

Yale University

## EliScholar – A Digital Platform for Scholarly Publishing at Yale

---

YPFS Documents (Series 1)

[Browse by Media Type](#)

---

2001

### Recapitalizing Banks with Public Funds

Charles Enoch

Gillian Garcia

V. Sundararajan

Follow this and additional works at: <https://elischolar.library.yale.edu/ypfs-documents>

---

#### Recommended Citation

Enoch, Charles; Garcia, Gillian; and Sundararajan, V., "Recapitalizing Banks with Public Funds" (2001). *YPFS Documents (Series 1)*. 12580.

<https://elischolar.library.yale.edu/ypfs-documents/12580>

This Document is brought to you for free and open access by the Browse by Media Type at EliScholar – A Digital Platform for Scholarly Publishing at Yale. It has been accepted for inclusion in YPFS Documents (Series 1) by an authorized administrator of EliScholar – A Digital Platform for Scholarly Publishing at Yale. For more information, please contact [elischolar@yale.edu](mailto:elischolar@yale.edu).



palgrave  
macmillan

---

Recapitalizing Banks with Public Funds

Author(s): Charles Enoch, Gillian Garcia and V. Sundararajan

Source: *IMF Staff Papers*, 2001, Vol. 48, No. 1 (2001), pp. 58-110

Published by: Palgrave Macmillan Journals on behalf of the International Monetary Fund

Stable URL: <https://www.jstor.org/stable/4621660>

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

*International Monetary Fund* and *Palgrave Macmillan Journals* are collaborating with JSTOR to digitize, preserve and extend access to *IMF Staff Papers*

## Recapitalizing Banks with Public Funds

CHARLES ENOCH, GILLIAN GARCIA, and V. SUNDARARAJAN\*

*Recapitalizing banks in a systemic crisis is a complex medium-term process that requires significant government intervention and careful management at both the strategic and individual bank levels. This paper examines the range of operational and strategic issues involved and the institutional arrangements needed to foster an effective banking system restructuring, as well as maximize the returns on government investment. Recapitalization approaches have varied in the different mixes of direct capital injections and asset purchases and rehabilitation that countries choose. The choice of an appropriate mix is critical to minimizing the expected present value of government outlays net of recoveries. [JEL G1, G21, G32, H81, O16]*

Consider the following scenario: a banking crisis has erupted and has begun to intensify and spread. In response, the government decides to restructure and recapitalize the banks in order to overcome the negative effects of a dysfunctioning banking system on economic growth and wealth. This decision is taken because weaknesses in the financial system and extreme uncertainty that prevails during the crisis have limited private capital, and the government fears that banks will fail in large numbers. It hopes that the injection of public funds to strengthen bank capital, together with additional financial and operational restructuring of banks, will restore public confidence in the banking system, reduce uncertainty,

---

\*This paper was written with help from colleagues in the IMF's Monetary and Exchange Affairs Department and able research assistance from Elena Budreckaite. The paper benefited from the comments of Stanley Fischer, Stefan Ingves, and Carl-Johan Lindgren. An earlier draft was reviewed by Charles Adams, Bijan Aghevli, Peter Heller, and Leslie Lipschitz of the IMF, and Jonathan Fiechter, Larry Promisel, and Thomas A. Rose of the World Bank. The authors are also grateful for comments from two anonymous referees.

accelerate resolution of the banking crisis, and promote economic recovery through reestablishing banking and payment services, and ensuring that viable businesses can fund their operations. From 1994 to 1999 these circumstances confronted a number of countries in Asia, Central and Eastern Europe, the former Soviet Union (FSU), and the Americas.

In systemic bank restructuring, public funds may be needed to (1) make payouts to depositors of closed banks; (2) compensate banks that agree to accept deposit transfers; (3) facilitate an acquisition, merger, or purchase and assumption; (4) help recapitalize banks; and (5) restructure assets. This paper focuses specifically on operational and technical issues that relate to the last two items: the granting of assistance through capital injections and asset rehabilitation to facilitate the continued operation of banks that are to be kept open. The paper examines, in sequential order, the choices that must be made and the steps that have to be taken to implement the decisions. The discussion draws on the experiences of five Asian countries, Mexico, Sweden, and the United States.

For many of the issues covered in this paper<sup>1</sup> there is no single practice that is clearly superior based on theoretical or analytical grounds. Decisions must be taken case by case, and often they are based on specific institutional factors—such as the legal system of the country or the availability of skilled resources to manage problem assets. Drawing on the experiences of select countries, this paper seeks to identify the important factors influencing the decisions in such trade-offs, as well as the best practices that should be adopted given whichever choice the authorities make.

## I. Bank Restructuring Agency: Organizational Issues

Our analysis starts at the point where the government intervenes in a banking/currency crisis by using public funds for bank recapitalization. Before reaching this point the government should have made a preliminary estimation of the costs of restoring a functional banking system.<sup>2</sup> The government should have formulated an overall strategy for bank restructuring, encompassing the following key elements: (1) diagnosis; (2) triage;<sup>3</sup> (3) prompt exit of nonviable banks;<sup>4</sup> (4) a well-designed recapitalization strategy for viable and essential banks; (5) operational restructuring of banks; (6) efficient management and recovery of nonperforming assets, supported by loan workouts; (7) equitable loss-sharing arrangements and containment of public sector costs; and (8) a strengthening of prudential supervision of banks to prevent further accumulation of losses.

<sup>1</sup>The paper does not discuss in detail certain related matters, such as the rationale for the use of public funds, the deposit insurance agency (DIA), the need for, and methods of, taking legal recourse against criminal acts, and corporate restructuring. More in-depth discussions of forbearance, asset management corporations, and lender of last resort facilities are presented in other papers.

<sup>2</sup>The design and sequencing of bank restructuring and prudential supervision reforms, taking into account their macroeconomic impact, are discussed in Alexander and others (1997), and Sundararajan (1999).

<sup>3</sup>See Appendix I for a definition of the term.

<sup>4</sup>The form of resolution for a problem bank—closure and liquidation, partial or complete merger, temporary “bridge bank,” or support to keep the bank operating—depends upon the bank’s governance, its financial condition, and its franchise value.

Of course, a key limitation on the government's plans for intervention is the amount of public funds it has available. However, an equally fundamental constraint is the availability of human resources, which will influence the organizational structures used in the intervention. These constraints may be more binding in some countries than in others.<sup>5</sup>

Putting a recapitalization strategy into operation will frequently require legal and institutional changes, including the possible creation of public bodies, such as a bank restructuring agency (BRA) to oversee the comprehensive restructuring strategy. The BRA establishes the principles by which some banks are selected for closing and others for recapitalizing and restructuring. The BRA may have two key components or subsidiaries: a bank support authority (BSA) that holds equity, and in some cases may lend to safeguard the value of its equity holdings; and one or more asset management companies (AMCs)<sup>6</sup> that manage and restructure the assets taken from intervened banks, and buy bad loans and dispose of them.<sup>7</sup> In the case of Sweden, authorities created an oversight board for the BRA, with separate AMCs as subsidiaries. Sweden, which has a relatively developed financial system with considerable operating experience in a market environment, nevertheless encountered shortages of financially skilled labor to run these organizations. In other situations, such as in transition economies, a simpler structure with clear lines of authority and accountability may be more appropriate.

The authorities must make a number of organizational decisions relating to the BRA. The first is whether to use existing agencies or create a new organization—to oversee recapitalization and restructuring, take control of funds that have already been committed, make and manage additional investments in banks, and later sell them cost-effectively.<sup>8</sup> Where a deposit insurance agency (DIA) is already in place and can be expected to competently manage the crisis, it may be augmented to handle the challenge, but such a situation is relatively unusual. Often there is no DIA; in some cases the existing DIA is blamed for allowing banking problems to deteriorate into the current crisis; and, typically, the magnitude of the crisis is so grave that a new agency is needed.<sup>9</sup>

---

<sup>5</sup>The government should appoint independent, professionally competent executives and boards to manage banks that are taken over. If it proves difficult to find such individuals, the use of international bankers, accounting firms, and investment bankers becomes critical to fill part of the human resources gap. Otherwise, human resource constraints may influence the design of the restructuring and recapitalization program, and place a premium on identifying economies of scale in resolving banks, and on efficient clustering of banks.

<sup>6</sup>See Nyberg (1997).

<sup>7</sup>In the early stages of a bank restructuring process, provision of proper information to the public helps to restore confidence, and such information will include a brief description of the organizational structure that will be established to manage the bank restructuring and the legislative changes necessary to set up the BRA and to grant it powers to successfully discharge its responsibilities.

<sup>8</sup>See Nyberg (1997).

<sup>9</sup>Indonesia, Malaysia, and Thailand have no DIA and thus required a special agency. Although Korea has an existing DIA, it also created a special agency to handle its bank problems. During the bank and thrift problems of the late 1980s and early 1990s in the United States, the Bank Insurance Fund (BIF) was judged able to handle the banking problems and resolved 1,394 failed banks between 1984 and 1992. The thrift regulator and insurer, however, were replaced by a new regulator, and a special temporary agency, the Resolution Trust Corporation (RTC), was created to manage the crisis (Alexander and others, 1997, pp. 86–91).

The second decision is whether to make the agency independent or an integral part of the government. The agency in charge of restructuring will need clear legal authority to determine—using universally applied and transparent criteria—which banks should receive public capital assistance and which should not. The agency should be autonomous to make and implement resolution decisions, and also be held accountable for its actions. After decisions are implemented, they need to be made transparent and explained thoroughly. No governments give full independence to a BRA where a large percentage of GDP is devoted to recapitalizing banks. Accountability to parliament in most countries is achieved through a ministry. The Ministry of Finance (MOF), as guardian of the public purse, is a typical choice among government agencies to manage restructuring. The central bank or an independent bank supervisor are also possibilities. Government agencies, however, are not usually involved in the day-to-day business of running banks, and when they attempt to do so, the arrangement has frequently not been very effective because of governance problems. Consequently, while it is appropriate that the government's interest in the success of the BRA's operations be explicitly recognized in the agency's organizational structure, it should also protect the operating units from political interference in the day-to-day operations, and make them to be functionally independent, and publicly accountable.

While there are several ways to achieve a compromise between accountability and independence, one institutional model for bank restructuring is shown in Figure 1. Within this framework, the BRA is an agency subordinate to the MOF and separate from an independent central bank, the supervisory agency,<sup>10</sup> and the DIA.<sup>11</sup> It is wise not to place the BRA within the central bank, so as to avoid incentives to finance restructuring through money creation. It can also be argued that the supervisory agency should not run the BRA because it has no sources of finance and may be tempted to give preferential supervisory treatment to banks that it owns. Moreover, while the DIA could handle nonsystemic banking failures, it lacks the financial and human resources and the authority to deal successfully with a systemic crisis.

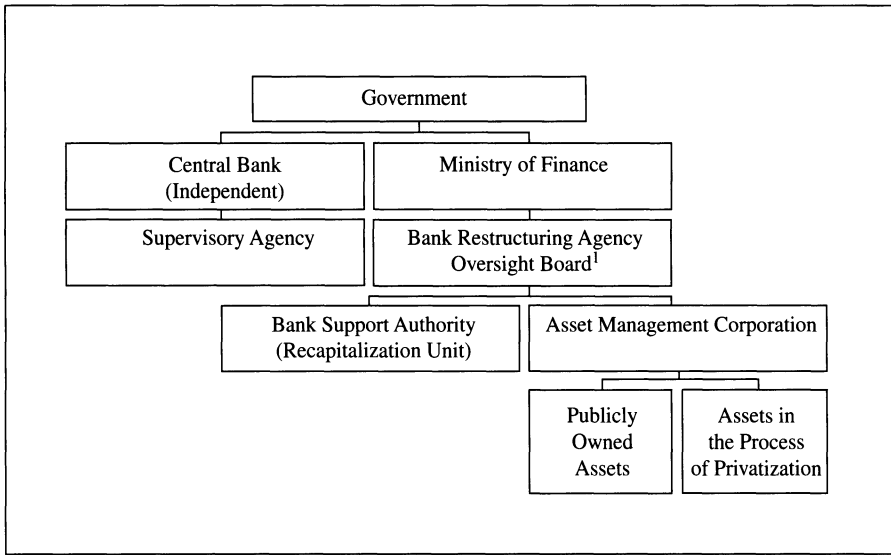
Most countries find a need for an overarching board to liaise with other parts of the government, and to coordinate and supervise subsidiaries' activities. The MOF and the central bank should be represented on the BRA's oversight board together with the agency's chief executive officer (CEO), and a number of knowledgeable and independent members of the public.<sup>12</sup> The composition of such a

<sup>10</sup>In Figure 1 the supervisory agency is shown within the central bank. An alternative diagram could show the supervisory agency as a separate institution.

<sup>11</sup>Indonesia and Thailand placed their BRAs subordinate to their ministries of finance. In Malaysia, the BRA is run by the central bank, which is only quasi-independent of the MOF. Korea's BRA is a subsidiary of its independent supervisory agency. Japan and Mexico have involved their DIAs to some extent in bank restructuring and recapitalization. The United States created an independent agency, the RTC, to handle failed thrifts, but not failed banks. (However, the RTC spent a smaller percentage of GDP—roughly 2 percent of GDP in the mid-1990s—on failed thrifts than the countries considered in this paper incurred in restructuring their banking systems.) Stylized models of actual experiences in various countries are shown in Figures A1 through A8, in Appendix II.

<sup>12</sup>If the supervisory agency is outside the central bank, one may well wish to have a representative of the supervisory agency on the BRA's oversight board.

Figure 1. Institutional Framework Under the Minister of Finance



<sup>1</sup>Includes representatives of other agencies, including the central bank, and the supervisory agency.

board would be an acceptable compromise between including all interested parties or confining membership to too small a number. In cases where the supervisory agency or the DIA is not formally represented on the oversight board, they would need to maintain close relations with its operational arms. The supervisor must keep the BRA informed on the condition of banks, especially those that are deteriorating and close to closure or recapitalization.

The relationship of the DIA to the BRA depends in part on the breadth of the DIA's past role. In cases where its role was limited to compensating depositors of failed banks, that function may be temporarily overridden by a comprehensive guarantee, which is funded by the government and may fall to the BRA to execute. In other cases where the DIA acted as the receiver/liquidator of failed banks, one of many organizational possibilities is that its responsibilities are temporarily taken over by the BRA with the DIA staff reassigned there, while the DIA is temporarily a subsidiary of the BRA. These possible relationships are shown for selected countries in Figures A1 through A8 in Appendix II.

The responsibilities of the oversight board are to plan the restructuring and recapitalization exercises, assess the appropriate level of fiscal resources for restructuring and recapitalization, and strike a balance between these needs and the fiscal constraints faced by the government. It must not only liaise with the government, but also insulate its operational subsidiaries from political pressure, and keep the public informed of the agency's plans and its progress toward achieving them. Transparency should be a goal and it would be increased through auditing the BRA (at least annually), designing appropriate accountability and disclosure arrangements, and requiring reporting to parliament in public hearings.

Details of the institutional structures that have been established in six countries in order to handle bank restructuring are shown in Table 1.

## II. The Bank Restructuring Agency: Terms and Conditions for Assistance

The BRA needs to observe several broad principles when using public funds to recapitalize banks and administer restructuring plans. First, the strategy must hold owners of a failing bank responsible for losses, and make managers accountable for their actions. An incentive structure for both the public and the private sectors that discourages a recurrence of banking problems needs to be put into place. Second, the industrial structure of the rehabilitated banking system must provide core banking services and must be based on the desirable long-term structure of the financial services industry. Third, the end strategy should convert the government's investments back into cash and return the banking sector to private control. Fourth, the BRA must take control of public funds that have already been spent, for example, by converting into equity<sup>13</sup> the lender-of-last-resort assistance that the central banks, in a number of countries, gave to illiquid and insolvent institutions that were to be recapitalized.<sup>14</sup> Fifth, the restructuring strategy should strive to minimize the amount of public funds used (expenditures net of recoveries) to achieve the objectives of restructuring, and ensure that these funds are dispensed in an efficient, equitable, and cost-effective manner, and that the government obtains securities in some form that support its right to future repayment in exchange for its investment.

In addition to providing finance directly to recapitalize the bank, the BRA must also make a judgment about how much of the bank's impaired assets should be taken off the bank's books (e.g., transferred or sold to a separate unit, such as an asset management company) so that the assets can be managed separately. Separation of these assets can help to normalize bank operations and maximize asset recovery, thereby improving the yield on funds invested in bank capital. When the problem bank is fully taken over and controlled by the government, this typically involves transferring an appropriate volume and type of assets to a separate AMC controlled by the government or the BRA. In some situations, the government finances only a part of banks' capital needs, with the private sector providing the rest and sharing ownership, while at the same time, it assists banks with purchases of some of the impaired assets (for example, by acting through an AMC owned or controlled by the government or the BRA); in these cases, the appropriate allocation of budgetary funds between direct recapitalization and financing (or facilitating) asset purchases becomes an issue. These decisions involve a number of considerations, including the degree of insolvency and

<sup>13</sup>For example, Thailand converted Financial Institutions Development Fund (FIDF) support into equity.

<sup>14</sup>Central banks rank a failed bank's assets according to whether they hold collateral against their loans to the bank and the quality of that collateral.



**Table 1. Government Agencies Associated with Bank Recapitalization**

Agency Type	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
<b>Overarching Bank Restructuring Agency (BRA)</b>	New: Indonesian Bank Restructuring Agency (IBRA).	New: Financial Reconstruction Commission (FRC) (replaced the Crisis Management Committee (CMC)).	New: Financial Supervisory Commission (FSC).	An informal Restructuring Steering Committee (RSC) under Bank Negara Malaysia (BNM).	Until 12/98: National Banking Commission and Fondo Bancario de Protección al Ahorro (FOBAPROA); now Institute to Protect Savings (IPAB).	Since 8/98, Financial Restructuring Advisory Committee (FRAC).
<b>Bank Support Authority (BSA) (the recapitalization unit)</b>	IBRA itself is the Bank Support Authority.	Existing DIA, with the approval of the CMC/FRC.	Existing: Korean Deposit Insurance Corporation (KDIC).	Danamodal: A government agency that is a subsidiary of Bank Negara.	FOBAPROA administered the PROCAPTE recap program; it has now been replaced by IPAB.	(1) Financial Institutions Development Fund (FIDF) has capital for intervened banks and liquidity for open banks; (2) new FRAC.

Note: See also appendixes for definitions.

RECAPITALIZING BANKS WITH PUBLIC FUNDS

Table 1. (continued)

Agency Type	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Asset Management Company (AMC) or Asset Management Unit (AMU)	New: Asset Management Unit (AMU), a division of IBRA.	Resolution & Collection Corp. (RCC). includes the Resolution and Collection Bank (RCB) and the Housing Loan Administration Corporation (HLAC); buys bad loans from any bank.	(1) Korean Asset Management Corporation (KAMCO) since 1962; (2) new: Bridge Bank to deal with the good assets of closed merchant banks.	Danaharta: a government company that is owned by the MOF, and is expected to have a life span of 5 to 10 years.	(1) FOBAPROA; (2) Valuación y Venta de Activos (VVA) to appraise and dispose of assets acquired by FOBAPROA; (3) trust funds for bank loan workouts; (4) CRB proposed under the SHCP.	(1) Financial Restructuring Agency (FRA) and (2) Thai Asset Management Corporation only for bad assets of intervened institutions; (3) private FIDF-funded AMC for Bangkok Bank; (4) private tax-free AMCs.
Debt Restructuring Agency (DRA)	New: Indonesian Debt Restructuring Agency (INDRA).	No.	(1) New: Corporate Restructuring Coordinating Committee (CRCC).	Yes: Corporate Debt Restructuring Committee (CDRC) to guide private negotiations for companies in receivership or liquidation and establish negotiation practices.	A number of programs: UDI, UCABE, FINAPE, and FOPYME.	Yes: Corporate Debt Restructuring Committee (CDRC) uses the London Approach to establish formats for debt agreements for 200 major debtors.

Table 1. (concluded)

Agency Type	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
<b>Deposit Insurance Agency (DIA)</b>	Not yet: IBRA currently administers the full guarantee.	Yes. Deposit Insurance Corporation (DIC).	Yes. Korean Deposit Insurance Corporation (KDIC, 2/1997).	No.	Yes. FOBAPROA: now IPAB, which is to replace the full guarantee with limited deposit insurance by 2005.	No. but is currently being designed.
<b>Government-approved private initiatives</b>	Government-set principles for loan workouts (Jakarta Initiative); the central bank issued regulations governing loan restructuring.	Cooperative Credit Purchasing Corporation (CCPC).	FSC established debt resolution framework; including the CRCC, which arbitrates disputes.	Banks and finance companies cooperate to acquire troubled institutions; central bank has issued regulations to govern loan restructuring.	Unidad Coordinadora del Acuerdo Bancario Empresarial (UCABE) to facilitate the restructuring of large, syndicated loans.	Yes. The central bank has issued regulations to govern loan restructuring.

Source: IMF staff analysis.

government ownership, the nature of impaired assets, and the type of arrangements to manage these assets most effectively, taking into account internal governance of banks and the country's legal and institutional environment to enforce property rights and restructure assets. For instance, loans to the national airline may be best managed centrally, while loans to local farmers may be best left on the books of the bank. Overall, a bank should not have all the problem loans taken off its books—it should be “normalized,” not “supernormalized,” both to ensure a level playing field with banks that do not receive assistance and to avoid excessive costs to the public sector.

The principal operational responsibility of the oversight board is to approve the conditions for government assistance eligibility and the terms under which it is granted. Eligibility conditions for public assistance in a bank recapitalization should reflect financial and operational criteria that also assess viability and good governance. More specifically, the eligibility conditions should ensure that a bank:

- has “fit-and-proper” owners and managers (including new ones) or is placed under conservatorship until they can be located;
- recognizes the full extent of its losses, based on realistic valuation criteria;
- submits an acceptable business plan that covers recapitalization to required capital levels and operational restructuring to assure future profitability; and
- mobilizes private sector owners (existing or new) to put up, at least, an agreed portion of the new capital and assumes responsibility for operation of the institution.<sup>15</sup>

The terms accompanying the provision of public assistance to an eligible bank should ensure adequate financial and operational restructuring and provide incentives for private owners to rapidly resume efficient and profitable operations. The terms of access to a public capital facility normally include agreements with banks to: (1) restructure operations and balance sheets, with binding performance targets in a memorandum of understanding (MOU), using proper accounting principles, and, if necessary, through due diligence scrutiny by special auditors;<sup>16</sup> (2) accept specified restrictions on operations in case of noncompliance; and (3) make arrangements for the repayment of public assistance and the return of ownership to the private sector.

Although the scope and details of the terms would vary according to country- and bank-specific circumstances, these terms could include the following continuing obligations on banks:

- Suspend dividends or incur other sanctions whenever the bank is below the minimum capital adequacy ratio (CAR) or violates specified performance criteria, including achievement of prudential requirements (e.g., maximum open foreign exchange positions) and operational restructuring (e.g., rationalizing the bank's branch structure). Accept arrangements that would trigger an intensification of government control; for example, a conversion of preferred

---

<sup>15</sup>These partners need to have sufficient capital at risk to give them a strong incentive to stay with the institution and to work for its survival.

<sup>16</sup>In Thailand banks' financial conditions were assessed by special audits by the banks' external auditors; in Indonesia, by contrast, all banks were audited by international accounting firms. In some FSU countries overseas supervisors assisted in the assessment of banks' financial condition.

shares acquired by the government into common stock, under one or more of the following conditions: (1) when the CAR falls below a specified level; (2) when the supervisor judges that the bank has otherwise failed to comply with the terms imposed upon it, and when the violations were avoidable and material; or (3) when a previously specified point in time is reached. For example, under specified conditions, the interest of existing shareholders would be substantially diluted, and the government would obtain voting control as well as the right to replace management.

- Accept official oversight through regular and frequent reporting, off-site and on-site inspections to monitor compliance with time-specific performance targets for (1) achieving loan classification and provisioning standards; (2) making improvements to procedures governing credit assessment, risk management, loan workout, and collateral control; (3) streamlining operations; (4) cutting costs; (5) bringing excessive foreign exchange positions, connected lending, and other infringements into compliance with prudential standards; and (6) arranging government representation on the board of directors where it is deemed necessary by the BSA and the supervisor.<sup>17</sup>
- Allow the public sector to obtain an increasing percentage of the bank's net income over time as remuneration for its investment, and as an incentive for the bank to buy out the government's stake as soon as possible. With this design, public funds become progressively burdensome and so the bank will seek to repay its obligation to the government and replace public funds with private capital.
- Participate in efforts to restructure corporate debt, to ensure maximization of loan payments and loan recoveries, and to minimize the capital infusion that the government and owners have to provide.

To be equitable and to allow the government to cash out of its investment, if there are private owners left, they should be given an option to redeem the government's capital either throughout the period, or at a specified point in time. In general, the terms of recapitalization could also include incentives for new investors in the form of guarantees, such as stop-loss and income-maintenance agreements.

### III. Key Decisions

To achieve the objectives for efficient restructuring set by the BRA, its operational arms—the BSA and the AMC—must jointly make decisions concerning certain operational issues related to granting capital assistance to banks. Issues discussed in this section include: (1) the valuation of individual banks' portfolios and their future prognosis; (2) whether support should be uniformly available to all viable banks, or only to those institutions identified as having systemic importance; (3)

---

<sup>17</sup>While many of these functions would be part of the normal, day-to-day work of the supervisors, there may well be a case for stronger supervision of recapitalized banks. In Indonesia the central bank established a special surveillance unit to focus on the largest of these banks. Also, while the government has representatives on the boards of the recapitalized private banks, the Indonesian government has agreed to a memorandum of understanding with the private owners not to participate in the day-to-day running of the business.

the selection of individual banks that qualify for and will receive assistance; (4) whether support should be conditional on a full or partial write-off of existing shareholders' claims; and (5) the target level of capitalization that the facility should help the banks to achieve. Other operational issues such as what instruments to use and the means of paying for them are discussed in the next section.

### Asset Valuation and Forecasting

Realistic valuation of a bank's balance sheets and off-balance-sheet exposures is a prerequisite for an effective recapitalization strategy, and for an assessment of capital shortfalls. Such valuation is difficult in a crisis environment pervaded by uncertainty because the usual indicators of value are not available, particularly in a crisis and in transition economies. Market prices do not exist where trading has ceased or been disrupted. In addition, the lack of a reliable basis for estimating cash flows, owing to the high volatility of exchange and interest rates in a crisis, impedes valuation based on appropriately discounted present values. The valuation of classified assets, in particular, can be especially problematic.

Moreover, the valuation process is particularly challenging because what is needed is more than a static assessment of current conditions; a prediction of future viability is also essential for identifying banks for recapitalization.<sup>18</sup> Unless it is carefully managed, however, self-assessment invites adoption of favorable and self-serving forecasting assumptions, while external assessments may not be feasible or affordable.

Thus, given the uncertainty during banking crises, alternative valuation approaches have been used to temper the assessments based on traditional procedures. Banks have a responsibility to continually value their assets and make provisions for losses in order to keep their capital intact, and external auditors and supervisors also have a responsibility to continually challenge the banks' valuations. In a banking crisis, however, the authorities in some countries have tried to ascertain realistic values for assets by requiring banks to undertake a special self-assessment of the value of their asset portfolios and future prospects, based on tightened regulations governing loan classification and provisioning, and clear guidance on the assumptions to be employed and the procedures to be followed. In other countries, the BSA has made or checked the assessment itself using, for example, discounted present values of projected income flows. It has also sought independent valuations of bank portfolios by using international accounting firms or investment banks to complement supervisory assessments and external audits.

However, each of these approaches has drawbacks: self-assessments may be biased because of conflicts of interest, other local assessments may not carry sufficient credibility in the market, government assessments may appear inflexible, and international assessors may have a less complete picture of local conditions.

---

<sup>18</sup>Sweden, for example, required banks to provide to the BRA data based on universally applied criteria on a common date. The BRA then fed the information obtained from banks and data from other sources (including macroeconomic data and predictions) into a forecasting model, which outlined each bank's likely development over the next three to five years. See Ingves and Lind (1997).

Moreover, critics claim that the auditors place exceptionally low values on assets, perhaps to permit international partners to sign the audits without fearing that the auditors could later be sued for over-optimism in an uncertain environment.<sup>19</sup> In addition, the auditors may face a conflict of interest if other clients are in line to become the major purchasers of the banks or their assets.

The authorities making restructuring decisions, therefore, have to adopt a pragmatic and transparent approach that incorporates consistent assumptions about key economic variables and best-practice accounting standards, and one that also combines and reconciles alternative valuations to form a realistic judgment. In addition, prospective private investors will want to make their own diligent valuations before deciding whether to acquire equity stakes in banks. Where authorities believe that banks can and will value their assets fairly and realistically, they should require banks to do so. But these valuations need to be checked either by external assessors or the BSA. Where banks cannot or will not conduct a fair assessment, international accounting firms should be hired to do the valuations. In turn, their credibility will need to be checked by the BSA. In all cases, the authorities must clearly specify that the dates for the assessment, the assumptions, and the procedures adopted be the same for assessing asset values and forecasting bank viability.

### What Institutions Should Be Eligible for Government Assistance?

One important consideration is whether assistance should be confined to commercial banks or include other types of depository institutions, such as savings banks and credit unions, and other financial institutions such as insurance companies, investment banks, and brokerage houses. The answer depends partly on the importance of these institutions' role in an economy. As a general principle, commercial banks rank first in priority, because they are vulnerable to runs in a financial crisis and can have systemic effects. Savings banks, which are sometimes government owned, and house the small savings of households, are usually also eligible for assistance for social and political reasons. Other types of financial institutions usually have lower priority in claiming public funds.<sup>20</sup>

In general, capital assistance should be available for a limited period to all (commercial and savings) banks that meet the established financial and operational criteria set by the BRA, and that are both willing and able to meet the terms of assistance (laid out in the previous section) so that they can attain a specified minimum CAR and adequate operational restructuring. Capital assistance may

---

<sup>19</sup>This criticism was made of the "Big Five" international accounting firms' work in Indonesia. Also, the Korean government wanted an assessment quickly, and the international partners of the international accounting firms declared themselves unable to sign the audits within the time frame allowed, which reduced their impact.

<sup>20</sup>The near-failure of a major hedge fund in the United States, in 1998, raised concerns about systemic effects on the banking system and prompted official efforts to preserve the financial institution, which was in the end saved exclusively through the use of private funds. Similarly, the Bank of England rescued Johnson Matthey because of its activities in the gold market.

also be available to banks that meet certain critical needs—for instance, a bank that is the sole provider of payments services in a particular region.

Eligibility for recapitalization should be determined primarily, but not solely, on the basis of financial and operational criteria that indicate potential viability. However, countries sometimes decide that a classification based solely on financial and operational criteria would not provide a workable resolution for banks that are weak but deemed essential, or of systemic importance to the economy. For example, it may not be feasible to close a very large bank in an orderly fashion, or one that dominates a region of the country, underpins the payments system, or has a special niche in the credit markets. Such exceptions to resolution criteria on the grounds of “essentiality” should be made only under very limited and tightly managed conditions to thwart political pressures.<sup>21</sup>

The resolution of both private and state-owned banks should be broadly governed by the same objectives and principles, although the resolution of state banks may often face special circumstances due to their size and credit exposures. As with the private banks, recapitalization of state banks should be linked to realistic valuation based on internationally accepted accounting standards, fit-and-proper management, and financial and operational restructuring to ensure viability and adherence to prudential standards.

### Which Banks Should Receive Government Assistance?

To determine which banks to give assistance to, the BSA must first do a classification. Figure 2 shows an example of four categories of banks. All of these begin from a position of measured capital above the CAR. In the worst category, Bank D is projected to deteriorate rapidly into deep and irretrievable insolvency. There does not appear to be any reason for this bank to receive direct government assistance because where there is a blanket guarantee and the bank is small, it is preferable to pay off the depositors and arrange to dispose of the assets rather than to recapitalize the bank. If the bank is large, however, and systemically important, the least-cost solution may still be recapitalization. Banks B and C in Figure 2 are under consideration for direct assistance; they fall below the minimum required capital level but ultimately are expected to recover if assisted. Bank B might recover very slowly without assistance, but Bank C would not. Both of these banks are willing and able to meet the terms and conditions of assistance discussed in Section II above. Bank A, in the fourth and best category, remains solvent without assistance.<sup>22</sup>

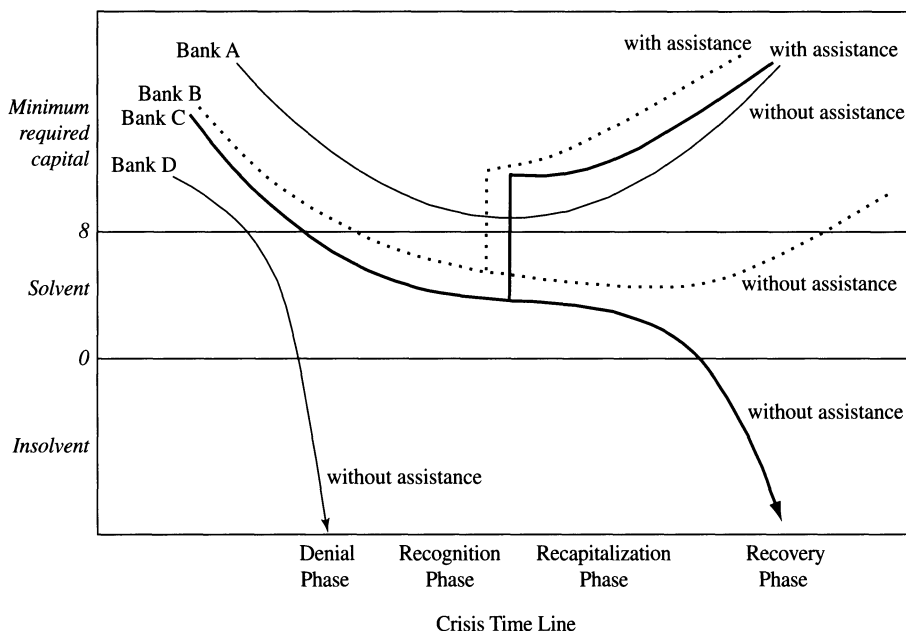
A difficult decision is whether to aid Bank B, which the valuation exercise predicts has a higher probability of recovering without aid as compared with Bank C, which is expected to become insolvent without financial assistance but which could recover with aid. If the BRA believes that the country is “over-banked,” and neither bank is systemically important, it could close both. If it judges that the

<sup>21</sup>For instance, in Indonesia, the authorities declared that all the state banks were “too big to fail” and all would be recapitalized.

<sup>22</sup>See Ingves and Lind (1997).



**Figure 2. Expected Capital Ratios for Four Categories of Banks**  
(Capital adequacy ratio, percent)



Source: Adapted from Ingves and Lind (1997).

country is over-banked but that it needs to assist one bank in order to maintain sufficient competition among banks, it should aid the stronger Bank B and close Bank C. If both banks are needed, the BRA may support both. If budgetary resources are constrained, the BRA will need to try to spread out the necessary financing over a longer period or elicit greater private sector participation, including foreign investment.

### Treatment of Existing Shareholders' Claims

As a general rule, the financial claims of banks' existing shareholders and subordinated debtors should be written down in accordance with their seniority in the legal system in order to cover the losses an institution has incurred. Apart from reducing the contribution of public funds needed to eliminate the possible negative net worth of the institution, this write-down also avoids setting precedents that can result in moral hazard. Where limited liability is not in force, shareholders may also be required to subscribe additional capital.

In crisis situations, such as in Asia in 1997–98, banks can fail as a result of past directed lending and exogenous factors (e.g., macroeconomic instability) despite good management, “fit-and-proper” owners, and initially strong capitalization. In these cases, the government may face a moral or legal responsibility to

repay the losses, and may take steps to keep existing owners and managers in place, and to persuade them to invest new capital.<sup>23</sup>

In some countries, the insolvency that is revealed from writing down owners' capital triggers supervisory action in which the bank loses its license, and is either merged or closed and liquidated. In other countries, the legal system allows owners to remain in control of the bank even after their shares have been written down to nominal values.<sup>24</sup> At times it may be necessary to allow existing shareholders to retain partial ownership rights in order to obtain their cooperation, and to avoid time-consuming and costly legal wrangles. Where the authorities are considering supporting an insolvent bank whose shareholders are protected, such support should be predicated on the shareholders themselves also providing new capital.

Experience has shown that owners, especially new investors, may be induced to provide fresh capital if the uncertainty they face is reduced by instruments that guarantee outcomes. For example, the government may agree to share losses with the owner or new investor (in a "loss-sharing" arrangement); place a cap (a "stop-loss" provision) on the amount a bank may lose; agree to maintain bank income at a specified level (in an "income- or yield-maintenance" provision); or allow the bank to return some or all of the bad assets it purchases to the government (through a "put-back" provision). More specifically, such guarantees and options can be given, with appropriate safeguards, to limit an acquirer's losses during a review period (in which additional questions on "skeletons" may come to light). Guarantees may cover asset values or yields that an institution will earn on certain assets specified in the recapitalization contract.<sup>25</sup> While inducements to new investment have been used successfully in many countries, a government needs to be confident that it can convey positive incentives to new owners to maximize both the value of recoveries and efforts to maintain and improve the value of the acquired assets. Guarantees can create an illusion of ownership in that, technically, a bank can have private ownership while all the risk is borne by the government.

Finally, using the legal system to obtain redress for criminal acts or regulatory violations committed by owners and others may reduce the government's fiscal obligations, while preserving incentives for good governance.

---

<sup>23</sup>For example, even where shares are written down to zero, human resource constraints might suggest that "fit-and-proper" shareholders be retained on the board of directors and be given stock options tied to future performance. Alternatively, an insolvent bank might be closed and a new charter issued to the former owners, conditional upon their injection of new capital. On the other hand, the mere fact that there was directed lending, or government interference, does not mean that banks' managements can necessarily walk away completely from the problems in their banks. Their "fitness and propriety" as well as responsibility for problems in the past may well be a matter of judgment for the authorities in general, and for the bank supervisors in particular.

<sup>24</sup>The former applies in most industrial countries; the latter, for example, in most Asian crisis countries.

<sup>25</sup>These techniques have all been used by the Bank Insurance Fund (BIF) and the RTC in the United States. Malaysia has provided asset guarantees to acquirers of merged finance companies, Korea has given put options to acquiring banks in purchases and assumptions (P&As), and Thailand has provided stop-loss guarantees and yield-maintenance agreements to new investors taking over intervened banks.

## The Size of the Recapitalization

When there is a blanket guarantee for depositors and other creditors, recapitalizing a bank to a zero CAR (bare solvency) is roughly equivalent to honoring the guarantee without making a payout to depositors and creditors. In systemic crises, recapitalizing to bare solvency, given the limited supply of private capital (domestic and foreign), may not be sufficient to establish credibility in the soundness of a recapitalized banking system, and it may well be desirable for the government to recapitalize selected banks to some positive minimum level. Where the fiscal situation permits, the government may recapitalize banks to the Basel Committee on Banking Supervision standards or even higher, while taking a commensurate ownership interest.<sup>26</sup> Such decision will depend on competing fiscal demands as well as on how much authorities expect “overcapitalization” to restore confidence in the system among bank customers and potential investors.

## Burden-Sharing Recapitalization

The amount of public funds needed to recapitalize the banking system depends, in part, on the willingness of private investors—existing and new—to put up a share of the capital needed. Their willingness in turn will depend on the distribution of ownership after recapitalization, and the guarantees and contractual terms designed to reduce uncertainty and apportion losses and profits.

Where the law does not call for limited liability for bank owners, shareholders may be required to recapitalize their bank. Even where limited liability is in place, it may be possible to design the recapitalization so that the shareholders are encouraged to reduce the call on government funds in certain ways.<sup>27</sup> They might be induced to: (1) bear losses beyond their original capital and share the financial responsibility with the government for “filling the gap” and bringing the bank up to bare solvency; and (2) contribute additional capital to help meet the minimum CAR. This approach of persuading existing shareholders to “fill in the gap” is equivalent to denying limited liability—a provision frequently regarded as a protection needed to encourage shareholders to invest in an enterprise or bank.<sup>28</sup>

In order to encourage new shareholders to participate in a recapitalization, it may be necessary to give them preferences over existing shareholders. Such preferences could be, for example, that old shareholders shoulder the burden of any additional depreciation of existing assets before new shareholders are called upon to incur losses.<sup>29</sup> Any additional losses on specified old assets would be under-

---

<sup>26</sup>Korean banks have been recapitalized to 10 percent, to allow them to survive some further deterioration in asset quality.

<sup>27</sup>Unlimited liability is not uncommon. Before granting a license, supervisors frequently require shareholders to undertake, for example, in a comfort letter to keep their bank adequately capitalized.

<sup>28</sup>Nevertheless, this approach is being tried in Indonesia, where the capital support facility for private banks requires contributions from existing shareholders to “fill in the gap” in return for the opportunity to buy back the government shares later and to reacquire the bank under specific conditions.

<sup>29</sup>The published *Joint Statement of August 14, 1998*, from the Ministry of Finance and the Bank of Thailand imposes this condition.

written by a government guarantee so that new shareholders are only held responsible for losses incurred on the nonguaranteed assets. Alternatively, new shareholders could receive, at least for a limited time, a disproportionately larger share of future dividends. In some countries, the laws (for example, those that govern rights issues) would need to be changed to permit such differentiation among shareholders. In other countries, it may be sufficient to persuade old shareholders to agree to the arrangement on pain of being dispossessed entirely.

#### IV. Modalities of Government Support: Capital Injections

After making decisions about which banks to recapitalize, the BSA must then choose the best ways to provide the funding. In principle, there are a number of instruments that the government can use to strengthen a bank's capital adequacy: injecting capital with public funds; rehabilitating assets; reducing liabilities; and improving net income.<sup>30</sup> This section focuses on issues related to capital injections, particularly what instruments to use and how to pay for them. Other instruments are discussed in the following two sections.

##### Tier 1 and Tier 2 Instruments

An increase in paid-in equity or Tier 1 capital is the preferred form of recapitalization because it improves the capital ratios, can enhance profitability, and is essential under the Basel Capital Accord. It does not involve immediate servicing costs, since dividend payments could and should be postponed until the bank's capital and income are fully and durably restored. The government's provision of Tier 1 capital can also facilitate the bank's efforts to raise Tier 2 capital from private sources. The components of Tier 1 and Tier 2 that are recognized by the Basel Committee are listed in Box 1. The actions of six countries in providing Tier 1 and Tier 2 capital to recapitalize their banks are shown in Table 2, which reports the capital instruments used and the means of payment adopted. Table 3 reports other financial actions, such as granting loans and issuing guarantees.

When recapitalization with public funds leads, in effect, to nationalization,<sup>31</sup> this should be regarded as a transitional arrangement designed to strengthen management and operations, and should lead to reprivatization in due course—preferably according to a specific time frame. Consequently, the BSA needs to choose its capital instruments with consideration of its ability to redeem them later. Two financing decisions need to be made—which instruments to acquire, and how to pay for them. One option is that the government could purchase common stock, which may be more marketable than other instruments when the government decides it wants to recover its investment. The BSA, however, may not want to take control under circumstances where it believes that privately controlled operations are more efficient, or where it believes abstaining from

<sup>30</sup>See Dziobek (1998).

<sup>31</sup>Nationalization is the usual outcome in cases where insolvency is deep and the bank is regarded as systemically important.

Box 1. Capital Instruments in Use in Banks<sup>1</sup>

	Characteristics	Examples of Countries
<b>Tier 1 Instruments (Core Capital)</b>		
Issued and fully paid ordinary shares	Must be:	Many: including Mexico, Malaysia, Finland, Sweden
Disclosed reserves from retained after-tax earnings or other surplus	(i) issued and fully paid;	Many: Mexico
Perpetual, noncumulative preference shares	(ii) noncumulative;	
Convertible, noncumulative preference shares	(iii) permanent;	Thailand, Japan
Minority interests in equity of less than fully owned subsidiaries whose accounts are consolidated and that meet certain conditions and do not exceed 15% of Tier 1 capital	(iv) able to absorb losses within the bank on a going-concern basis;	Thailand, Indonesia, <sup>2</sup> Japan, <sup>2</sup> Finland, Sweden
Innovative, synthetic, capital instruments Limited to <15% of consolidated Tier 1 capital	(v) junior to depositors, general creditors, and subordinated debt;	Malaysia
	(vi) neither secured nor guaranteed by the issuer;	
	(vii) publicly disclosed; and	
	(viii) immediately and fully available without limit to the issuing bank.	
	Not secured or guaranteed, callable by issuer only after a minimum of 5 years and with supervisory approval.	Portugal, Spain, Thailand, <sup>3</sup> U.S.A.
<b>Tier 2 Instruments (Supplementary Capital)</b>		
Undisclosed reserves	Unencumbered; immediately available	Japan, Mexico
Asset revaluation reserves	Prudently valued with a discount	U.K., Japan, Mexico
General provisions/loan-loss reserves <sup>4</sup>	<=1.25 % of risk-weighted assets	Many: Mexico, Malaysia
<i>Hybrid debt/equity instruments</i> including,	Must:	Several
Cumulative long-term preference shares	(i) be unsecured, subordinated, fully paid-up;	Canada
Convertible cumulative preference shares	(ii) not be redeemable without the prior consent of the supervisor;	France
<i>Titres participants and titres subordonnés a durée indéterminée</i>	(iii) be available to participate in losses without the bank having to cease trading; and	Germany
<i>Genussscheine</i>	(iv) allow servicing obligations to be deferred where the bank's profitability would not support payment.	U.K., Thailand
Perpetual subordinated debt		U.K.
Preference shares		U.S.A.
Mandatory convertible debt instruments		
<i>Subordinated term debt instruments</i> including:	Not normally available to share losses unless bank closes; thus, not to exceed 50% of Tier 1 capital.	U.S.A.; Finland
Conventional unsecured subordinated debt		
Convertible subordinated debt	Minimum original term to maturity of over five years with a discount of 20% in each of last five years to maturity.	Mexico, Thailand, U.S.A., Malaysia
Limited-life redeemable preference shares		
Deductions from capital		
Goodwill		
Investments in unconsolidated financial subsidiaries		

Sources: Basel Committee on Banking Supervision (1998, pp. 1–16, and 1999).

<sup>1</sup>The precise specifications vary from country to country.

<sup>2</sup>The Indonesian preference shares are nonvoting.

<sup>3</sup>Thailand, for example, issues Stapled Limited Interest Preferred Securities (SLIPS) that are attached to high-rate subordinated debt that pays interest even when there are no profits. U.S. bank holding companies can issue "trust preferred" or "capital securities" and pass the proceeds on to their banks as Tier 1 capital. European countries have issued "step-up callable preferred securities."

<sup>4</sup>Specific loan-loss reserves are not countable as capital under the Basel Capital Accord, although some countries do so. Japan, for example, counts reserves against substandard loans, but not doubtful or loss loans, as Tier 2 capital.

Table 2. Actions by the Public Sector to Provide Tier 1 and Tier 2 Capital<sup>1</sup>

Instrument/ Payment	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Provide capital	Yes.	Yes.	Yes.	Yes, for at least 10 banks. <sup>2</sup>	Yes.	Yes.
<b>Tier 1:</b>	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.
Common stock	Yes.	Yes, but rare.	Yes: gov't and KDIC for development, intervened, and merged commercial banks.	Yes.	BOM/FOBAPROA in intervened and small financial institutions to end insolvency and permit private recap.	Only in intervened banks.
Pay in cash	No.	Yes.	Yes: through the KDIC; otherwise to development banks.	Yes: using proceeds from issuing Danamodal bonds.	No.	Financial Institution Development Fund (FIDF) converted some LOLR support into equity in intervened banks.

Table 2. (continued)

<b>Instrument/ Payment</b>	<b>Indonesia</b>	<b>Japan</b>	<b>Korea</b>	<b>Malaysia</b>	<b>Mexico</b>	<b>Thailand</b>
Pay with bonds	Yes.	Not yet. But DIC will probably issue short-term bonds.	Yes: stocks in public enterprises owned by the government to nationalized banks; gov't-guaranteed KDIC bonds.	No.	10-year, FOBAPROA zero-coupon, non-tradable bonds. IPAC will issue negotiable, gov't-guaranteed, bonds to replace FOBAPROAs.	No.
Preferred stock	No.	Yes; now mostly convertible; if bank raises private capital and makes new loans.	Yes: for acquirers in P&As for five commercial banks.	Yes: bought by Danamodal.	In intervened and merging banks.	Yes: up to 2.5% Tier 1, then match private contributions 1:1.
Pay in cash	No.	Yes.	Yes.	Yes.	No.	No.

Table 2. (continued)

Instrument/ Payment	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Pay with bonds	Yes: (1) indexed, (2) regular, both negotiable.	No: DIC issues gov't-guaranteed bonds and borrows from BOJ to raise cash.	KDIC sells bonds to provide cash.	No.	10-year, FOBAPROA zero- coupon, non- tradable bonds. IPAC will issue negotiable bonds to replace FOBAPROAs.	10-year, tradable, gov't, bonds with market-related interest rate.
<b>Tier 2:</b>	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.
Subordinated debt	No (LOLR support converted to sub. debt before the crisis).	Yes, more common than equity.	Yes: early P&As for five closed banks.	Yes: redeemable, subordinated debt issued to 9 institutions by end 1998.	Banks issued to gov't callable, 5-year sub. debt mandatorily convertible into equity after 5 years or when CAR is < 2.	Yes: to 2% of risk assets if bank restructures corporate debt and makes new loans.



Table 2. (concluded)

Instrument/ Payment	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Pay in cash	No.	Yes.	No.	Yes.	Yes, but sterilized as increased reserves at BOM.	No.
Pay with bonds	No.	Not directly, but the government issues bonds to fund the cash injection.	Government-owned exchange-quoted stocks in public enterprises.	No.	IPAC will issue negotiable bonds to replace FOBAPROAs bonds.	Yes: government buys bank debentures with government 10-year bonds at lower market-related rate.
Memo: allow more foreign ownership	Yes: law amended to permit up to 99% foreign ownership of banks.	There are no restrictions on the foreign ownership of banks.	Yes: have eased legal restriction, and foreigners, including the IFC, have bought stakes in 4 banks.	Yes: for financial institutions and limits on purchase of real estate by foreigners relaxed.	Eased before, ended remaining restrictions on foreign participation in existing banks in December 1998.	Existing restrictions have been waived for 10 years.

Source: IMF staff analysis.

<sup>1</sup>The public sector includes the government, the central bank as lender of last resort (LOLR), the deposit insurance corporation (DIC), the AMC, the restructuring agency, and any vehicle for recapitalizing banks.

<sup>2</sup>Aided banks must have sold their bad assets to Danaharta and have CARs below 10 percent.

Table 3. Public Sector Loans and Guarantees to Support Banks<sup>1</sup>

Instrument/ Payment	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Provide loans	Yes.	Yes.	Yes.	Yes.	Yes.	Only to intervened banks and to honor the guarantee.
Long-term	No: but de facto short-term loans are rolled over.	No.	BOK to the Bridge Merchant Bank.	No.	To intervened and small banks.	No: but in fact short-term loans are rolled over.
Short-term	Yes: by Bank Indonesia.	Yes: the BOJ with and without collateral.	Yes: BOK loans in foreign currency are rolled over.	Yes: by Bank Negara Malaysia.	Yes: BOM made LOLR loans in pesos and, via FOBAPROA, collateralized loans in dollars.	Yes: from the FIDF.

Table 3. (continued)

<b>Instrument/ Payment</b>	<b>Indonesia</b>	<b>Japan</b>	<b>Korea</b>	<b>Malaysia</b>	<b>Mexico</b>	<b>Thailand</b>
Place deposits	No.	The Trust Bureau places Postal Savings Bank and local government deposits.	Reported in the press.	Yes: of state-owned companies and national pension fund.		No.
<b>Guarantees</b>	Yes.	Yes.	Yes: but not including off-balance-sheet items.	Yes.	Yes.	Yes: including off-balance-sheet items, but not sub. debt.
Bank liabilities	Yes: from 1/98 for at least 2 years, with 6 months' notice of termination; includes off-balance-sheet items; not shareholders and sub. debt holders or connected parties.	Yes: from 1997 through March 2002, may be extended to cover subordinated debt. <sup>2</sup>	11/97 until 12/00 on most liabilities (including some inter-bank claims) of all financial institutions.	Yes: from 1/98 indefinitely.	Yes: until 2005 IPAB replaces FOBAFROA's guarantee on all, including foreign exchange, debts but not sub. debt.	Yes: from 10/97 indefinitely.

Table 3. (concluded)

Instrument/ Payment	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Bank assets		Guarantee associations reinsure SME loans with the Small Business Credit Insurance Corporation (SBCIC).	Yes; (1) informal guarantee of foreign exchange debts; (2) Korean Guarantee Corp. (KGC); (3) Korean Technology Guarantee Fund (KOTEC); (4) up to 100% on loans to SMEs; <sup>3</sup> (5) put options for acquiring banks in P&As.	Yes: for the bad assets of Banks Sime and Bumiputra.	Yes: via FOBAPROA, which lent to companies that were indebted to banks.	Profit & loss-sharing, stop-loss, and yield maintenance agreements for new investors in intervened banks; e.g. loss-sharing for intervened Krung Thai Bank.
Borrowers	No: apart from long-standing export guarantee scheme.	No: direct government lending.	Yes: credit guarantees for SMEs.	The government guarantees Danaharta bonds.	Yes: many, such as UDIs and preferential exchange rates.	No.

Source: IMF staff analysis.

<sup>1</sup>The public sector includes the government, the central bank as lender of last resort (LOLR), the deposit insurance corporation (DIC), the asset management company (AMC), the restructuring agency, and any vehicle for recapitalizing banks.

<sup>2</sup>The deviation of the guarantee has been extended.

<sup>3</sup>See Table 4 for the details.

asserting such control would significantly increase incentives for the private sector to bring in more capital. In a situation like this, the BSA would prefer to purchase convertible preferred shares, which count as Tier 1 capital under the Basel Committee's rules, and can be constructed to convey voting rights under a variety of restricted arrangements. Nonetheless, the government could retain veto rights on identified strategic issues relating to bank portfolios and operations.

Where the government wishes to obtain control of the bank, in case the bank's condition deteriorates, the preferred stock would be converted into common equity under the specified conditions.<sup>32</sup> Convertible, preferred shares count as Tier 1 capital, provided they are undated and noncumulative.<sup>33</sup> They carry a prior entitlement to any income earned, but they do not give the holder voting power in normal circumstances, and so they help to reduce any potential conflict of interest for the government. The trigger for conversion could, for example, be a decline in the CAR below some threshold value (4 or 6 percent, for example) or other material failure to meet the terms for continued assistance listed in Section II. The rate for converting preferred into common shares should dilute the common stock and give the government control.

The tension between satisfying the Basel Committee's requirement that capital instruments cannot qualify as Tier 1 capital if they are redeemable and the government's wish to recover its investment over time must be handled by ensuring that there will be a secondary market where the stock can be sold. The stock can be designed to give the owners the option to redeem them, with the consent of the government, if the bank is in good condition, and if the remaining Tier 1 capital would keep the bank above the minimum requirement after redemption. The government, however, would not have the power to redeem the shares from the bank because that would disqualify the shares from inclusion in Tier 1 capital.

## Forms of Payment

In terms of payment, Tier 1 capital provided by private investors should be paid for by injecting cash; submissions in-kind are not acceptable. The government may contribute cash and/or bonds (either negotiable or nonnegotiable). Cash and bonds immediately increase net worth and improve the capital ratios, liquidity, and potential profitability.<sup>34</sup> Bonds are often a convenient source of payment for the government. The downside to this convenient arrangement is that banks may prefer to retain the bonds as a risk-free source of income, rather than to make loans and ease the crisis-induced credit crunch.<sup>35</sup> If bonds are to be used, they should

---

<sup>32</sup>The government could also retain specific rather than general voting powers, to allow it to approve the details of a merger, for example.

<sup>33</sup>These are popular among "white knight" acquirers because they allow the acquirers to rescue a corporation, while ensuring that they can exit first if trouble occurs. Convertible preferred shares are being used by the Japanese government, as well as in Thailand and Indonesia.

<sup>34</sup>CARs are improved because equity increases and the value of risk-weighted assets falls, as both cash and government bonds have zero risk weight under the Basel standards.

<sup>35</sup>Authorities sometimes place indexed bonds with banks to lower the initial costs of debt service and to mask the full costs of recapitalization. However, costs to the government could rise and banks could benefit if inflation escalates.

pay market, not submarket, interest rates. A decision about whether market rates will be denominated in nominal or real terms (with the principal indexed for inflation) must be made. Bonds paying fixed nominal rates will give banks greater liquidity during the early years of the life of the bond over bonds that pay real rates, but paying nominal rates increases immediate government outlays.<sup>36</sup>

It is for these reasons that direct placement of government paper with the banks is the most common practice when purchasing bank capital. As stated previously, these bonds should pay market rates. As market rates are likely to be high initially, due to uncertainty, the bonds should carry variable rates, so that the government's debt service costs will decline as rates fall.

It might be expected that the government would opt to inject negotiable bonds, which encourage market development and also facilitate liquidity management by banks.<sup>37</sup> However, there is a risk in supplying negotiable bonds that the recipient will sell the bonds and reinvest unwisely in unsafe assets in a gamble for recovery. Fit-and-proper owners and managers, and very close supervision, are necessary to limit this risk. It may, therefore, be appropriate to contain negotiability for an initial period when the management, governance, and operational restructuring plans are being strengthened as part of the terms of government assistance.

### Giving Guarantees

During the recent crises, all governments in the major crisis countries have issued blanket guarantees to a bank's depositors and frequently its creditors. In addition to these guarantees on the liabilities of a bank, governments have in some cases guaranteed bank assets and/or income streams (see Table 3).

Guaranteeing liabilities forestalls runs and prevents potential losses from having to sell assets in a fire sale and from high-cost borrowing to repay depositors. Such a guarantee should enable a return to relative stability in the banking system, enabling the authorities to deal with the banking situation in a properly sequenced and calm manner.<sup>38</sup> Insofar as the holders of the deposits are other financial institutions, a guarantee should serve to revive the interbank market, which typically dries up during a banking crisis, and thus enable the continuation of intermediation across the banking system.

Guaranteeing income (for instance through "stop-loss guarantees") allows banks to increase capital through retained earnings. This may be particularly helpful for prospective bank purchasers, especially in cases where there is substantial uncertainty about the value of a bank's assets and prospects for recovery.<sup>39</sup> Guarantees are appealing politically because they appear to be a substitute for additional immediate expenditures on Tier 1 or Tier 2 capital, and they offer some

<sup>36</sup>Indonesia has used indexed bonds; see Table 2.

<sup>37</sup>This has occurred in Korea and Thailand, and is being considered in Indonesia.

<sup>38</sup>The government of Thailand charges banks 0.4 percent of liabilities annually for the guarantee it is providing. Indonesia charges banks 0.25 percent of liabilities.

<sup>39</sup>Among the Asian crisis countries this technique has been used particularly in Thailand, where banks have not all been subject to audit by international accountants and where the authorities have been particularly aggressive in seeking new private investors at an early stage.

protection against giving windfall gains to bank investors in the event that the bank's situation turns out better than expected. Although widely used, they are not a "free lunch" for the government, which carries contingent liabilities that it may have to honor. In the absence of proper fiscal transparency, guaranteeing income may serve to disguise the costs of handling a banking crisis. Guaranteeing assets may involve providing assistance to the borrowers of a bank, frequently the corporate sector. With increasing recognition that bank and corporate restructuring are closely intertwined,<sup>40</sup> support for the corporate sector may be part of the authorities' overall strategy for handling a pervasive economic crisis.

Guaranteeing assets and income—to a level beyond that which is otherwise projected in the market—increases asset values, which improves the balance sheet and measured capital.<sup>41</sup> Not only will such guarantees raise the market value of the assets covered, but—if they guarantee a return greater than the written-down value—they also enable the bank to recover any provisions that it has previously made against the assets. Both effects will boost capital. However, with proper fiscal accounting, the contingent claims on the government will need to be shown all at once, as would the immediate expenditures on bank capitalization. Suspicion therefore exists that countries that pursue this route may not disclose full fiscal transparency. In any case, there is rarely, if ever, a full and realistic estimate of the potential costs of the guarantees when they are given and, thus, may be a major reason for continual escalation of bank restructuring costs long after the authorities seem to have got a handle on the situation.

## V. Supporting Banks by Transferring Their Assets

In addition to injecting various forms of capital with public funds, the government can purchase and rehabilitate bank assets and facilitate business- and household-debt workouts to aid banks. It can also reduce bank liabilities, raise income, and grant forbearance. The actions of six countries in this area are shown in Table 4. This section discusses asset rehabilitation and debt workouts. The other types of actions are reviewed in Section VI.

Asset rehabilitation is an important concomitant reform that either is operationally linked to capital assistance programs, or otherwise strongly influences the effectiveness of such programs in supporting economic recovery and thereby reduces the net cost to the government. Asset rehabilitation is both a substitute for, and a complement to, capital injections. In principle, bad assets can either be: (1) retained and managed by banks themselves at appropriately written-down values, while the banks receive financial assistance from the government for recapitalization; or (2) relocated or sold to one or more decentralized "bad banks," loan recovery companies, or privately owned AMC's that specialize in the management of impaired assets; or

---

<sup>40</sup>Corporate restructuring is beyond the scope of this paper. It is becoming increasingly recognized that bank restructuring without corporate restructuring may be self-defeating, because if banks' problems stem from problems with their customers, then addressing customers' problems is critical to remedying the underlying situation facing the banks.

<sup>41</sup>There are obvious moral hazard effects if the original owners stand to benefit from these guarantees. There is, therefore, a strong case for making the granting of guarantees conditional upon fulfilling conditions similar to those discussed above for government assistance with bank recapitalization.

Table 4. Public Support to Enhance the Value of Bank Assets<sup>1</sup>

Action	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
<b>Aid assets</b>	Yes.	Yes.	Yes.	Yes.	Yes.	No.
<b>Revalue assets</b>	No.	Yes: real estate, value shares at cost if market.	Yes: Korean Land Corp. buys land to support prices.	No.	Yes: mortgage principal indexed to inflation.	No.
<b>Buy bad assets</b>	Loss loans only in recapitalized banks; assets of closed banks.	Resolution and collection corporation buys bad assets from failed and operating banks.	Yes: initially from all banks; now less often and only to aid restructuring deals.	Yes: since 8/98 buying large bad loans from 18 banks by year-end 1998.	Yes: (1) FOBAPROA buys 2 pesos of bad loans for every peso of additional private capital; (2) banks' UDI loans and foreclosed real estate transferred to trust funds.	In principle, the AMC buys only from intervened institutions.



Table 4. (continued)

Action	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
<b>Pays with</b>	Buys at zero value.	Cash (obtained from bond issues).	70% in government-guaranteed KAMCO bonds, 30% cash.	Cash or zero-coupon, gov't-guaranteed, Danaharta bonds.	5-year or 10-year, variable-rate, non-negotiable, zero-coupon FOBAPROA bonds.	5-year bonds without a government guarantee.
<b>Other actions</b>	(1) Loan-loss provisions (LLP) made tax-deductible; (2) publication of list of large delinquent borrowers.	As no automatic tax deduction for LLP, banks created the Coop. Credit Purchasing Co., deferred taxes.	Removed limit on tax deductibility for LLP. Put options in P&As for acquiring banks.	LLP tax deductible; national pension fund bought "under-valued" shares; eased reserve and liquidity requirements and loan limits; credit floor.	(1) 25:75 loss-sharing (bank; gov't) on bad loans; (2) facilitate the creation of credit bureaus.	Tax deductibility for LLP, stop-loss, and yield maintenance guarantees for new investors taking over intervened banks.

RECAPITALIZING BANKS WITH PUBLIC FUNDS

Table 4. (continued)

Action	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
<b>Restructure debt</b>	<p>Yes: Indonesian Debt Restructuring Agency (INDRA); and the Jakarta/London Initiative. IBRA and the state banks will embark on restructuring discussions, beginning with the 20 largest borrowers.</p>	<p>Can now tax-deduct debt forgiveness in a comprehensive restructuring plan. Limits on bank ownership of equity have been raised to facilitate debt-equity swaps. There are also private initiatives; and restrictions on the foreign purchase of automobile companies, real estate, and brokerage houses have eased.</p>	<p>Yes: the FSC's Corporate Restructuring Agreement (CRA) uses a modified London Approach to guide restructuring. Private Corporate Restructuring Coord. Committee (CRCC), arbitrates disputes for all but the 5 largest chaebols; for these, it is proposed to concentrate ownership where there is excess capacity under a Structural Improvement Plan. The CRA has been signed by 200 financial companies.</p>	<p>Yes: Corporate Debt Restructuring Committee (CDRC) had received 42 applications for aid by end-1998; more in 1999; works with creditors and debtors to effect workouts. Banks threaten to sell delinquent loans to Danaharta which has extensive powers over the borrowers of any loans it buys.</p>	<p>(1) Unidad de Inversion (UDI) converted floating rate peso and dollar loans into long-term fixed-rate loans denominated in UDIs for household mortgages, loans of corporations, states and municipalities and development banks; (2) Programa de Apoyo Inmediato a Deudores de la Banca (ADE) provided an interest subsidy to small borrowers that remained or became current; (3) assistance for highway concessionaires that restructured their loans in UDIs;</p>	<p>Corporate Debt Restructuring Advisory Committee (CDRAC) uses the Bangkok/London Approach for workouts; classification standards for restructured loans were relaxed and tax impediments removed temporarily; tax exemptions are granted; a draft law establishes centralized credit bureaus; legal amendments will facilitate greater foreign ownership of property;</p>

Table 4. (concluded)

Action	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
<b>Restructure debt (continued)</b>			(continued) Rescheduling involves interest rate reductions, debt forgiveness, and exchanging debt for equity or convertible bonds		(continued) (4) discount on payments to mortgage debtors that restructured their loans in UDIs and remained or became current; (5) FINAPE's discount on monthly payments for borrowers in the agricultural and fishery industries that restructured their debts or remained current; (6) FOPYME gave assistance to micro, small, and medium-sized firms; (7) the Punto Final offers rebates on mortgage loans to borrowers whose loans are current.	(continued) bank ownership of equity easier to permit debt-to-equity swaps; the BOT is trying to facilitate loan workout for the 200 largest debtors; the state-owned Bank of Agriculture and Cooperatives permitted to give debt relief on a case-by-case basis.

Source: IMF staff analysis.

<sup>1</sup>The public sector includes the government, the central bank as lender of last resort (LOLR), the deposit insurance corporation (DIC), the asset management company (AMC), the restructuring agency, and any vehicle for recapitalizing banks.

(3) sold and transferred to a centralized AMC, which is typically state-owned. In the 1997–98 Asian crisis all countries accorded a significant role to this last option.

The government can purchase some or all of banks' impaired assets outright, and such action can be helpful under certain conditions. The value of loans (good or bad) on the bank's books will decline and the amounts of cash and government (or government-guaranteed) bonds will rise. This substitution lowers the value of risk-weighted assets and raises the risk-weighted CAR.<sup>42</sup> It thus facilitates compliance with prudential requirements; moreover, by reducing the riskiness of a bank's overall portfolio it may change the incentive structure for banks' managements. Asset purchases should, however, be supported by appropriate institutional arrangements for the resale of assets, debt workouts, and loan recoveries, so as to maximize the market value of purchased assets, and reduce the ultimate cost to the government. For this reason the crisis countries have typically created a special agency—an AMC—to acquire and handle bad assets (see Table 1).

Certain decisions must be made before the creation of an AMC

1. Do the advantages of asset purchases by a government agency outweigh the disadvantages and warrant establishment of a centralized AMC?
  2. Should the agency buy only from banks that are to be liquidated, or also from banks that are being assisted, or from any bank that wishes to sell its assets, regardless of that bank's condition, and whether the government has taken over the bank?
  3. Will the AMC buy both good and bad assets?
  4. Should the AMC warehouse assets (i.e., hold them over a longer period without trying actively to restructure or dispose of them)?
  5. What prices should it offer for the assets it purchases?
  6. What are the best institutional and operational arrangements for the AMC?
  7. Should the government encourage corporate debt workout and restructuring?
- Countries are taking different positions in answering these questions; some aspects of these issues which have a direct impact on the success of bank recapitalization are discussed below.

### The Purchase Price

In general, the authorities should not buy impaired assets at their book value when recapitalizing the institution because, in effect, this conceals the cost of recapitalization from the public.<sup>43</sup> Such a transaction subsidizes banks, can be used to bail

<sup>42</sup>Under the Basel Capital Accord, loans carry a 100 percent weight, while cash and government bonds carry a zero or 20 percent weight.

<sup>43</sup>An exception to the general rule may occur where the government buys banks' loans to public enterprises. Where these loans have received an explicit or implicit public guarantee, the government may, with justification, choose to buy the loans at close to the book value.

A question arises concerning provisions against assets that are purchased by the government. If the provision is greater than the loss on the sale of the asset, then the bank will benefit from the transaction. If the excess provisions are reversed in the profit and loss accounts, the government may recoup some of its outlays in the form of additional taxes on bank profits. This would happen, for example, when a provision is made for an asset which the government buys at book value.

out owners and managers, and violates the principle of transparency and accountability.<sup>44</sup> A realistic valuation/pricing of assets based on market pricing, sound accounting norms, strong loan classification and provisioning standards, and/or discounted present values, is crucial, as previously discussed in Section III. The rigorous recognition of loan losses is the first and most important element of an effective strategy for dealing with problem assets, because it creates the right incentives for banks to restructure their loans, foreclose on collateral, and precipitate bankruptcy reorganizations. The sellers of problem assets may be persuaded to accept conservative valuations if the asset purchase contract allows them to share unexpectedly good recovery values.

### Weighing the Advantages of Asset Purchases

Asset purchases by a separate government agency may have a number of advantages that can aid bank recapitalization and restructuring, and if supported by proper incentives for loan workout and recovery efforts, could control fiscal costs. Since banks' problems are often derived from a deterioration in their loan portfolios, measures directed at the loan portfolios come closest to the source of the problems and may, therefore, be the most efficient form of remedial action, thus enabling banks to quickly resume their normal operations.

Such asset purchases achieve economies of scale in asset management, particularly by centralizing scarce human resources, fostering the development of secondary markets for bank assets, and allowing the bank to focus on managing its good assets during its recovery. Handling assets through a centralized AMC is most appropriate where the banks originally holding the assets have been closed, where open banks holding the assets have no specific expertise in managing them, and where many banks may have claims on the same entity (for instance, a national airline or a major conglomerate).<sup>45</sup> In addition, asset purchases (and recapitalization with public funds generally) can be made conditional upon banks' participation in debt workouts for borrowers and the achievement of loan recovery performance targets for the assets retained in banks. Indeed, asset purchases/transfers complement a recapitalization package (for reasons already mentioned in Section II) with the allocation of funds between asset purchases and direct recapitalization varying among countries, according to specific institutional circumstances.<sup>46</sup> They can serve as an additional inducement to a bank for compliance with the conditions for a recapitalization package.

Problem assets should be purchased—with bonds or cash—at realistic and fair prices. As stated above, cash and bonds have lower risk weights than loans, and will thus raise the bank's risk-weighted CAR, as well as change operating incen-

---

<sup>44</sup>There are examples in Asia and elsewhere of assets purchased at inflated prices. However, in Indonesia and Malaysia, the asset management agency has stated that asset purchases are to be based on realistic values.

<sup>45</sup>Legal deficiencies may also be handled more easily through a centralized agency. See Stone (1998).

<sup>46</sup>By mid-1996, Mexico had spent two-thirds of its projected net outlays to purchase bad loans and support debtors; only one-third went to recapitalize banks. See Ito and Folkerts-Landau (1996), pp. 114–16. Countries typically purchase bad loans and support debtors when banks' internal governance is weak and property rights are poorly defended by the legal system.

tives for banks' managements. A swap of classified assets whose yields are uncertain for bonds that carry market rates may also reduce bank's funding costs by decreasing uncertainty. An exchange for cash or bonds, which are negotiable or can be discounted at the central bank, improves bank liquidity and permits banks to make loans or other investments, and to increase income.<sup>47</sup>

Asset purchases by a separate AMC have several important potential disadvantages, however. First, they do not raise banks' net worth unless the operation is done at above market prices, which, as discussed above, should be avoided. Asset purchases, thus, do **not** solve a problem of lack of capital in the banking sector. Second, the government needs to consider the overall cost of this form of assistance, as the expenses it incurs in disposing of the troubled assets may be high and difficult to estimate, depending on the legal and operational environment for loan recovery and the likelihood of being subject to political pressure. Third, asset purchases may provide liquidity if purchased, for example, with cash or negotiable bonds. As with a direct capital infusion, such additional liquidity would need to be managed in order to avoid any potential conflict with the monetary stance. Moreover, as with capital infusions, asset purchases can distort incentives if banks come to expect that the government will bail them out in the future by repeatedly buying their bad assets. Again, the pricing of the assets is the key issue.<sup>48</sup>

Overall, while one cannot draw universal conclusions, there do seem to be conditions under which the advantages of asset purchases by a separate AMC outweigh the disadvantages. These conditions must include an AMC staffed by financial experts who are both honest and skilled in asset management and sale, with operations that are transparent and cost-effective for the government. The AMC should have, if necessary, special legal powers to expedite loan recovery and loan restructuring and should be constructed as a temporary agency—for handling a special situation, not a permanent arrangement—in order to preserve a good incentive structure.

### Should the AMC Buy Assets from All Banks?

Some countries have chosen to acquire and sell assets only from banks that are being resolved by liquidation or merger.<sup>49</sup> Other countries also provide assistance to banks that are to remain open by buying their bad assets.<sup>50</sup>

When the AMC purchases assets from open banks, a potential conflict arises between economizing limited resources and being fair to all banks. Buying bad assets only from troubled banks that are targeted to receive government assistance could affect the survival probabilities of better banks that are still struggling,

---

<sup>47</sup>If the assets are purchased at written-down values, and if banks have already provisioned to those values, the sale of the assets should have no direct impact on a bank's profitability.

<sup>48</sup>If the centralized AMC is dealing with private banks, it is particularly important to determine transfer prices that do not involve an implicit subsidy, and such determination is quite complex in times of uncertainty.

<sup>49</sup>Thailand and the United States have taken this approach.

<sup>50</sup>Indonesia, Japan, Korea, Malaysia, and Mexico have bought bad assets from open banks.

unaided, with a portfolio of bad loans. One way for the government to resolve this dilemma is to buy some, but not all, of the bad assets of assisted banks; assisted banks should be left with roughly the same proportion of bad loans as the rest of the survivors in the industry.<sup>51</sup>

### Should the AMC Buy Only Impaired Assets?

The AMC, given the purpose of restoring banks to good health and of promoting corporate restructuring should, in general, purchase only impaired assets. Good assets left with banks, and those that are transferred to banks in exchange for bad assets, are the means to rehabilitate bank profitability and soundness.

When banks have a choice about which assets to transfer, they may seek to “cherry pick” and provide just the worst ones. Similarly, if the AMC can choose its assets, it will choose those where it sees the best possible returns.<sup>52</sup> This problem can, to some extent, be avoided by ensuring that sales are at a “fair” price, and by defining classes of assets—as “loss” or “doubtful” by the bank’s auditors—which are to be transferred in their entirety.

### Should the AMC Warehouse Assets?

There is disagreement about whether the AMC should warehouse assets. Some believe that selling assets, as soon as they have been catalogued and adequately serviced in preparation for sale, will establish a floor for asset prices in the economy. Establishing that floor will provide a turning point for economic recovery. They argue that warehousing assets prevents price adjustments, particularly where markets have ceased to function in the crisis, and the overhang of the stored assets impedes price discovery and market recovery, and prolongs the recession. Finding the price floor will promote a speedier recovery. Proponents of prompt sale also point to the danger of asset deterioration while under government control and claim that restoring assets to the private markets will ensure better maintenance.

Others disagree with this view; they believe that a “fire sale” will accentuate the depth of the recession. Thus, they argue that assets should be warehoused and released for sale slowly in order not to flood the market. Warehousing, they assert, will increase the net present value of the amount the government receives when it sells the assets and will reduce the taxpayers’ ultimate costs. The balance struck between these two options varies from country to country. The United States was particularly active in quickly on-selling assets taken over during the savings and loan crisis, although commentators suggest that the far greater depth of the markets in the United States means that it is not an appropriate model for other countries. Among the Asian crisis countries, Thailand has been forceful in quickly selling assets taken over by the public sector.

---

<sup>51</sup>This was the approach adopted by Sweden. See Ingves and Lind (1997).

<sup>52</sup>Where there have been governance problems associated with some assets, the bank may be reluctant to transfer them for fear that these problems would come to light. This has arguably been one of the reasons for the protracted process of transferring loans to the AMC in Indonesia.

## Institutional and Operational Arrangements

There are various institutional structures that will permit the asset management component of the BRA to accomplish its tasks. The institutional arrangements to work out or to recover problem assets could mean several roles for governments—to adequately and flexibly respond to different bank circumstances and market requirements.<sup>53</sup> As discussed in Section V, a proactive and centralized role for governments (e.g., government-owned asset management units) could be desirable in some circumstances (e.g., to deal with a large volume of problem assets acquired in mergers, bank closures, and recapitalizations, or to deal with large, legally complicated exposures). In contrast, an enabling role for governments that involves decentralized arrangements (e.g., debt-workout units within banks themselves, or separately capitalized loan recovery and asset management companies) is the most appropriate in many circumstances. For example, most impaired loans where the borrower itself has value as a going concern, and there is a likelihood that the borrower can pay after some financial restructuring, should remain with the originating bank or its successor. However, some small- and medium-sized loans or some insider loans, where the value lies mainly in recovery from underlying assets or collaterals, are often handled by separate loan-recovery companies outside of the banks.<sup>54</sup>

Operational aspects of the AMC are largely beyond the scope of this paper; however, they are relevant to the curtailing of government costs in bank recapitalization. In its activities, the AMC will rely on the valuation that has already been made of bank assets, the prognosis for recovery previously made by individual banks, and the identification of banks already deemed eligible for government assistance. The AMC's tasks are to ensure performance of the loans; take control of the assets, including legal title to collateral; protect real assets from deterioration; improve them if possible; prepare them for marketing; sell them at the best possible price; and go out of business when it has fulfilled its obligations. There are two extreme approaches to asset management. One is to treat each asset separately, selling real property item by item and holding individual loans to maturity while pursuing legal options to force borrowers to service their debts.<sup>55</sup> The second, at the opposite end of the spectrum on approaches, is to package the assets and sell them by auction in bulk.<sup>56</sup> The two choices reflect opinions about whether the AMC should **own** the assets or merely act as the **agent** handling the assets. The latter approach was used by the Federal Deposit Insurance Corporation in the United States, but in other countries the authorities have preferred direct ownership so they can essentially regroup and reorganize the assets before selling them. Again, no clear preference can be determined; different tools are appropriate in different cases.<sup>57</sup>

<sup>53</sup>See Nyberg (1997).

<sup>54</sup>Existing bank-client ties may, in fact, reflect a “cozy” relationship that could impede an aggressive liquidation process.

<sup>55</sup>This is the approach adopted in Lithuania as described in Maldeikis (1998).

<sup>56</sup>This approach is being used in Thailand, as described in Vichit-Vadakan (1998).

<sup>57</sup>For instance, it may be particularly productive to hold and repackage property companies before trying to sell them.



Contractors from the private sector can assist regardless of which approach is adopted by ensuring the performance of the loans. They can design and maintain a computerized database of the assets acquired and an electronic system for tracking loan conditions and dispositions. Investment bankers and other financial experts can design classification criteria for packaging assets, prepare the assets for marketing as securities, and conduct asset auctions.

## Encouraging Loan Workouts

AMCs and banks can facilitate debt workouts and debt restructuring of potentially viable corporate borrowers. Countries have taken widely disparate approaches to this tool. During the course of bank restructuring, some leave it to the banks themselves and to the private sector.<sup>58</sup> Other countries have been more active in working out and restructuring loans, especially where they believe that the legal system is inadequate in supporting purely private negotiations or where there are market failures.<sup>59</sup> However, if carefully constructed, debt workouts can support recapitalization efforts, whether done through capital injections or asset purchases. They should reduce debt or debt-service burdens and improve borrowers' abilities to repay their loans, thereby reducing the volume of nonperforming assets on banks' books without destroying, in the long run, the incentive structure for borrowers to repay their loans.

The enabling role of governments in facilitating loan-workout arrangements can take several forms, and can be an important component of bank recapitalization. Appropriate legal frameworks for bankruptcy and for dealing with collateral are, of course, necessary whatever the institutional mechanisms are for handling problem assets. Possible governmental actions range from the informal and decentralized to the formal and centralized.<sup>60</sup> In the informal decentralized approach the government provides incentives to encourage, and offers guidance on conducting, loan workouts. Taking a more active stance, it might arbitrate disputes among private negotiators. The ultimate interventionist action is to form a centralized AMC and have the government buy banks' bad debts in order to renegotiate, manage, and sell them. The right choice depends on the seriousness of the problem. In cases of deep insolvency and, ultimately, government ownership of banks, a government-owned AMC (or AMCs) is the likely outcome, while in less severe cases, a privately owned AMC is more likely. In many cases, both types of AMCs are needed to maximize loan recovery, in addition to building up effective loan-workout capacity within banks themselves to deal with normal credit risks.

---

<sup>58</sup>Japan and the United States have followed this approach.

<sup>59</sup>Indonesia, Korea, Malaysia, Mexico, and Thailand have assisted in the restructuring of private debt. The government of Mexico has been particularly active in providing support to households and small and medium-sized businesses. Corporate restructuring is being done privately with government encouragement.

<sup>60</sup>See Stone (1998).

Governments have often played a catalytic role in fostering corporate-debt restructuring, either as a component of bank recapitalization or as a separate complementary policy in times of banking crisis.<sup>61</sup> One framework for debtor-creditor negotiations where the government encourages corporate restructuring is the “London Approach,” which does not have any direct linkage to capital support facilities.<sup>62</sup> When advising the parties or arbitrating disputes between private negotiators, the government can encourage banks or other acquirers to restructure loans, and retain and recover impaired loans of uncertain value through government guarantees under income-maintenance, loss-sharing, stop-loss, or put-back provisions during a specified period.<sup>63</sup> There could also be arrangements for acquirers and sellers to share profits, if assets are sold or recovered for more than a specified amount.

In summary, the choice of institutional and regulatory arrangements for asset management, loan recovery, and corporate-debt restructuring is among the most critical aspects of successful bank recapitalization. The design of these arrangements should ensure realistic valuation of impaired assets, prompt recognition of loan losses, and a balanced and pragmatic approach to asset disposition that is neither too rapid nor too slow, to avoid losses on assets. Specific institutional choices to achieve these goals will depend also on the legal and governance constraints, the nature of the problem assets, and the size and distribution of these assets among banks. One cannot say which specific measures are best or should be adopted; the authorities will need to determine their policies on a case-by-case basis.

## VI. Other Actions to Aid Bank Recapitalization

Governments frequently try to aid banks in recapitalizing by reducing their liabilities, improving their income, and granting forbearance. Many of the techniques employed disrupt monetary and fiscal management, distort incentives, and reduce transparency. Because of these efforts, these techniques should be adopted cautiously, if at all. Nevertheless, they are being used in certain countries (see Table 5).

### Reducing Liabilities

Rather than increase bank’s assets to match its liabilities, the authorities may seek to reduce its liabilities to the level of its assets. Such a program is, however, often constrained by the comprehensiveness of guarantees already given to depositors and creditors (e.g., in the Asian crisis countries and Mexico), and the legal framework governing their rights under bank-bankruptcy laws. However, even where there is a comprehensive guarantee by the government or the central bank, it may be possible to reduce the size of the bank’s balance sheet by converting liquidity support from

<sup>61</sup>Examples of the former approach include bank recapitalization schemes linked to bank conciliation agreements in Poland, or to debt workout and restructuring in Thailand. See Montes-Negret and Papi (1977), and the capital-support schemes announced by the Ministry of Finance of Thailand on August 14, 1998.

<sup>62</sup>See Kent (1996 and 1997).

<sup>63</sup>These techniques have been used, for example, in Malaysia and in the United States.

Table 5. Other Actions by the Public Sector to Recapitalize Banks<sup>1</sup>

Action	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Burden-sharing	Shareholders and connected lenders.	Shareholders, and some junior creditors.	Shareholders.	Shareholders.	Shareholders.	Shareholder.
Assume debts (full guarantee)	Yes.	Yes: regular and call deposits, trusts, bonds.	Yes.	Yes.	Yes.	Yes: to honor the guarantee.
Reduce claims	The losses imposed on depositors in 16 closed banks were later retroactively fully guaranteed.	Shares, convertible bonds, and subordinated debt.	All shareholders in intervened banks.	Shareholders.	Maturities extended.	For some closed finance companies.
Other actions	Loan-loss provisioning (LLP) made tax deductible.	No automatic tax deduction for LLP: so banks created the Cooperative Credit Purchasing Co.; loan-loss carry forwards.	Removed limit on tax deductibility for LLP. Put options in P&As for acquiring banks.	LLP already tax deductible; national pension fund bought undervalued shares; lowered reserve and liquidity requirements.	25:75 loss-sharing on bad loans.	Tax deduct LLP, profit & loss-sharing; stop-loss and yield maintenance guarantees for new investors in intervened banks.

RECAPITALIZING BANKS WITH PUBLIC FUNDS

Table 5. (continued)

Action	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Forbearance	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.
CAR	CAR temporarily lowered to 4%; will gradually increase to 8%; have limited to 1.25% the general provisions to be included in Tier 2 capital (previously all general and specific provisions were allowable in Tier 2).	(1) Permit inter-national banks to convert to domestic status to lower their CAR to 4%; (2) grace period for compliance with even this low CAR; (3) excessively count deferred taxes and (4) some provisions against substandard loans as capital; (5) can value securities at book not the lower of book or market.	(1) Phased for commercial and merchant banks; (2) for others 8% will rule only in year 2000; (3) loan losses deferred for 3 years for merchant banks; (4) additional provisions required as a result of forward-looking criteria can be phased over 2 years.	Loan classification and provisioning firmed, then relaxed; then firmed again; CAR remains at 8%; supervision tightened; watch lists formalized.	The tightening in 1997 was reversed in 1998; restructured loans now count as performing even when nothing is paid up front; bonds have been reclassified from the trading to hold-to-maturity portfolio; sub. debt counts as base capital and specific provisions as regulatory capital; write down on banks 25% in loss-sharing can be phased over 8 years.	In exchange for restructuring corporate debts; either LCP to be phased in gradually until year 2000 or cost of debt restructuring can be deferred over 5 years.

Table 5. (concluded)

Action	Indonesia	Japan	Korea	Malaysia	Mexico	Thailand
Other	International loan classification and provisioning rules have improved, but recognition of the loss (in excess of provisions) on special-mention and substandard loans can be deferred for up to 4 years; losses on other loans are recognized immediately	Accounting, LCP tightened, but not always enforced; unconsolidated subs. hold bad loans; some banks do not classify or provision until loan is overdue 6 months and they may lend unpaid interest to enable the borrower to keep the loan current; banks have been allowed to revalue property and equities.	Yes: for merchant banks; otherwise accounting is improving and the timetable for phasing in the regulations serves to accelerate the process; ceased including special provisions for NPLs in Tier 2 capital in 1/1999.	For loans sold to Danaharta, banks have up to 5 years to recognize the difference between book value and selling price.	(1) Grace period for loan repayment; (2) the limit on shareholding raised from 10% to 20% of capital; (3) market share limitations were waived; (4) interest rate swap engineered in 9/98 to pay banks higher rates on their treasury securities; (5) banks could pledge non-negotiable FOBAPROA bonds as collateral; (6) IPAB notes are negotiable.	No.

Source: IMF staff analysis.

<sup>1</sup>The public sector includes the government, the central bank as lender of last resort (LOLR), the deposit insurance corporation (DIC), the asset management company (AMC), the restructuring agency, and any vehicle for recapitalizing banks.

the central bank into bank capital, thereby changing the management incentive structure, particularly as regards the size and riskiness of the bank's portfolio.

### Improving Income

The authorities sometimes assist banks through measures to improve the latter's income stream, including more lenient tax treatment of banks in various forms, and public sector loans or deposits at below-market interest rates, to improve income and liquidity. Such measures are not transparent and do not adequately address the problem of capital shortage while distorting monetary and fiscal management.

### Granting Regulatory Forbearance

Measures of regulatory forbearance<sup>64</sup> adopted in six countries are shown in Table 5. They range from counting certain items as capital in violation of the Basel Capital Accord, to relaxing loan classification and provisioning standards, to phasing in the minimum CAR. Forbearance can be hidden or explicit, and concealed forbearance should be eschewed. Forbearance that allows banks to disguise their losses and recognize them only slowly over time is particularly objectionable. However, in a crisis, one form of explicit regulatory forbearance—phasing in prudential and regulatory standards—can be a useful tool that facilitates recapitalization. The capital adequacy standard can be explicitly and temporarily reduced to some positive number below the desired standard, such as the Basel Committee's recommended 8 percent or a larger ratio. Banks, under closely monitored conditions, can then be allowed to raise capital over time on a specified and uniformly applied schedule, toward a desirable CAR.<sup>65</sup>

Sometimes countries choose to tighten loan-loss provisioning standards gradually over time, rather than adopt a gradual approach toward desired capital ratios with full compliance of provisioning rules. The gradual approach to desired capital ratios is preferable to the gradual increase in provisioning because it is more transparent. Moreover, the latter can reduce incentives for prompt recognition of asset values that are needed to support loan workout and efficient asset-management arrangements.

## VII. Conclusion

Recapitalizing and restructuring banks in the aftermath of a systemic crisis is a complex process that typically requires significant government intervention and takes several years to design and implement. To be effective, it must be carried out in a coordinated, prompt, but carefully prepared manner that reconciles financial

<sup>64</sup>Regulatory forbearance is used here in the sense of adopting a time-bound and internally consistent strategy for achieving prudential standards, rather than being required to achieve those standards immediately. It is not the same as neglecting prudential standards in the hope that conditions will simply improve.

<sup>65</sup>For example, United States, FDIC (1998).

and human resource needs with resource constraints, and provides an incentive structure that will foster financial stability in the future. It requires careful management both at the strategic level and at the individual-bank level in order to ensure that government investment in banks yields the maximum return and that an efficient and sound banking system emerges at the end of the process.

Achievement of these objectives requires effective institutional and organizational arrangements to make recapitalization and restructuring decisions, to manage impaired assets, and to foster rapid corporate restructuring. The approaches to recapitalization have varied, with countries choosing different mixes of direct capital injections and asset purchases and rehabilitation. In an effective recapitalization process, the two approaches are generally complementary, but a balance between the two approaches (which differs from country to country) is necessary in order to minimize the expected present value of government outlays, net of recoveries.

New investment in banks may also be encouraged by government efforts to aid the restructuring of corporate and consumer debt so that loan quality can improve. For example, lengthening maturities or debt-equity conversions can enable some borrowers, who would otherwise default, to repay their debt and reduce uncertainty in the market.

As restructuring and recapitalization proceed, and as financial stability is restored, the activities of the agencies established to handle these functions will change. They will shift from planning and implementation to preparation for cessation and closure. The BRA, BSA, and AMC will complete their assigned tasks and close down. As their terminations approach, the authorities must prepare to replace the full guarantee, if any, with a limited deposit insurance system, and make sure that the traditional mechanisms for effective corporate governance are firmly in place to preserve financial stability.

## APPENDIX I Glossary

**Asset-backed bonds.** Income from a homogenous bundle of assets can be used to pay the interest on collateralized bonds sold to pay for the purchase of the assets. The bonds may be sold in several tiers depending on the priority of their claim over the income from the assets. The claims with the highest priority have the least risk, and those holding residual claims after all other bond-holders have been paid, are the most risky. Financial institutions have widely used this technique to sell their mortgages to a mortgage banker who securitizes the loans. It is now being adapted for marketing impaired assets. The issuer of the bonds may offer an interest guarantee on some tranches of the debt.

**Asset management company (AMC).** A separately capitalized institution, owned privately, publicly or jointly, that is established for a limited period of time to restructure, manage, and sell the problem assets acquired during bank closures and restructuring. A country may establish one centralized AMC or a number of decentralized ones.

**Bad bank.** The portion of a troubled bank that represents the “bad” assets. Sound assets and often some of the liabilities, particularly the insured deposits, go to the “good bank,” for example, in a purchase and assumption transaction. The nonperforming assets go to the “bad bank,” which typically does not accept deposits from the public. The bank’s principal liability is likely to be the equity of its public or private owner.

**Bank restructuring agency (BRA).** A lead agency, often created specifically to design and coordinate the implementation of the comprehensive strategy for bank restructuring and recapitalization. This agency coordinates with other government agencies and is accountable to the government for the restructuring process.

**Bank support authority (BSA).** The subsidiary of the BRA that provides financial support to banks that continue to operate.

**Bridge bank.** A newly chartered, nationalized bank established and operated by the authorities on an interim basis to acquire the assets and assume the liabilities of failing institutions, until final resolution can be accomplished. The use of bridge banks is generally limited to situations in which more time is needed to permit the least costly resolution of a large or complex institution.

**CAMELS rating.** The quality rating for banks that typically ranges from 1 for the best banks to 5 for the worst. CAMELS stands for capital, asset quality, management capacity, earnings, liquidity, and systemic risk.

**Centralized approach to asset management.** One centralized AMC, which is common to all banks and may be government- or privately-owned, recovers value from troubled assets individually or in bulk through debt servicing, debt renegotiations, asset swaps, liquidations, and sales of collateral. The AMC may also be involved in corporate restructuring.

**Comfort letter.** A letter from the owners and managers indicating their willingness to perform certain actions required by a supervisor, such as being prepared to recapitalize a bank when instructed.

**Debt auction.** A debtor asks individual creditors to submit bids indicating the percentage repayment they would be willing to accept in settlement of their debts. The debtor then repays those submitting the smallest percentages, probably paying a uniform, cut-off price.

**Debt workouts.** Agreements between borrowers and lenders to restructure the debts of heavily indebted borrowers. Restructuring a loan for a financially distressed borrower can be more productive for a bank than foreclosing on the collateral or initiating lawsuits to collect on the debt.

**Decentralized approach to asset management.** Each bank retains financial responsibility for working out its problem assets. Its workout unit may be run as a separate department of the banks or as a wholly-owned subsidiary.

**Due diligence.** The on-site inspection of the books and records of a failing institution. Before an institution's failure, the authorities invite potential purchasers to the institution to review pertinent files so they can make informed decisions about the value of the failing institution's assets. Such potential purchasers must sign a confidentiality agreement. In addition, contractors may be hired to perform due diligence on assets that are earmarked for multi-asset sales initiatives.

**Essentiality.** An exception to the financial criteria that should usually govern eligibility for recapitalization with public funds may be made when a bank provides essential, irreplaceable services to the economy and/or is too large to be closed.

**Fit-and-proper test.** An evaluation of the competence, integrity, qualifications, and experience of the owner, senior managers, and directors of a bank. This evaluation involves background checks on whether previous activities, including adverse regulatory or judicial decisions, raise doubts concerning competence, sound judgment, or honesty.

**Franchise value.** The franchise value is the discounted present value of the bank's future profits. Thus, a bank with zero net worth could have a positive franchise value, which an acquirer would be willing to buy. Deposits that can be invested at a positive profit have a positive franchise value.

**Good bank.** A bank whose bad assets have been removed.

**Income (or yield) maintenance agreement.** A resolution method used by the authorities to guarantee a market rate of return on certain assets of troubled banks. For example, the authorities may pay the holder the difference between the current yield on assets and the bank's average cost of funds. These agreements can also be used to facilitate mergers and Purchase and Assumptions (P&As) between troubled banks and healthy institutions.



**Intervention.** The intervention may take several forms: an insolvent bank may be closed; an undercapitalized bank may be nationalized, placed in conservatorship, or given capital assistance while under close supervision.

**Loss-sharing agreement.** An agreement between the acquiring bank and the authorities regarding the sharing of losses in a failed bank. Loss sharing aims to sell as many assets of a failed bank as possible to the private sector and align the interests and incentives of the acquiring bank and the authorities so that the assets are well-managed and maximum recoveries are obtained. Under loss sharing, the authorities agree to absorb a significant portion of the loss—typically 80 percent—on a specified pool of assets while offering even greater loss protection in the event of financial catastrophe. The acquiring bank is liable for the remaining portion of the loss.

**Memorandum of understanding (MOU).** A written statement indicating agreement between a bank and its supervisor that the bank perform certain actions.

**Noncumulative preferred shares.** A perpetual component of Tier 1 capital that provides the owners with special voting rights as well as a fixed amount of dividends, where the bank's financial results permit.

**Open-bank assistance.** A term used especially in the United States to indicate financial assistance to a bank that will be allowed to continue in business. That bank may be briefly closed and its shareholders wiped out to be reopened as a temporary bridge bank or, as in the case of Continental Illinois National Bank, shareholders may be allowed to retain some residual ownership rights.

**Options.** A call option gives the right, but not the obligation to purchase an asset at an agreed-upon price at a specified date (European option), or within a specified period (American option). A put option conveys a similar right, but not the obligation to sell.

**Profit sharing.** Gives the government an opportunity to share in the upside potential when the economy recovers. A government-owned asset management company (AMC), for example, may lend funds to a private sector acquirer to enable him to purchase restructured assets. In addition to paying interest, the acquirer may agree to convey, for instance, 20 percent of the profits he earns on the acquisition, to the AMC.

**Purchase and assumption (P&A).** An acquiring bank purchases the assets and assumes the liabilities of a failed bank. The transaction may cover all of the assets (whole bank P&A), or the best part of the assets ("good bank" P&A).

**Put-back provision.** A provision under which an assuming institution has the option of returning to the authorities, within a specified time period, certain assets that have been transferred to the acquiring institution.

**Risk-weighted capital adequacy ratio.** The Basel Capital Accord assigns risk-weights to on- and off balance sheet exposures, according to broad categories of relative riskiness. The Accord sets minimum capital ratio requirements for internationally active banks of 4 percent for Tier 1 capital and 8 percent for total capital in relation to risk-weighted assets.

**Securitization.** The AMC can hire an expert investment bank to set criteria for packaging a bundle of impaired assets into a relatively homogeneous group. Asset-backed bonds are then sold to finance the asset purchase. These assets will be serviced either by the AMC or by a company expert in this task and the income received will be used to pay the interest owed on the bonds.

**Stop-loss agreement.** A "stop-loss" agreement imposes limits on the acquirer's exposure to unanticipated losses on the shared loss-assets. If asset losses exceed the authorities' best estimate of the loss, their percentage coverage is then increased, for instance, to 95 percent, and the acquiring bank's exposure is reduced to 5 percent of the loss.

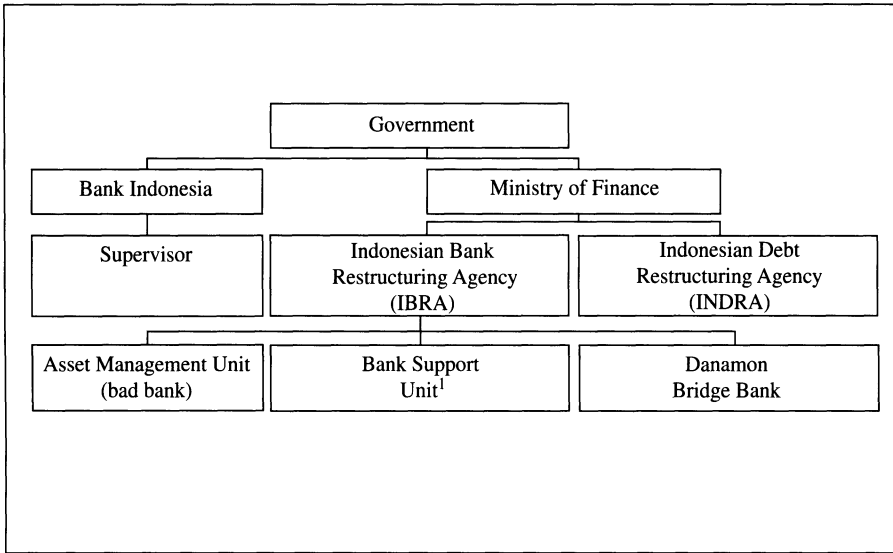
**Triage.** The division of institutions between those that need no help, those that are worth helping, and those that are beyond help.

**Warrants to purchase.** Securities that give their holders the right to purchase a certain number of the shares of common stock in a corporation, at a pre-set price and under pre-defined conditions.

**Yield maintenance agreement.** See income-maintenance agreement.

APPENDIX II

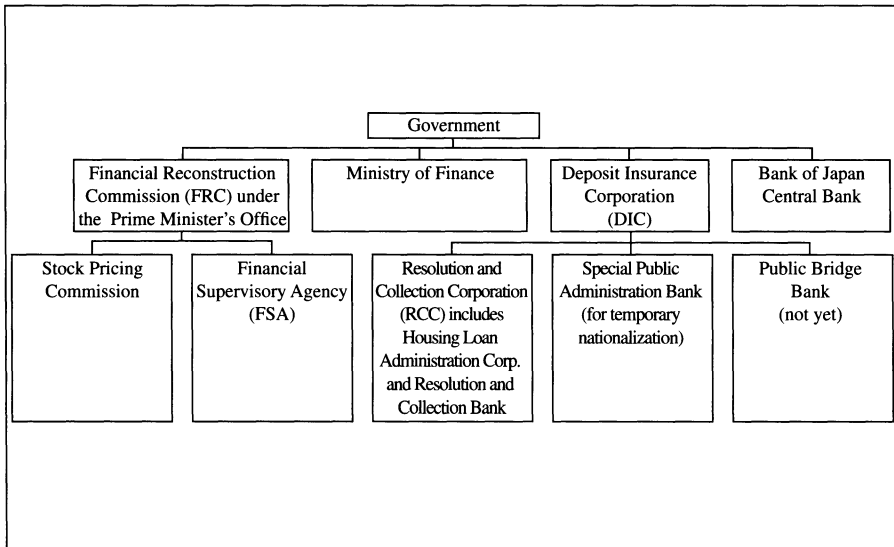
Figure A1. Institutional Framework: Indonesia



Source: IMF staff analysis.

<sup>1</sup>In principle, the IBRA should be independent; in practice, it is not.

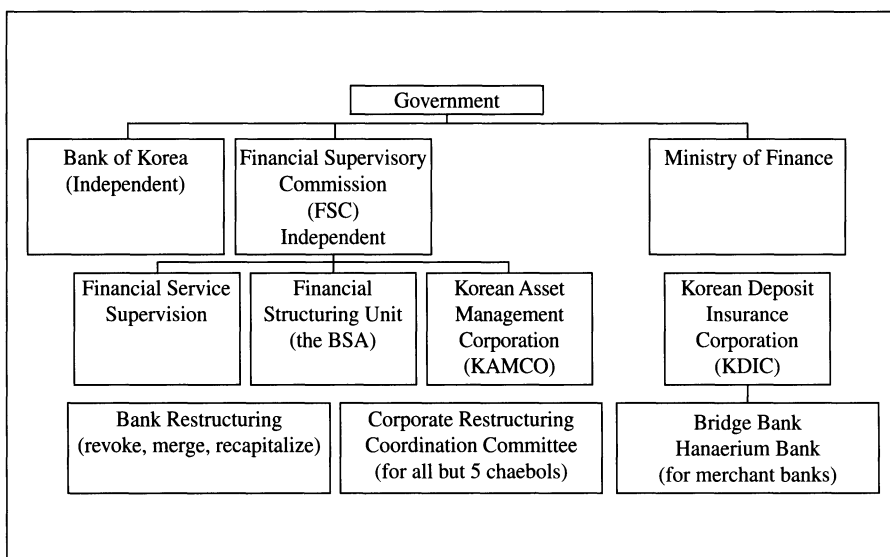
Figure A2. Institutional Framework: Japan<sup>1</sup>



Source: IMF staff analysis.

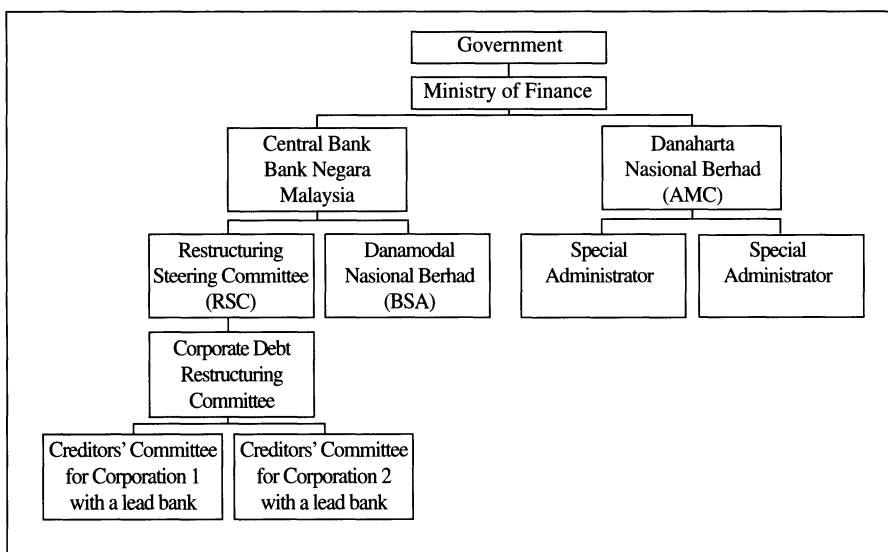
<sup>1</sup>Since April 1, 1999.

Figure A3. Institutional Framework: Korea



Source: Presentation for the SEANZA Forum of Banking Supervisors, November 1998; IMF staff analysis.

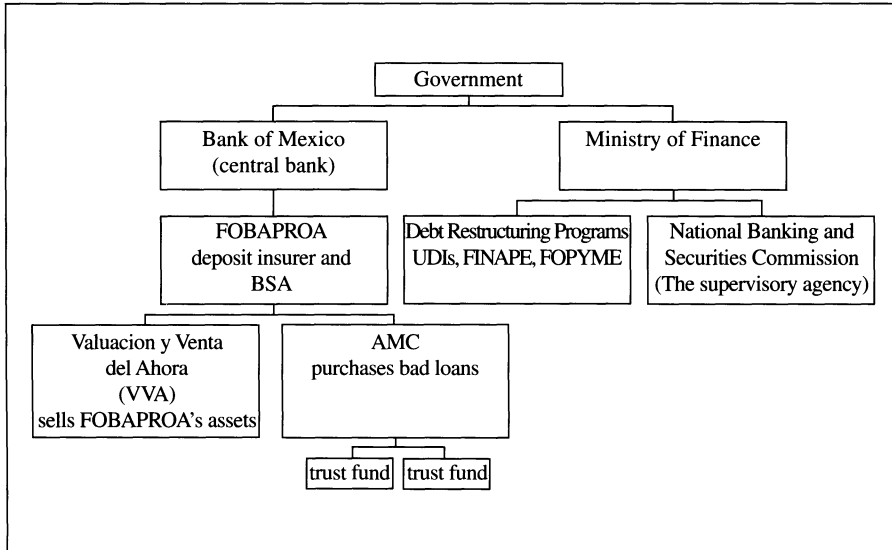
Figure A4. Institutional Framework: Malaysia



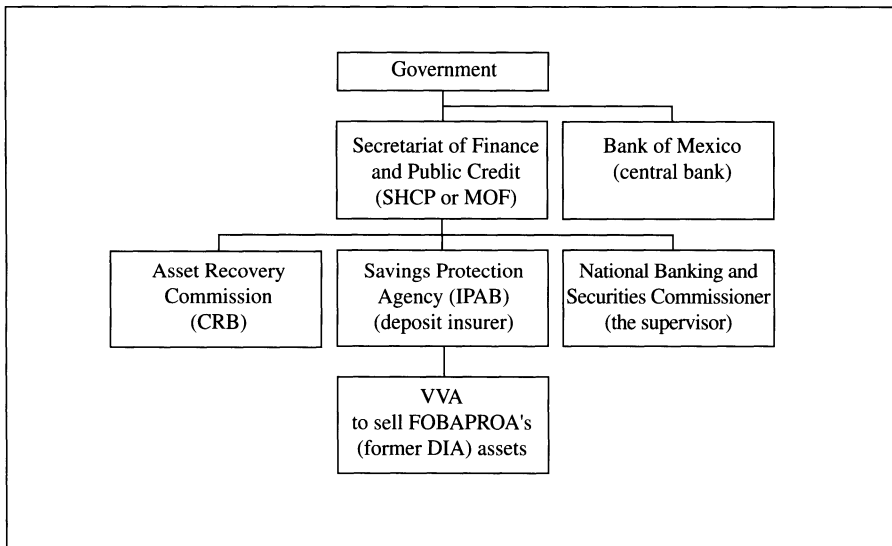
Sources: Presentation for the SEANZA Forum of Banking Supervisors, November 1998; IMF staff analysis.

Figure A5. Institutional Framework: Mexico

(a) Before 1999

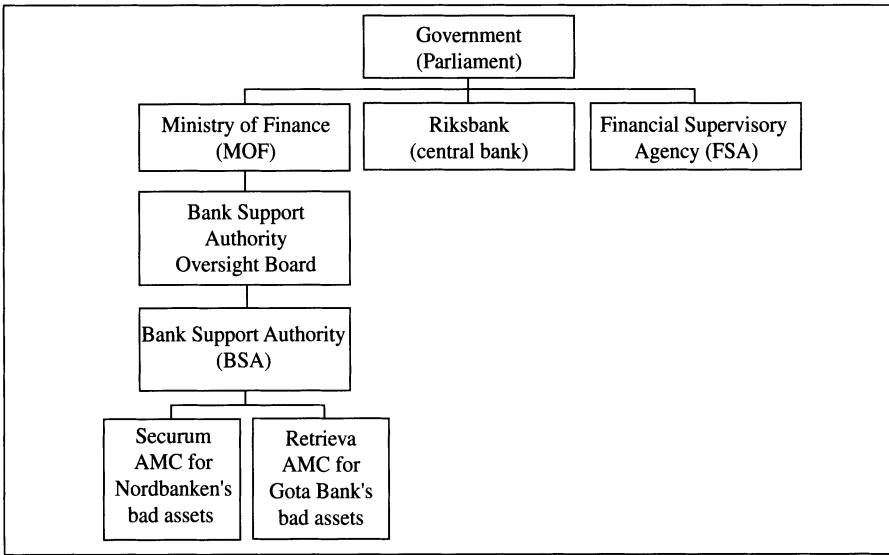


(b) In 1999



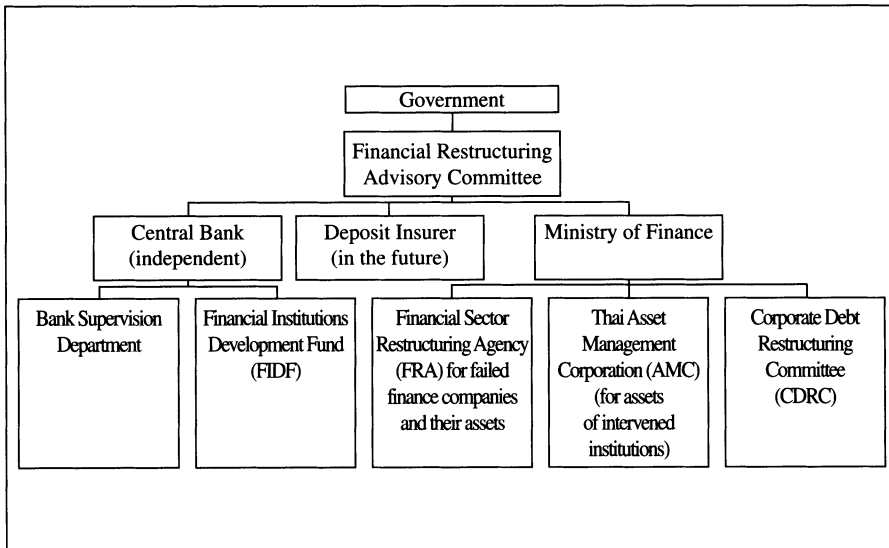
Source: IMF staff analysis.

**Figure A6. Institutional Framework: Sweden**



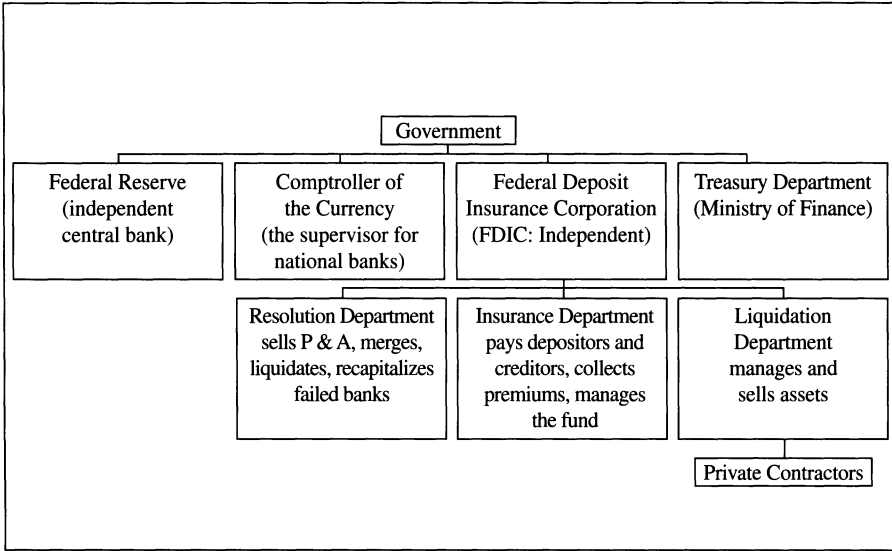
Source: IMF staff analysis.

**Figure A7. Institutional Framework: Thailand**



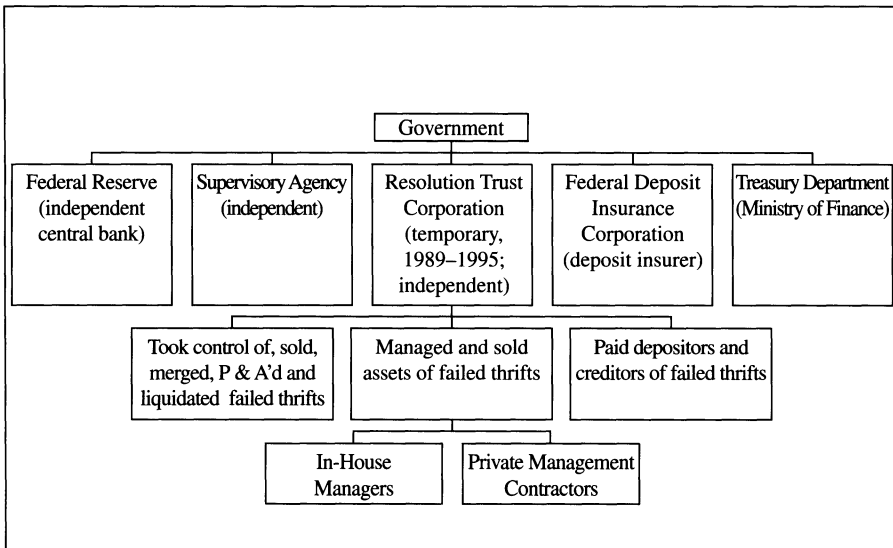
Source: IMF staff analysis.

Figure A8. Institutional Framework: U.S. Federal Deposit Insurance Corporation Model



Source: IMF staff analysis.

Figure A9. Institutional Framework: U.S. Resolution Trust Corporation Model



Source: IMF staff analysis.

## REFERENCES

- Alexander, William, Jeffrey Davis, Liam P. Ebrill, and Carl-Johan Lindgren, 1997, *Systemic Bank Restructuring and Macroeconomic Policy* (Washington: International Monetary Fund).
- Basel Committee on Banking Supervision, 1998, "Instruments Eligible for Inclusion in Tier 1 and Tier 2 Capital," Press Release, October 27 (Basel: Bank for International Settlements).
- , 1999, *The Compendium of Documents Produced by the Basel Committee on Banking Supervision*, February (Basel: Bank for International Settlements).
- Dziobek, Claudia, 1998, "Market-Based Policy Instruments for Systemic Bank Restructuring," IMF Working Paper 98/113 (Washington: International Monetary Fund).
- Ingves, Stefan, and Göran Lind, 1997, "Loan Loss Recoveries and Debt Resolution Strategies," in *Banking Soundness and Monetary Policy: Issues and Experiences in the Global Economy*, Charles Enoch and John H. Green, eds. (Washington: International Monetary Fund).
- Ito, Takatoshi, and David Folkerts-Landau, 1996, *International Capital Markets: Developments, Prospects, and Key Policy Issues* (Washington: International Monetary Fund).
- Kent, Pen, 1996, "International Debt: A Case-by-Case Strategy," *Banking World*, No. 5 (May), pp. 13–16.
- , 1997, "Corporate Workouts: A U.K. Perspective," in *Crisi d'Impresa e Risanamento* (Milan).
- Maldeikis, Eugenius, 1998, "Asset Disposition in Lithuania," paper presented at the FDIC International Conference on Deposit Insurance, Conference Papers Volume II, September 9–11.
- Ministry of Finance, Thailand, 1998 *Capital Support Schemes* announced on August 14 (Bangkok).
- , and the Bank of Thailand, 1998, *Joint Statement* of August 14, 1998 (Bangkok).
- Montes-Negret, Fernando, and Luca Papi, 1997, "The Polish Experience with Bank and Enterprise Restructuring" (Washington: World Bank, FSDD).
- Nyberg, Peter, 1997, "Authorities' Role and Organizational Issues in Systemic Bank Restructuring," IMF Working Paper 97/92 (Washington: International Monetary Fund).
- Stone, Mark R., 1998, "Corporate Debt Restructuring in East Asia: Some Lessons from International Experience," IMF Paper on Policy Analysis and Assessment 98/13 (Washington: International Monetary Fund).
- Sundararajan, V., 1999, "Prudential Supervision, Bank Restructuring, and Financial Sector Reform," in *Sequencing Financial Sector Reforms—Country Experiences and Issues*, R. Barry Johnston and V. Sundararajan, eds. (Washington: International Monetary Fund).
- United States, Federal Deposit Insurance Corporation (FDIC), 1998, "Other Resolution Alternatives," in *Resolutions Handbook: Methods for Resolving Troubled Financial Institutions in the United States* (Washington: Government Printing Office).
- Vichit-Vadakan, Vicharat, 1998, "Thai Financial Crisis and Reform," paper presented at the FDIC International Conference on Deposit Insurance, Conference Papers Volume II, September 9–11.