asset type (e.g., investments grade securities, mortgage loans, commercial loans, owned real estate, subsidiaries, other assets, etc.) The business plan is updated as

payments on deposits or liabilities

the FDIC adopts new disposition strategies and is intended to better administer and dispose of assets in a manner and that returns maximum net present value.

3. The “Least Cost” Principle

After FDICIA in 1991 in United States, the FDIC amended its failure resolution procedures to accept the “least cost” bid.²⁶ The new procedures require the FDIC to choose the alternative in which the total amount of the FDIC’s expected expenditures (including any immediate or long-term obligation and any direct or contingent liability for future payment) is the least costly to the deposit insurance fund of all possible methods for resolving the failed institution.

Following the FDIC’s case in Korea, Special Law on Public Fund Management was enacted which mandated the application of such principles as least-cost resolution methods, loss sharing, priority of self-rehabilitation in injecting the public funds. Decree on Special law reads as “public funds should be injected in a manner to minimize the difference between the public funds injected and estimated amount of recovered.

The FDIC determines the least costly resolution transaction by evaluating all possible resolution alternatives and computing costs on a net present value basis, using a realistic discount rate. In most cases, the FDIC will receive at least one bid that is less costly than the estimated cost of liquidation. If the bid includes assumption of all deposits, including uninsured deposits, the premium paid must be at least as large as the losses that would have been incurred by customers with uninsured deposits in a payoff in order for the bid to be considered less costly than liquidation.

The cost to the FDIC of a liquidation and payoff is generally calculated by the following formula: $\text{FDIC's cost} = (\text{loss to depositors}) \times (\text{the loss factor})$. It can also be stated as $(\text{loss on all assets} - \text{equity capital} - \text{unsecured creditors' loss}) \times (\text{insured deposits}/\text{total deposits})$. The first component of the equations (loss to depositors) defines the total expected loss on all receivership

assets to be absorbed by the depositors. It includes all loan loss reserves as well as an estimate of the FDIC's receivership expenses. This loss is reduced by the amount of equity remaining and by the amounts owed to unsecured creditors since they absorb all losses first before the depositors. The second component of the equations (the loss factor) accounts for the portion of losses absorbed by customers with uninsured deposits in a payoff. It is important to note that the FDIC shares pro rata with customers who had uninsured deposits. For example, if customers who had uninsured deposits constitute 30 percent of the total deposits, then the FDIC as subrogee²⁷ has the other 70 percent and will absorb 70 percent of any loss to the depositors.

IV. Challenges Ahead: Building an Incentive-Compatible Structure

It is hard to directly compare the failure resolution methods and costs of the United States and Korea since two countries greatly differ in size, economic structure and sovereign credit ratings. The banking system in Korea consists of small number of large national banks while that of the U.S. consists of a large number of small, independent banks that serve their communities. Korea is a small open economy which heavily relies on foreign markets and the primary concern at the time of crisis management was to restore Korea's credibility in the international market.

It was natural that Korea has to consider various factors before adopting the appropriate resolution method. Cost consideration was often sacrificed in favor of minimizing the internal and external disruption the particular resolution methods would likely bring. Nevertheless, Korea can draw out important policy implications to build up an incentive compatible financial structure from the resolution experience of the United States.

By the late 1980s in United States, mispriced and misstructured federal deposit insurance were identified as a primary cause of the banking and thrift crises. One, it permitted S&Ls to engage in

²⁶ Before the passage of FDICIA, the FDIC could effect any resolution transaction that was less costly than a deposit payoff. While the estimated cost of the resolution method has always been important, the FDIC at times considered other factors before making its final selection. Deposit payoffs were sometimes discouraged because they reduced the availability of local banking services in smaller communities. The FDIC also looked at broad issues such as the effect certain resolution methods may have had on banking stability and on discouraging shareholders and creditors of insured institutions from excessive risk-taking actions. The FDIC also considered the effect the selected method might have on increasing the inventory level of loans being serviced by the FDIC

²⁷ Subrogee is a term used when the FDIC pays the insured depositors the amounts of their insured deposits and then substitutes itself in the place of the insured depositors in the claims process.

moral hazard behavior by supporting their high risk portfolios with insufficient capital. Two, it permitted the thrift regulators to be poor agents for their healthy institutions and taxpayer principals by delaying the imposition of adequate sanctions on troubled associations and failing to resolve economically and, at times, even book-value-insolvent, institutions in a timely manner. Third, increase of coverage limit up to \$100,000 prevented market discipline by depositors.

During 1991, as the banking situation continued to deteriorate rapidly and there was wide spread fear that the banks would go the way the S&Ls, and the FDIC the way of FSLIC and require additional taxpayer funding. In response, at yearend 1991, Congress enacted the FDIC Improvement Act(FDICIA). FDICIA instituted Prompt Corrective Action(PCA), introduced risk-based premium, required the FDIC to use the “least-cost” resolution method.

Several lessons can be factored out from the experiences in United States. First, Moral hazard behavior should be contained and market discipline should be established in order to control the undue risk taking by depositors and banks.

By limiting the amount of deposit protected, market discipline can be exerted by depositors. Depositors demand higher deposit rate or even withdraw the funds in response to the risk taking behavior by bank under limited deposit guarantee system. Had it not been for credible federally provided deposit insurance, savers would have been less likely to have put their funds into failing banks and thrifts in U.S. Moreover, runs by depositors on the insolvent institutions would have automatically forced their closure sooner.

Korea has returned to the partial deposit guarantee system, starting January 2001 with raised coverage limit to 50 million won from 20 million won. Since the market is not showing the sign of instability such as rapid outflows of fund or bank runs, introduction of risk based premium system should be put into consideration. Risk-based premium system prevents the moral hazard behavior by banks by imposing higher insurance premium in response to the bank’s risk taking behavior. Risk-based premium system gives the banks incentive to control their risk at optimal level and thus facilitates the development of credit analysis and risk management skills of the banks. Moreover, fairness could be restored by getting rid of the subsidy effect on the risk taking banks by sound banks.

Applying general insurance theory, DIS needs to have discretion in selecting the risk to take – insured institution and insured deposits - and should be able to control over entry into and exit from

the DIS in order to protect the viability of the insurance fund. FDIC can control entry into and exit from the DIS and has back-up authority to conduct on-site examinations of any insured institutions if necessary.

Second, failure resolution costs should be minimized by controlling the timing of the intervention and adopting the resolution methods through application of PCA and least cost principle. By intervening in earlier stage of insolvency, the deterioration of the assets can be deterred and the moral hazard can be prevented. In this way the resolution costs can be controlled to be minimized. Institutions without capital have incentives to grow and gamble, and this is what weak U.S thrifts did. Requiring and enforcing resolution at such a predetermined and explicit minimum capital ratio represents a “closure” rule. Regulators who tend to forebear can no longer delay closing the institution.

After FDICIA, PCA is introduced in United States. Regulators first use their discretion to get banks to restore depleted capital. But, if the banks do not respond and their capital ratios continue to fall, appropriate sanctions, including resolution at least cost to the FDIC at a pre-specified low but positive capital level, become mandatory. OCC (nationally chartered banks) and FRB (state chartered member banks) are appropriate supervision agencies that exercise enforcement actions, including PCAs. The FDIC is also given the authority to close an institution that was considered to be critically undercapitalized (that is, having a ratio of tangible equity total assets equal to or less than 2 percent) and that did not have an adequate plan to restore capital to the required levels in 1991.

Early warning mechanism has been improved for the KDIC to protect the insurance fund. The revision of DPA at the end of 2000 gave the KDIC the right to examine the failing bank, enabling the KDIC to intervene in earlier stage of insolvency. Still, the KDIC needs to build up a closer information sharing system among the safety net players, FSC, MOFE and BOK.

Different resolution methods result in different recovery outcomes. Deposit insurer being the largest creditor as subrogee for the insured deposit it had paid, has the interest to obtain the maximum possible recovery and hence deposit insurer has a built in incentive to adopt the least-cost resolution method.

By enactment of the Public Funds Special Act in Korea, it is made legally mandatory to adopt the resolution method that is least costly to the fund. Once the financial restructuring is completed and

market stability is restored, least cost principle should be strictly applied confining exercising its discretion. Frequent usage of the exception to the least cost method would have the signal effect that bailout will be continued in the future and this would lead to the moral hazard. It will have the destabilizing effect on the financial market and threaten the viability of insurance fund in the long term.

In U.S. Exemption from least-cost resolution is provided for banks that regulators judge as “too-big-to-fail” and where not protecting their uninsured depositors or creditors from loss “would have serious adverse effects on economic conditions or financial stability.” And this exemption requires a determination that the country’s financial security is threatened by the Secretary of the Treasury upon the written recommendation of two-thirds of both the FDIC Board of Directors and the Board of Governors of Federal Reserve System. Finally, the GAO must review the basis for the decision. The requirement to justify violations of the Act, even ex-post, is likely to improve the regulators’ accountability and make them think twice before taking actions that are outside the spirit of the Act.

As the resolution experiences evolve, the KDIC needs to develop an asset evaluation standard that will provide a basis for resolution of the assets at point of failure or post failure recovery like SAVE(The Standard Asset Value Estimation) methodology of FDIC.²⁸ Also KDIC need to establish the system which is comparable to RAVEN(Risk Analysis and Value Estimation System) in FDIC, which offer the data comprising from the risk management stages to resolution stages. By accessing to this data system, KDIC can monitor the insured financial institution and utilize it in estimating least cost method in timely manner.

Korea has injected the huge amount of public funds so far. From now on management of the injected funds is important and the recovery rate of the injected funds would greatly depend on the performance of fund management. Recovery rates from deposit payoff or contribution are uncertain at this point. Shares comprise major portion of public funds injected and KDIC will be able to recover the funds it has supplied if bank stocks should rise in value to more than their face value. In order to improve the management and hence boost the stock value, the KDIC had signed an MOU with the management of the public fund injected banks prior to any injection of public funds. MOU stipulates

clear and concrete goals for productivity, return on assets, and return on equity. By specifying terms on the penalty and imposing it, should a bank fail to meet these goals, management rationalization should be enhanced.

Amounts of public funds recovered are mainly determined by the method, timing of injection and management of the public funds, and thus whole process of injection and management including recovery of public funds should be consistently overseen by one institution. Deposit insurer being in charge of funding and management of the deposit fund, and recovery record is evaluated in their job performance, it has strong incentive to shorten the resolution period and maximize the recovery.

The U.S. Congress has entrusted the FDIC with virtually complete responsibility for resolving failed federally insured depository institutions and has conferred expansive powers to ensure the efficiency of the process. The FDIC acts as receiver and has separate rights, duties, and obligations from those of the FDIC as insurer. The FDIC also exercises “depositor priority law” in resolving a failed financial institution. These practices give the FDIC to minimize the cost and facilitate the recovery process.

Recovery process has been improved by series of revision of relevant laws. DPA is revised in January, 2000 so that KDIC can maximize the public fund recovery rate through early completion of bankruptcy proceedings. KDIC became able to implement stronger methods of recovery of the public funds by directly performing liquidator and bankruptcy administrator duties, and filing subrogation damage claim lawsuits against the management of failed financial institutions.

As February, 2001, KDIC has investigated 252 financial institutions to find out the causes of the failure and filed the civil/criminal lawsuit. Accordingly, damage claim lawsuits either have been or will be filed against 1,744 individuals for a total of 585.1 billion won. By the revision of the DPA at the end of 2000, KDIC assumed the right to investigate the managements of the corporations who are responsible for the failure of the financial institutions.

²⁸ The Standard Asset Value Estimation (SAVE) methodology requires the use of the “liquidation” scenario mindset in estimating future cash flows. These cash flows are discounted using market-based assumptions from third party and internal sources. The SAVE methodology is implemented in the following processes: 1)Failing financial institution bid analysis 2) Asset disposition decision 3) Receivership management 4) Preparation of the FDIC financial statement.

Lastly it is noteworthy that thrift regulators in U.S. practiced forbearance because the thrift deposit insurance fund was undercapitalized-and in fact became insolvent in the mid-1980s so that it did not have the resources to meet its obligations. It can be concluded that an insurance scheme that is so underfunded that it becomes heavily insolvent does more than harm than good.

Once the financial restructuring is over, the KDIC needs to play its own role, risk preventive measure as a public sector. To enhance the internal capability, systemic support should be provided to KDIC in terms of information system, manpower etc. The KDIC needs to have regular and timely access to the relevant data relating to insured financial institutions necessary to enable KDIC to monitor in advance and resolve failed financial institutions in a timely manner, which can minimize losses to the deposit insurance fund. KDIC employees should be raised to be professionals who excel in the market in the area of risk analysis, asset management, and resolution.

<Reference>

- ," " , *KDIC* , , 2001. 4
- , , 2001.1
- _____ , , 2001. 3
- , , 2000. 9
- , "FDIC " , *KDIC* , , 2001. 4
- Bovenzi, John F. and Arthur J. Murton. "Resolution costs of Bank Failures," *FDIC Banking Review* (Fall 1988), pp. 1-13.
- Bovenzi, John F. and Maureen D. Muldoon. "Failure-Resolution Methods and Policy Considerations," *FDIC Banking Review* (Fall 1990), pp. 1-11.
- Carns, Fredric S. and Nejezchleb, Lynn A., "Bank Failure Resolution, the Cost Test and the Entry and Exit of Resources in the Banking Industry," *FDIC Banking Review*, Fall/Winter 1992, pp.1-14.
- Federal Deposit Insurance Corporation, *Resolutions Handbook: Methods for Resolving Troubled Financial Institutions in the United States*, (Washington, D.C.: FDIC, 1998).
- Federal Deposit Insurance Corporation, *Managing the Crisis, The FDIC and RTC Experience*, (Washington, D.C.: FDIC, 1998).
- Financial Supervisory Commission, Korea, "Financial Sector Restructuring in Korea", August, 1998
- Jose De Luna-Martinez, "Management and Resolution of Banking Crises: Lessons from the Republic of Korea and Mexico", World Bank Discussion Paper No.413, World Bank, March, 2000
- Tomas J. T. Balino and Angel Ubidge, "The Korean Financial Crisis of 1997-A Strategy of Financial Sector Reform, WP/99/28, IMF Working Paper, March 1999