

## 5. Bank Bailout Policy: The Problems of Time Inconsistency and Moral Hazards

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# 5

## **Bank Bailout Policy: The Problems of Time Inconsistency and Moral Hazards**

### **I. Introduction**

Banks are much more likely to be rebuilt than liquidated. Moreover, public funds (taxes) are frequently used when rebuilding is needed. First, let us consider the reason for this. Like any business enterprise, whenever a bank's debt structure worsens to an extreme degree, it becomes necessary to begin bankruptcy proceedings; and how to proceed should depend on a comparison between the value of continuing operations and that of liquidation. However, in the case of banks, there is a greater tendency for the former to exceed the latter than in the case of non-financial enterprises. The reason is that banks have external economies. Furthermore, liquidation value tends to decrease only to the extent that their managers and employees lose the will to continue operations. This is also true of nonfinancial enterprises; however, the value of factories and machinery will probably not decline.<sup>1</sup> However, what happens in the case of banks is that their employees lose the will to continue, resulting in neglect of lending management duties and a decline in the value of loan assets, which are the most important bank holdings. For example, as soon as doubt arises about a borrower's ability to repay his loans, efforts should be made to protect bank claims as early as possible; but if bank employees neglect their duties and fail to notice that a borrower has gone into the red, the resulting lack of effort to protect bank claims can cause large losses in the value of loan assets.

TABLE 5-1  
CLOSURES, NATIONALIZATION, AND MERGERS OF FINANCIAL INSTITUTIONS

Country	Closures	Nationalization	Mergers
Indonesia	64 banks (18%)	12 commercial banks (20%)	4 of 7 state banks to be merged into a single bank (54%)
Korea, Republic of	5 commercial banks, 17 merchant banks, and more than 100 nonbank financial institutions (15%)	4 commercial banks (25%)	9 banks and 2 merchant banks to create 4 new commercial banks (15%)
Malaysia	None	1 commercial bank, 1 merchant bank, and 3 finance companies under central bank control (12%)	6 mergers of finance companies and commercial banks (2%)
Thailand	57 finance companies (11%), 1 commercial bank (2%)	7 commercial banks (13–15%), 12 finance companies (2.2%)	5 commercial banks and 13 finance companies into 3 banks (20%)

Source: World Bank, *Global Economic Prospects and the Developing Countries 2000* (Washington, D.C.: World Bank, 1999), Table 3.5.

Note: Figures in parentheses refer to percentage of assets in the financial sector.

Turning to the reason for using public funds to rebuild banks, external economies are included in the value of continuing operations. It is a very rare case that economic actors in the private sector will be spontaneously willing to pay for such external economies. Therefore, it becomes necessary for public entities, like the government, to step in and inject public funds.

Table 5-1 summarizes how financial institutions were handled in four countries that experienced serious financial difficulties following the Asian currency crisis. The table shows that these countries preferred continuing operations through nationalization and merger to bank closures. This tendency can be seen much more clearly if one looks at the share that the assets (figures in parentheses) of such troubled institutions account for within the whole financial sector. For example, in the case of Indonesia, there were sixty-four banks that were closed; however, the share of their assets within the whole system came to only 18 per cent, which is far less than the total shares of those temporarily nationalized (20 per cent) and those merged (54 per cent).

The high possibility that banks will be reorganized with public funds becomes the cause of moral hazards arising in bank management. This is not a problem for banks that are closed or bailed out, but the way in which such banks are handled is related to the motivation behind managing other banks in the future. When bank managers see how the government is bailing out other banks, they begin to consider how their own banks will be dealt with in the future. Therefore, it is necessary to consider such undesirable side effects when deciding how to deal with failing banks. However, it is almost impossible to avoid the occurrence of moral hazards (hereafter MH) completely because it is difficult for governments to commit themselves to no bank bailouts under any circumstances. Here we have a time inconsistency<sup>2</sup> problem.

In section II below, we would like to shed light on the necessary conditions for avoiding time inconsistency and preventing the occurrence of MH problems. Then in Section III, we will examine the process of policy-making in cases where bank bailouts are being implemented, using the experience of countries in the aftermath of the Asian currency crisis.

## **II. Time Inconsistency and Bank Bailout Policy: Model Analysis**

### **A. Simple Model**

To begin with, we will explain how time inconsistency arises, using a simple model. The model assumes:

- (1) Ex ante decision-making by the government.

TABLE 5-2  
COMPARISON OF BANK FAILURE COST UNDER  
ASSUMPTIONS (2) AND (3)

	a	b
N	0	0
M	$C1$	$C2$

Note: We assume  $C1 > C2$  (Assumption 5).

- A: The government announces that it will not bailout failing banks under any circumstances whatsoever.
- B: The government announces that it will bailout failing banks in time of crisis.
- (2) Behavior by private banks.  
 N: MH will not occur.  
 M: MH will occur.  
 (In addition, when the government implements bank bailouts, MH behavior is advantageous; when the government refuses to bail out banks, such behavior become disadvantageous.)
- (3) Ex post actual government action  
 a: No bank bailouts implemented.  
 b: Bank bailouts implemented.
- (4) Any bank involved in MH will fail, and any failing bank not involved in MH will not fail. (This stipulation will be loosened later.)
- (5) The social cost of bank failure ( $C$ ) is less when the bank is bailed out. (See Table 5-2.)

From Table 5-2, we find that the lowest costs involved in bank failure will be incurred by the combinations of actions (N, a) and (N, b).<sup>3</sup>

From the government's point of view, the following combination of policies and private sector reaction becomes ideal. First, the government announces its no-bailout policy in advance with the intention of preventing MH. Then banks do not become involved in MH, believing that the government will carry through with its decision. When this is the case for this simple model, no bank failure will occur, so ex post government policy becomes superfluous. Whether the government adopts a bailout policy or no-bailout policy makes no difference, since there will be no bank failures. However, it is highly possible that the banks simply do not believe in the government's commitment to a no-bailout policy. The reason for this is that the government has every incentive to bailout banks once they fail, regardless of its ex ante announcement. When dealing with actual incidents of MH, the government

TABLE 5-3  
BANK FAILURE COST COMPARISON ASSUMING  
MH INCIDENCE

	a	b
M	C1	C2

makes its “ex post” choices looking at the second row of Table 5-2 (see Table 5-3).

Since  $C1 > C2$ , despite ex ante announcements, there is incentive on the part of the government to bailout banks ex post (action b). Banks that discover this fact will act rationally and cause MH (action M), regardless of previous government announcements.

### B. Examination of the Simple Model

Let us first examine the policy of not bailing out banks in order to prevent MH. As seen above, in order to solve problems caused by time inconsistency, expectations held by banks concerning how the government will act in the future are very important; and these will depend on whether or not banks expect that the government will not bail out banks in the future. Whenever time inconsistency exists, banks will not believe that the government will carry through with its announced future policy. Therefore, one way or another it is necessary to narrow the kinds of behavior in the future. As a rather far-fetched example, adding an amendment to the national constitution prohibiting bank bailouts would increase trust in the government’s policy statements; but even such a step would not result in complete trust since the constitution could be amended once again in the opposite direction. Thus, when conditions are right for the rise of time inconsistency, solving the problem completely becomes a very difficult task indeed.

Therefore, the question arises as to whether it is actually possible to solve the problem of time consistency by implementing a non-bank-bailout policy during a banking crisis. The intent behind the claim that no bank bailouts will be carried out is to prevent future MH. Any attempt to show that the government intends to carry through with its decision will probably shore up trust; but it will not be complete. For example, people may trust the present government’s intentions, but that does not mean that they will trust the intention of any future government.

In sum, since the past action of governments does not directly narrow the measures available to governments in the future, the possibility of persuading

banks is not completely assured. But other than the difficulties presented here, we should examine whether or not the problem of time inconsistency actually exists in the first place. Particularly in the context of developing countries, conditions giving rise to time inconsistency may in fact be absent; and if so, what are the policy implications?

### C. A General Model

Here let us examine a model in which the above assumptions for our simple model are modified to be more in line with general conditions. Assumptions (1), (2), (3), and (5) will remain unchanged, while (4) will be revised as follows.

- (4') The probability of failure ( $P_m$ ) for those banks that cause MH will increase, but will never reach 100 per cent. Also, the probability of failure ( $P_n$ ) for those banks that do not cause MH will never be zero.

However, it is more likely that MH banks will fail. We assume  $P_n < P_m$ .

Assumption (5) remains the same; but even when a bank chooses behavior N, there is still a chance that it will fail, necessitating a revision of Table 5-2; and since it becomes a random event, we need to distinguish between ex ante and ex post cost. First, let us consider the cost of dealing with bank failure ex post. (See Table 5-4.)

Turning to ex ante costs, since expected cost is the problem here, we multiply ex post cost by the probability of bank failure (Table 5-5).

Here, we will add two more assumptions concerning ex post cost.

- (6)  $C_{na} > C_{nb}$ ,  $C_{ma} > C_{mb}$ . This assumption is the most plausible, given that bank bailouts reduce the cost of bank failures.

TABLE 5-4  
COST OF BANK FAILURE: EX POST

	a	b
N	$C_{na}$	$C_{nb}$
M	$C_{ma}$	$C_{mb}$

Note:  $C_{na}$  is the cost incurred by a non-MH bank failure under a policy of no bank bailouts;  $C_{nb}$  is the cost incurred by non-MH bank failure when bank bailout measures exist;  $C_{ma}$  is the cost incurred by MH bank failure under a policy of no bank bailouts; and  $C_{mb}$  is the cost incurred by MH bank failure when bank bailout measures exist.

TABLE 5-5  
EXPECTED COST OF BANK FAILURE: EX ANTE

	a	b
N	$P_n C_{na}$	$P_n C_{nb}$
M	$P_m C_{ma}$	$P_m C_{mb}$

TABLE 5-6  
ORDER OF EX ANTE EXPECTED COST OF BANK FAILURE:  
CASE 1

	a	b
N	2	1
M	4	3

Note: The less the integer, the lower the cost.

TABLE 5-7  
ORDER OF EX ANTE EXPECTED COST OF BANK FAILURE:  
CASE 2

	a	b
N	3	1
M	4	2

Note: The less the integer, the lower the cost.

(7)  $C_{na} < C_{ma}$ ,  $C_{nb} < C_{mb}$ . This assumption is the most plausible, given that banks who cause MH increase the cost of failure.

From assumptions (6) and (7), it turns out that  $C_{ma}$  is the largest value, whereas  $C_{nb}$  is the smallest. However, we cannot determine the relative size of  $C_{na}$  or  $C_{mb}$ . Similarly, from assumptions (4'), (6), and (7),  $P_m C_{ma}$  is the largest value, whereas  $P_n C_{nb}$  is the smallest. We cannot determine the relative size of  $P_n C_{na}$  or  $P_m C_{mb}$ .

Now, when  $P_n = 0$ ,  $P_m = 1$ ,  $C_{ma} = C1$  and  $C_{mb} = C2$ , Tables 5-4 and 5-5 become identical to Table 5-2 for our simple model. In other words, the simple model is a special case of the general model.

#### *Discussion 1: Optimum outcome*

First, let us consider if an optimum outcome can be achieved before the fact; that is, where the expected costs in Table 5-5 are minimized. Tables 5-6 and 5-7 show two possibilities concerning the order of expected costs.

In either case, the combination of actions N and b is the most desirable outcome (results in the lowest cost), while combination (M, a) represents the worst scenario.

The problem is whether combination (N, b) can actually be realized. From assumption (2) the choice of action N by banks can only be realized if they believe that the government will indeed carry through with its no bailout policy. On the other hand, in order to attain the optimum outcome, the government must choose to bailout banks after the fact (action b). Therefore, the optimum outcome can only be realized if (1) the government succeeds in persuading the banking industry that it will not bail them out, and (2) it reneges after the fact and decides to bail banks out. In other words, it depends on the government being able to deceive the banking industry, which is very difficult, and probably impossible, in reality. This is because if the banking industry assumes that the government is acting rationally, it is very difficult for the latter to outwit the former. Therefore, we conclude that in general, it is impossible to achieve the optimum outcome.

*Discussion 2: The next best outcome A (corresponding to Case 1)*

There are two different cases for the next best outcome. In Case 1 (Table 5-6), the next best combination of behavior is (N, a). Here, the government (1) succeeds in persuading the banking industry that it means what it says in deciding against bailouts, and (2) in fact carries through with that decision. In this case, it is possible to adopt the discussion for the time inconsistency framework in the simple model. In other words, (N, a) can only be realized if the banking industry is thoroughly convinced that the government will not bail it out under any condition. If not, (M, b) will be realized.

*Discussion 3: The next best outcome B (corresponding to Case 2)*

The general model becomes more interesting when operating under Case 2 (Table 5-7). Here the next best combination is (M, b), in which (1) the government decides to bail out banks, and (2) banks are causing MH. Such conditions are extremely easy to achieve, since the government does not have to announce its policy in advance and the actions it takes after the fact are consistent with its motivation, meaning that time inconsistency will not arise. Therefore, in this case, there is no use in trying to employ a non-bailout policy in the first place. Before going into the policy implications here, let us consider the conditions under which Case 2 happens.

*Discussion 4: The boundary between Case 1 and Case 2*

What are the conditions that separate Cases 1 and 2? Let us consider how

Case 2 comes about. The following two equations express the differences between the two cases.

$$\text{Case 1: } P_n C_{na} < P_m C_{mb},$$

$$\text{Case 2: } P_n C_{na} > P_m C_{mb}.$$

Therefore, the higher  $P_n$  or  $C_{na}$ , the easier it is for Case 2 to happen. Transforming the conditions that make Case 2 possible, we come up with

$$C_{na} / C_{mb} > P_m / P_n;$$

the smaller the right side and the larger the left side, the more probable Case 2 will become.

#### *Macro shock*

What causes  $P_m / P_n$  to become smaller is the existence of macro shock. Macro shock is uncertainty that influences the whole economy, but here let us express it as a factor increasing the possibility of bank failures, regardless of whether or not individual banks are causing MH.

The probability of bank failure can be expressed as

$$P_m = \alpha_m + \beta,$$

$$P_n = \alpha_n + \beta,$$

where  $\alpha_m$  and  $\alpha_n$  are changes occurring in bank behavior, and  $\alpha_m > \alpha_n$ ; and  $\beta$  is a common factor expressing macro shock: for example, the possibility of bank failures due to circumstances affecting the whole economy, like instability stemming from macro-economic policy errors. In that case:

$$\begin{aligned} \frac{P_m}{P_n} &= \frac{\alpha_m + \beta}{\alpha_n + \beta} \\ &= \frac{\alpha_m - \alpha_n}{\alpha_n + \beta} + 1. \end{aligned}$$

Therefore, the larger the value of  $\beta$ , the smaller the value of  $P_m / P_n$ , and the easier it is for Case 2 to occur.

For example, in developing countries, where macroeconomic instability is high and there is a strong possibility of a banking crisis occurring, Case 2 is likely to happen regardless of how well banks are being managed.

#### *Different safety nets*

Differences in safety nets to combat banking crises affect the magnitude of  $C_{na} / C_{mb}$ . The desirable safety net for a financial system that assumes the government will not bail out banks differs from the one that assumes it will.

Furthermore, the type of safety net that has been prepared in an economy will affect the magnitude of the social cost of bank failures.

Safety nets set up under the assumption that bank bailouts will not be implemented (Type A) necessitate measures other than bailouts that prevent a crisis from deepening. For example, if inter-bank settlements are carried out through an RTGS mechanism, the possibility of a chain reaction of bank failures can be lessened. Also, the prompt disclosure of bank-related accounting information is an important measure for preventing a chain reaction of bank runs by worried depositors. It would also be effective if the government could spot any worsening bank operations at an early stage and take early corrective measures. In other words, prompt corrective action is effective.<sup>4</sup>

Safety nets that presume bank bailouts (Type B) necessitate measures that ensure continuous, effective implementation of bailout policy. For example, if a country has explicit legislation that describes procedures for government-led bank bailouts and financial restructuring, cleaning up after a financial crisis would be smoother and involve less pain.

Type-A safety nets are relatively well prepared in developed countries compared to ones in developing countries. Therefore, it can be assumed that developing countries tend toward having rather large  $C_{na}/C_{mb}$  numbers, which makes the occurrence of Case 2 more likely. Furthermore, in recent years research has been published, mainly by the World Bank, concerning the pros and cons of setting up a deposit insurance system, arguing that in the case of institutionally weak governments, the adoption of such a system could increase the possibility of a financial crisis occurring (World Bank 2001, Chap. 2; Demirguc-Kunt and Kane 2002). Since deposit insurance systems are considered to be type-B safety nets, their introduction makes it easier for Case 2 to occur which increases the chances of a financial crisis breaking out. This argument is consistent with the model presented here.

The institutional strength of a particular government is also important. When considered in the light of the present model, it can be assumed that institutionally capable governments set up type-A safety nets simultaneously with their type-Bs. For that reason, the effects of both cancel each other out, and the introduction of a deposit insurance system will not increase the chance of a financial crisis occurring. Institutionally weak governments, on the other hand, may have difficulty in introducing type-A safety nets.

In recent years the trend has been to decrease the number of banks and increase their size through mergers and acquisitions. However, this can be dangerous because the failure of a gargantuan bank will have a much worse impact on the economy as a whole, meaning a rising  $C_{na}$  in the above model, making Case 2 more likely to occur.

Moreover, the heightened of competition among banks and between banks and other financial institutions because of deregulation may improve the efficiency of banking operations, but it may also increase the probability of bank failures.<sup>5</sup> If we assume that the probability of bank failure has the same effect on MH and non-MH banks alike, deregulation becomes a factor raising  $\beta$ .

#### **D. Policy Implications**

The most important conclusion to draw from the above model is that if Case 2 occurs, there will be no problem of time inconsistency, which means that adopting a bank bailout policy will be the next best measure to take (when the optimum cannot be implemented.) Moral hazards will occur, but they should be tolerated.

There is the possibility of Case 2 scenarios occurring in at least some of the world's developing countries, especially when there is a lot of macroeconomic instability, and type-A safety nets are not well prepared. Therefore, non-bailout policies cannot be recommended unconditionally. Rather, the preparation of type-A safety nets and improvement in macroeconomic policy to prevent or decrease the occurrence of macro shock should take priority over non-bailout policies. Only after conditions for Case 1 develop does it become important for governments to persuade banks that bailouts will not be implemented, and to set up mechanisms through which governments can commit themselves to non-bailout policies.

The intention here is not to give the impression of favoring bank bailouts or wishing to legitimize them; rather, it is to clarify the preconditions for meaningful non-bailout policies, i.e., setting up Type-A safety nets, improving macroeconomic policy frameworks to minimize macro shock and setting up institutional mechanisms to ensure that bank bailouts will not be carried out. Considering the need for such preconditions, it is hard to criticize any country unconditionally for adopting bank bailouts as a means to control a financial crisis. It is probably better to make decisions on a case-by-case basis, because it is only after the above conditions have been satisfied that a non-bailout policy becomes advisable and effective.

Although the above mentioned research done on the effects of deposit insurance systems is consistent with the model offered in this chapter, we differ widely about policy implications. In contrast to the World Bank's argument that institutionally weak governments should not introduce deposit insurance systems, the present model does not suggest such an unconditional approach. This is because in a Case 2 scenario, the second best response to a

banking crisis is adopting a bailout policy. An unconditional statement that “banks should not be bailed out under any conditions” prevents people from thinking about bailouts which can be a less harmful approach. Discussion of this point has been far too scarce in the relevant research. Therefore it is very important to examine how to go about the task when a bank bailout policy is an acceptable option. The following section will address that issue.

### **III. How to Conduct a Bank Bailout Program**

#### **A. Infusing Capital Funds**

Even after the decision has been made to begin bailing out banks, attention must be paid to moral hazard problems. Although there is no way of completely avoiding MH, policy considerations should be made to mitigate their effect. For example, methods that invest government funds in failing banks cost-free are not desirable since granting subsidies to failing banks is the same thing as imposing penalties on healthy banks. Instead, the government should infuse capital funds on an investment basis giving it stockholder rights and guaranteed dividends. Moreover, government investment should be made following capital reductions, thus penalizing existing stockholders for their failure to discipline bank management. An even more stringent method is to dissolve the bank, then reorganize it as a new corporation using government funds.

When the government invests a large amount of funds, it becomes the equivalent of nationalization; and when the investment exceeds 50 per cent of the total, the problem arises as to how the government should act as the majority stockholder. The usual thinking is that even when infusing such a large amount of capital, the government should never become involved in bank management. However, there are problems with this thinking.

A major one is the problem of agency cost. If the government neglects its duty as a stockholder to supervise and monitor bank operations, leaving the task up to others, there is a real possibility that following the infusion of funds, the bank’s corporate governance will be weakened. Since the share of other stockholders will be diluted in proportion to the increase in the government’s share, the former’s incentive to supervise and monitor the performance of bank management will be weakened. If the government does not compensate for such tendencies, stockholder supervision and monitoring will be weakened on the whole. When the government contributes 100 per cent of the funds (complete nationalization), there are no other stockholders to keep the bank in line, so the government has no other choice than to take over that

responsibility. However, the government should not intervene in bank operations other than to make sure that they are being conducted properly. For example, actions like the government putting pressure on bank managers to allot funds on a priority basis to specific borrowers would merely damage the bank's efficiency.

The government can also have conflicts of interest when infusing funds because of its multi-faceted duties. For example, the government is also interested in stabilizing the economy and maintaining national employment, and is capable of forcing conditions on banks that could be detrimental to their healthy management. One case in point is the government demanding that a bank continue to grant credit to a large, but failing, enterprise out of fear of the impact that bankruptcy would have on employment. In order to avoid such problems, it is important for administrative agencies to be put in charge of guiding bank management following the infusion of funds, and they need to behave like private sector stockholders who are mainly interested in maximizing corporate value. Here institutional measures are needed to guarantee that these agencies possess a high degree of independence from politics and other sectors of the government. The ultimate aim of nationalization is to return the bank to the private sector. Permanent nationalization is never desirable, and if at the beginning there is someone in the private sector that is willing to take over, it is always preferable to bolster the capital base with private sector rather than government funds. Therefore, the above discussion always assumes that there is no other party willing to merge or acquire the bank in question.

At the time of the Asian currency crisis, government-sponsored recapitalization of financial institutions was carried out on a fairly large scale in countries like Indonesia, the Republic of Korea, Malaysia, and Thailand. As shown in Table 5-8, public funds in amounts ranging from 10 to 60 per cent of GDP were infused into banks and other financial institutions. Such amounts would have been extremely difficult for the private sector to procure spontaneously. That is why investment on the part of the government was the only alternative. Probably the best conceived scheme for government involvement following the infusion of public funds was the one adopted in Malaysia, where the administrative agency for monitoring bank management was established as a public corporation, independent from other government agencies. Indonesia also set up an independent agency, Indonesian Bank Restructuring Agency (IBRA); however, it was plagued by conflicts of interest because of the huge variety of responsibilities that the government placed on it, including settling nonperforming loans and the planning of a financial revitalization strategy.

TABLE 5-8  
ESTIMATED RECAPITALIZATION COSTS FOR COMMERCIAL BANKS, MID-OCTOBER 1998

	Estimated Costs	Amount Disbursed	Percentage of GDP	Remaining Fiscal Costs as Percentage of GDP
Indonesia	550 trillion rupiah	100 trillion rupiah	11	48
Korea, Republic of	72 trillion won	56 trillion won	13	4
Malaysia	31 billion ringgit	13 billion ringgit	4	6
Thailand	1,121 billion baht	751 billion baht	16	8

Source: World Bank (1999, Table 3.6).

## B. The Administrative Framework of Bank Restructuring

As seen in the previous discussion, the framework for government involvement in bank restructuring is another important aspect. The institutional framework adopted by the government must be able to cope with the task at hand. The administrative agencies involved must be both capable and clear about what they intend to do. They must also be motivated to carry out the restructuring process as swiftly as possible. However, bureaucratic mechanisms by their nature do not function expeditiously. Business as usual at “city hall” involves piles of unnecessary paperwork that takes a lot of time to process. Therefore, it is necessary to motivate administrative agencies to speed up the normal bureaucratic process in the case of bank restructuring by, for example, setting up deadlines and requiring periodic progress reports from legislative bodies. A lack of such motivation will likely result in the failure of initial government involvement in a banking crisis.

It is also important to set up a proper institutional framework for deciding what sort of tasks should be entrusted to what administrative agencies. It is not wise, and even dangerous, to entrust total crisis management to the central banks.<sup>6</sup> Because its most important task is currency stabilization, in a banking crisis there is a distinct possibility of the central bank making errors in policy judgment. The central bank could hesitate to act quickly to assist banks in crisis because of worries that such assistance could worsen its own financial position and go against its obligation to stabilize the currency.<sup>7</sup> Therefore, it is probably wisest to allow the central bank to concentrate on its essentials duties and set up a separate agency to deal with a banking crisis. Furthermore, it is probably also necessary to have an institutional division of labor among several administrative agencies, separating such tasks as overall policy-making for financial restructuring and implementation, guidance and the infusion of funds into banks, and the settlement of nonperforming bank loans. Such a

TABLE 5-9  
COMPARISON OF INSTITUTIONAL DESIGNS FOR BANK CONSOLIDATION

Country	Unrecoverable Loans	Recapitalization	Revitalization
Indonesia	IBRA	IBRA	IBRA
Korea, Republic of	Korea Asset Management Corporation	Korea Deposit Insurance Corporation	Korea Financial Supervisory Commission
Malaysia	Danaharta	Danamodal	none <sup>a</sup>
Thailand	none <sup>b</sup>	Financial Institutions Development Fund	none

Source: Compiled by the author.

<sup>a</sup> However, the funds infusion agency, Danamodal, was very active in supervising and supporting the banks it funded.

<sup>b</sup> Until TAMC was finally set up in the summer of 2001.

multi-faceted arrangement would help avoid the kind of conflicts of interest mentioned above. The Asian countries adopted differing institutional arrangements for dealing with their currency crises. Table 5-9, which shows the various institutional frameworks actually adopted, shows that the Republic of Korea and Malaysia set up a division of labor in their respective plans.

In this respect the plans adopted by Indonesia and Thailand were problematic. In Indonesia the Indonesian Bank Restructuring Agency (IBRA) set up after the currency crisis was markedly overburdened with the total task of bank restructuring. Such overburdened agencies are in constant danger of conflicts of interest. In the case of Thailand, the government took a far too passive attitude. For example, even in the settlement of nonperforming loans, the government merely urged banks to set up private asset management companies among themselves, then it ended up organizing the extremely belated government-funded Thai Asset Management Corporation (TAMC) during February 2001. No government agency was set up that specialized in revitalizing banks.

#### IV. Conclusions

In this chapter we have looked at how a financial crisis is and should be handled after the fact. Section II presented a model analyzing the problems of moral hazard connected with bank bailouts from the standpoint of time inconsistency. Then policy implications, like the pros and cons of bailouts, were

examined based on the model, and the results supported the argument for bailouts under certain conditions. However, when bailouts are called for, they need to be implemented with close attention paid to MH and conflicts of interest within the administrative agencies involved.

Section III outlined certain points of concern regarding public fund injections and administrative frameworks when dealing with failing banks, using the kinds of policies adopted in Asia after the currency crisis.

The time inconsistency model developed in Section II can also be used within an international context. For example, in research on the outbreak of the currency crisis, it has been argued that the support lent by the IMF gave rise to MH. For this reason, some researchers have criticized IMF support as both unproductive and harmful. In this respect, it is possible to apply to countries a time inconsistency model applicable to bank bailouts, because bank bailouts and the bailout of a country have many things in common. The predicted conclusion can be stated as: the more important that the factors behind the outbreak (and spread) of a currency crisis are not related to the occurrence of MH, the greater the possibility that bailouts will be appropriate (similar to the reasoning related to macro shock presented in this chapter). Also, the appropriateness of bailouts probably differs according to the magnitude of the social cost of the crisis when IMF support is provided and when it is not (similar to  $C_{na}$  and  $C_{mb}$  in the model presented here).

### **Appendix 5-1. The Ever-Growing Duties and Assets of IBRA**

The initial duties that the Indonesian Bank Reconstructing Agency (IBRA) was expected to assume were fourfold:<sup>8</sup>

1. Planning and implementing the revitalization of the banking sector: Identifying banks that should be closed, determining capital infusion into banks that should continue operations, and rebuilding and re-privatizing nationalized banks.
2. Implementing and supervising of capital infusion into the banking sector: Managing the government funds invested in banks, and dealing with the issue of public stock offerings for the purpose of re-privatization.
3. Settling nonperforming loans: Restructuring and disposing of nonperforming loans transferred from closed or recapitalized banks.
4. The management and sale of other government acquired assets related to the banking crisis: IBRA seized the assets of bank owners who had received

APPENDIX TABLE 5-1  
PRIVATE SECTOR ASSETS HELD BY IBRA

Type	Worth (U.S.\$100 million)	Notes <sup>a</sup>
Outstanding loans of closed banks; unrecoverable loans of recapitalized banks	278	From Duties 1 and 3
Moveable property and real estate holding of closed banks	9	From Duty 1
Stock of recapitalized banks	155	From Duty 2
Stock and other assets of private enterprises	154	From Duty 4
Total	596	Equivalent to 1.6 × the 2001 national budget

Source: “Indonesia: Shisan baiyaku ni chikara” [Indonesian efforts to liquidate assets], *Nikkei kin’yu shimbun* (Tokyo), December 15, 2000.

<sup>a</sup> Added by the author.

funding support from the central bank and later failed to repay; such seizures were regarded as “penalties” for legal infractions (i.e., ignoring lending regulations). It became an important duty of IBRA to manage or sell these assets, such as enterprise group stock, and convert them to cash.

Given the fact that just one of the above four duties presents a monumental task for any agency, it is clear that IBRA was overburdened, was confronted with conflicts of interest and overwhelmed by other difficulties. Because of the diversity of its duties, IBRA was inundated with assets from the private sector. As shown in Appendix Table 5–1, the assets that IBRA accumulated were worth 1.6 times the amount of the national budget. While there may have been “economies of scale” in such a huge concentration, it was definitely a situation ripe for political dealing and corruption, and on a number of occasions IBRA has become embroiled in suspicions of foul play and political wheeling and dealing. Such extracurricular activities are of course detrimental to the “swift action” so necessary in dealing with a financial crisis.

## Notes

This and the previous chapters are based on an expanded version of Kunimune (2001b).

- 1 Factory and machinery value may decline, for example, when there is precision equipment involved that requires close monitoring and maintenance on a daily basis.
- 2 Also referred to as “dynamic inconsistency.” See Kydland and Prescott (1977).
- 3 In this case, since bank failures will not occur, it is not necessary for the government (even if prepared) to actually implement bank bailouts.
- 4 Governments that respond in such ways are best able to persuade people that other banks are safe and thus prevent depositors from becoming panic-stricken and causing banks runs.
- 5 Stimulated competition cancels bank rent obtained under a protective policy and may eliminate the buffers that exist for responding to fluctuations in profits caused by various degrees of risk. This is why more competition can increase the probability of bank failures.
- 6 However, in order to avoid a chain reaction of runs on even healthy banks, only the central bank can act as the lender of last resort.
- 7 Here we have another case of “conflict of interest.”
- 8 See Takeda (2000) which, however, divides the duties of IBRA into three categories.