

Macroeconomic Impact and Policy Response

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In a generally healthy and well-regulated banking system, individual banks can and usually should be allowed to fail. Allowing market discipline and supervisory intervention to weed out weak institutions minimizes moral hazard. Where vulnerability is widespread, however, the potential negative externalities associated with widespread bank failures may call for intervention beyond what can be accomplished by the market or standard supervisory instruments.¹ Systemic bank restructuring comprises a comprehensive program to rehabilitate a significant part of a banking system so as to provide vital banking services efficiently on a sustainable basis. Such restructuring programs have been undertaken by some 30 Fund member countries over the last fifteen years in a range of economic and political circumstances.

Systemic bank restructuring programs typically encompass an array of microeconomic, institutional, and regulatory measures.² Such programs also have significant macroeconomic implications, not least because the fiscal and quasi-fiscal costs are usually substantial. There are also implications for monetary policy, the balance of payments, macroeconomic stability, and growth; for the equity, efficiency, and transparency of public policy; and for the future functioning of financial markets.

Systemic bank restructuring has often been a response to an outright or impending crisis, typically manifested by bank illiquidity, runs on banks and on the domestic currency, or an impending cutoff of foreign interbank lines of credit. In other cases (such as most of those in Africa and transition economies) restructuring was undertaken during financial distress

¹See Lindgren, Garcia, and Saal (1996).

²A framework for assessing restructuring strategies is developed in Chapter 2.

when significant problems were apparent, but without a liquidity crisis. The scale of the banking sector problems and the strategies used to address them have sometimes had important implications for the balance of payments. Some countries confronted their banking problems in the context of Fund-supported programs or with assistance from the World Bank and regional development banks, while others acted without external support.

The linkages between the banking system and macroeconomic policy have made bank-restructuring programs an important issue for the Fund. This chapter considers strategies for systemic bank restructuring and their macroeconomic aspects and implications. It reflects experience gained in the Fund's technical assistance programs and other work over the last few years, and draws on lessons from the countries surveyed in Chapter 3. Among the international financial institutions, the World Bank and regional development banks have had lead responsibility in providing assistance for bank restructuring to developing and transition economies.

Across countries, authorities' goals in undertaking bank restructuring have been similar, with differences arising from initial conditions in individual countries, from market and political pressures, and from the urgency under which the restructuring program was formulated and executed.

Restructuring Strategy

As soon as systemic banking problems are recognized, comprehensive policies should be implemented to prevent further deterioration, minimize the cost of any restructuring, and reduce the likelihood of a liquidity crisis. Systemic bank restructuring is a multiyear process and typically consists of a comprehensive package of macroeconomic, institutional, and regulatory measures. The problem needs to be assessed and the key strategic decision regarding who will bear the losses must be made. Institutional responsibility for implementation needs to be assigned. This section provides a basis for the assessment of restructuring strategies by laying out the principal elements of such a strategy and then focusing on the financial and operational restructuring instruments that must be at its core.

Assessing the Problem

To formulate a workable restructuring strategy and determine the specific instruments for achieving its goals, the financial and operational condition of individual banks and the problems of the overall banking system must be assessed. The assessment should cover, *inter alia*, the solvency (net worth) of banks, present and potential operational efficiency, prof-

itability, cash flows, and the capacity of the system as a whole to provide necessary financial services to the economy. It should also consider the principal causes of the banks' problems, including deficiencies in the operating framework (e.g., the legal system and the competitive structure) and the macroeconomic environment.

In most cases, only an approximate assessment of most of these factors can be made within a reasonable period. For example, as a banking system deteriorates or a crisis emerges, data become much less reliable. The net worth of a problem bank with an impaired loan portfolio can only be estimated and will evolve as the underlying circumstances of the economy and banks' clients change and as asset values shift, partly in response to changes in public confidence and economic policies.³ In such circumstances, estimates of bank asset values and off-balance sheet items can be used, based on available supervisory and audit data adjusted, to the extent possible, for probable losses.

Assessment should distinguish potentially viable banks that merit restructuring from nonviable banks that will have to be closed.⁴ Estimates should be made using uniform assumptions and methodology to facilitate aggregation and analysis for the entire banking system.⁵ Information on the exposure of individual banks to each other, to other domestic financial institutions, to banks abroad, to the central bank, and to the public sector (including governments at all levels, public agencies, and public sector enterprises) will help determine the likely risk of system contagion and the potential incidence of losses, although in this respect too, some data are likely to be at best rough estimates.

Allocating Losses

By the time restructuring begins, the losses of insolvent banks have already occurred, cannot be reduced (e.g., through creative accounting), and should be distributed as transparently and equitably as possible. Resources to fill the holes in the balance sheets—both at banks that have already failed and at those awaiting restructuring—most often come only from the government or the domestic private sector.⁶ The government may provide transfers or recapitalize, usually increasing public sector

³See Lindgren, Garcia, and Saal (1996), Appendix I.

⁴An assessment of whether some nonviable banks provide services that are considered essential to the efficient functioning of the economy may be required. There may be cases when a bank may be "too big to fail" without causing significant damage to the economy, however, this concern is evoked far more often than clearly justified.

⁵Common valuation criteria for bank assets will enhance their transparency and transferability.

⁶When available, foreign capital typically goes through the government or under a government guarantee. Private foreign capital has rarely been forthcoming.

indebtedness. Private sector owners, other banks, bank creditors and depositors, and borrowers may also be obliged to bear the costs by writing down capital or deposits, or by paying wider spreads between deposit and loan rates as banks try to earn their way out, effectively "taxing" customers. The problem of allocating losses is complicated by the fact that the loss estimates change as the restructuring proceeds. Nevertheless, establishing the principles that will guide the allocation is critical, not least because it will be an important determinant of the macroeconomic, especially fiscal, impact of the restructuring.

Losses should first be charged against owners' capital to reinforce market incentives for remaining or future bank owners. Experience indicates that in most cases of insolvency, owners will not be willing to put in additional capital; as a result, they should be required to relinquish control of their bank to the creditors. The distribution of creditors' losses is usually defined by the specific bankruptcy law (e.g., on a pro rata basis or on an established preference ranking) but will be modified by the specific rules guiding any existing depositor protection scheme or explicit government guarantees.

The typical country experience is for the public sector to absorb a large share of the accumulated banking system losses, as well as most of the administrative costs of bank liquidation and restructuring. In some cases, losses have been imposed directly on depositors without causing a panic or a run on banks. Nevertheless, governments are wary of imposing costs on depositors and other creditors for fear of political repercussions as well as domino effects, disruption of the payments system, or general loss of confidence.⁷ Equity considerations might also dictate that the government absorb losses when banking sector problems reflect government action (or inaction), such as intervention in the credit allocation process, grossly inadequate macroeconomic policies, extreme regulatory forbearance permitting fraud, or excessive support from the lender of last resort (LOLR) that has inhibited market discipline.

Designing Strategy

A comprehensive strategy for systemic bank restructuring must be designed to improve the finances and operations of individual banks,

⁷Thus, the relative scarcity of runs in modern banking systems reflects government or central bank policies specifically designed to forestall runs. Nevertheless, runs, some limited and others more extensive, have occurred in recent years in Argentina, Bolivia, Bulgaria, Chile, the Czech Republic, Estonia, Hong Kong, Hungary, Japan, Jordan, Malaysia, the Philippines, Taiwan Province of China, Tanzania, Thailand, Turkey and the United States (see Lindgren, García, and Saal (1996), Tables 2 and 3, and García and Saal (1996), Table 1).

redress any deficiencies in the operating environment and configuration of the banking system, and restore public confidence. Some of the highlights of the country experiences surveyed in Chapter 3 are presented in Box 1.

In virtually all countries, deficiencies of bank management and of governance structures are important contributors to systemic banking problems and therefore operational restructuring of individual banks must be an integral part of a systemic response. Operational restructuring includes refocusing a bank's attention on core products; improving its techniques for credit assessment and pricing; strengthening its management practices and accounting systems; and ensuring adequate accountability and disclosure.⁸ It often involves reviewing a bank's branch network structure and organization. To stem the flow of losses, changes in management, staff reductions, and other cost-cutting measures are often required, along with improvements in operating methods, such as loan approval procedures.⁹ As shown in the case studies and in the statistical survey (Chapter 3), failure to achieve operational restructuring is likely to lead to recurrence of banking problems. Addressing the existing stock of accumulated losses also requires both operational and financial restructuring. The instruments chosen to accomplish this put into effect the authorities' decisions with respect to loss allocation and determine the fiscal impact of the program; they are discussed in greater detail below.

For the system as a whole, it is important to ensure that a legal and institutional framework that promotes sound banking is in place, that supervision and prudential regulation are improved, and that the structure of the sector does not inhibit competition or profitability. Measures to transparently and credibly rehabilitate the banking sector will be the most important contributors to restoring public confidence. Additional measures, such as the provision of an appropriate LOLR facility and deposit insurance, may also be needed.

Achieving an early consensus on policy goals and broad principles and on who will be responsible for planning and implementation will improve the efficiency of the strategy's execution and forestall coordination problems. The political commitment required to accomplish a systemic restructuring implies that initial planning should take place at a high level, and that the overall strategy should be approved by the parliament or its equivalent. The details of implementation, on the other hand, are best determined at the technical level. Experience has taught that restructuring is not a task for bank supervisors alone. An expert technical group is

⁸Operational restructuring is discussed in more detail in Chapter 2.

⁹Related measures to address solvency and profitability problems in the real and nonbank financial sectors may also be required (see Borish, Long, and Noël (1995)); these are beyond the scope of this paper.

Box 1. Lessons from Experience: Strategy

A *comprehensive approach* is required, addressing not only the immediate stock and flow problems of weak and insolvent banks, but also correcting shortcomings in the accounting, legal, and regulatory framework and improving supervision and compliance. Chile, Côte d'Ivoire, the Philippines, Poland, Spain, and Sweden successfully implemented far-reaching reforms in the banking sector as part of their restructuring strategies.

Prompt action is an important ingredient of success. Countries that achieved substantial progress took action within one year of problems emerging. Action may be slowed where the authorities lack the necessary legal powers. In Chile and Côte d'Ivoire, response was delayed by several months, but once legal difficulties were overcome both countries undertook comprehensive restructuring.

Firm exit policies are an integral part of best practice; most countries achieving substantial progress closed one or more banks. Closure was emphasized in Chile, Côte d'Ivoire, the United States, and a number of transition countries. Both Côte d'Ivoire and Latvia convincingly demonstrated that no bank would be protected exclusively because it might be considered "too large to fail."

Designating a *lead agency* improves implementation. Sweden formed a new agency; in Spain and for banks in the United States, the deposit insurance agencies took the lead; in Côte d'Ivoire, external donors played an important role in managing the bank-restructuring process. Experience shows that when the central bank is the lead agency, it is frequently drawn into financing bank restructuring, resulting in a strain on its resources and conflicts with its other responsibilities. While the cooperation of the government, the central bank, and the bank supervisory authorities is necessary, the lead agency should have some degree of autonomy and be backed by a firm and unambiguous commitment to reform at the highest levels of government.

Source: Chapter 3.

best suited to implement the strategy in order not to distract the budgetary, monetary, and supervisory authorities from their regular tasks. The expert group could be a special agency established for this purpose, or a unit within the ministry of finance or the central bank. Regardless of institutional arrangements, accountability and close cooperation between the different authorities will be vital.

Assessing problems and diagnosing their causes will determine the appropriate specific policy responses, but in all cases successful systemic bank restructuring requires attention to a broad range of microeconomic

measures. The availability of expertise is often a constraint, and legal issues such as the lack of a framework for supervisory control of banks, for bankruptcy, and for the transferability of assets may also delay or halt the bank-restructuring process. It is therefore important to identify and remove critical bottlenecks early and to keep the strategy as simple and flexible as possible.

Implementing Instruments for Financial Restructuring

Financial restructuring aims at restoring solvency by improving banks' balance sheets (stock position) and income statements (flow position) to provide an adequate level of capital, a capacity for sustainable earnings, and the flexibility to manage liquidity and control risk exposure.¹⁰ Some of the principal lessons from the survey in Chapter 3 are presented in Box 2. The rest of this section provides an overview of the instruments for restoring the balance sheet and improving the income of banks to be rehabilitated; some of these will also be useful in liquidating those banks that are to be closed.

Country experiences indicate that it is important that the instruments chosen conform to a few basic principles. The instruments chosen should be cost effective, taking into account both the immediate and the longer-term costs (e.g., debt service), and simple to implement. They should be designed to distribute losses equitably and minimize the public sector burden. Limiting public sector contributions to financial restructuring is necessary not only to contain the fiscal burden and provide sound macroeconomic management but also to avoid giving rise to the moral hazard of subsequent expectations of additional support during this or a future instance of banking distress. Finally, moral hazard is reduced and internal governance of banks promoted if the restructuring instruments require those responsible for creating the losses to bear them.

Improving the Balance Sheet

There are, in essence, three ways to improve the balance sheet: inject new capital, shrink liabilities, or rehabilitate assets to reverse some of the losses.¹¹

¹⁰Proper accounting for the accumulated losses on loans and other assets and operating deficits of a troubled bank will show that capital is severely impaired or, more likely, negative. The continued operation of such a bank is dangerous: there is no cushion against losses, and owners with no capital at stake have little or no incentive to operate the bank responsibly; they may even loot the bank before control is taken from them.

¹¹Further shrinkage of the asset portfolio can help to make the bank more manageable but does not restore solvency.

Box 2. Lessons from Experience: Instruments

Government financial support of insolvent banks is unavoidable in most instances. *Bond transfers and other financial instruments* were widely used. Successful use of such instruments in the Philippines, Poland, Spain, and Sweden combined financial support with changes in management and detailed plans for operational restructuring. The experiences of Mauritania and Tanzania illustrate that when financial support is given without a such restructuring problems recur.

Liquidity support to viable banks may be required during restructuring. Very few countries avoided using the central bank to provide short-term liquidity support, via broad application of discounting, short-term loans, or reductions of reserve requirements. Successful countries, however, minimized the use of central bank financing and avoided central bank lending to insolvent banks.

Determining how losses will be shared between the state, the banks, and the public is an integral part of successful bank restructuring. Loss-sharing arrangements can be facilitated by designating a deposit insurance agency funded by contributions from banks as lead agency, as was the case in Spain and in the United States. In most countries the authorities have avoided imposing losses on depositors, although increasingly some have imposed such losses.

Most countries found it *easier to address the stock problems* than to restore income flows and profitability. *Removing nonperforming loans* from the banks' balance sheets and transferring them to a separate loan recovery agency is an effective way of addressing the banks' stock problem. It may not, however, be sufficient to solve the flow problem.

Source: Chapter 3.

Injecting Capital

The most common methods of injecting capital are shown in Table 1. Private sector contributions to capital may take the form of cash purchases of equity issued by the bank (tier 1 capital on the Basle Committee definition) or new subordinated debt (tier 2 capital).¹² Usually government assistance takes the form of transferring assets to the bank. With no corresponding claim made on the liability side, this increases the bank's equity. When government assistance is designed as a swap of government debt for nonperforming assets, the pricing of the assets is critical. A one-for-

¹²See the Basle Committee on Banking Supervision (July 1988).

Table 1. Capital Injections in Selected Countries

From	Form	Countries	Issues
Existing private sector owners new investors	Cash or other assets.	Mauritania (1993) Tanzania (1995) Mexico (1995–96) United States (1980s)	Equity is preferable to subordinated debt. Other assets must be realistically valued.
Government	Cash.	Egypt (1991) Finland (1991–94) Mauritania (1993) Philippines (1986) Sweden (1991)	Fiscal cost. Monetary implications. Moral hazard.
	Long-term loans or other instruments representing a government claim or participation.	Argentina (1994–95) Azerbaijan (1995) Finland (1991) Hungary (1994) Mexico (1995)	Fiscal cost. Moral hazard. Loans are debt, not equity, but may count as capital.
	Debt transfers (unrequited or in exchange for over-valued problem assets).	Chile (1984) Ghana (1990) Hungary (1993–94) Latvia (1993–94) Lithuania (1996) Mauritania (1993) Poland (1993–94)	Fiscal cost. Moral hazard. Value depends on servicing terms.
	Equity conversion of public deposits and claims.	Kenya (1986–89)	Fiscal cost. Moral hazard. Nontransparent.

Source: IMF staff.

one swap at market value adds no capital, but it will increase the risk-weighted capital-to-asset ratio, as it did in Mexico in 1995. However, a swap of nonperforming loans at book value would allow the reversal of recorded losses and provisions, raise income, and thus increase equity. The latter approach, of course, has a larger fiscal impact.

Experience suggests two major lessons with respect to bank recapitalization. First, in most cases private capital is preferable to government-provided funds. Where capital is being contributed by the public sector, the form of recapitalization will have a bearing on the fiscal position and the public sector debt profile. Second, if it is to contribute to the viability of the institution and provide owners with incentives for sound operations, the new capital must be genuine; the market value of the contributed asset must at least equal its valuation on the books of the recipient bank.

Cash and bonds paying market rates can be used to recapitalize a bank, while assets (even government bonds) with below-market returns may not sufficiently improve a bank's earnings capacity. In some countries, long-term nontradable government debt has been used to limit the addition of new liquid instruments to the securities market or to restrict a bank management's discretion regarding liquidity. Such assets, however, reduce banks' ability to manage maturity, interest rate, and liquidity risk.

Shrinking Liabilities

Some countries have arranged the transfer of liabilities from problem banks to sound or government-owned banks (e.g., Venezuela). This has the potential advantage of downsizing problem banks. To ensure the recipient banks are not decapitalized, matching assets, such as a transfer of government bonds, should be provided. Cost minimization and incentive compatibility suggest that some liabilities be written off. On equity grounds and to create incentives for market discipline, shareholders and subordinated debt holders should lose their investments first, followed by nondeposit creditors and large depositors. Small depositors might be protected fully on equity grounds, in order to mitigate any macroeconomic effects of a reduction in savings and intermediation consequent on confidence-impairing losses, to reduce the risk of runs, and because small depositors have little scope to exert market discipline.

Experience differs with regard to the extent to which losses have been imposed on depositors in the private sector. Many countries have augmented their systems of deposit insurance to enable depositors to recover more than the statutory amount of coverage. Finland, Japan, Sweden, and Turkey, for example, extended full coverage to depositors during recent crises or periods of financial distress. Other countries have proved willing, at least in certain episodes, to impose losses directly on depositors (Table 2). This can strengthen market discipline and reduce demands on the budget and on LOLR lending, provided it does not cause a generalized loss of confidence and bank runs.

High unanticipated inflation also has the effect of shrinking liabilities (and financial assets) in real terms. However, this lowers the quality of loans and credit evaluation by distorting enterprises' balance sheets. These distortions lead banks to overestimate the creditworthiness of their customers, underprovision for losses, and report artificially inflated profits. Negative real interest rates that usually accompany high inflation also discourage deposit growth and cause disintermediation.

Rehabilitating Assets

Failing to actively manage the nonperforming assets of all banks, as well as the remaining good assets of failed banks, increases the total cost of sys-

Table 2. Imposing Losses on Depositors in Selected Countries

	Scope ¹	Treatment of Depositors	Deposit Insurance
Argentina 1989–90	100	Time deposits at all banks above the equivalent of US\$100 were converted to bonds that initially traded at a 67 percent discount.	Deposit insurance was not introduced until April 1995.
Brazil 1994–96	0.4	Deposits above R\$20,000 held at (small) liquidated banks were lost. However, the largest problem banks were not liquidated, so their depositors did not lose.	The deposit insurance scheme, introduced in November 1995, retroactively raised coverage above the R\$5,000 limit for deposits in all banks closed since July 1994.
Chile 1982–84	70	Only 30 percent of domestic deposits were paid at banks that were liquidated.	Deposit insurance introduced in 1986.
Côte d'Ivoire 1991	n.a.	Ninety-five percent of depositors received reimbursement amounting to at least 85 percent of their deposit.	There is no system of deposit insurance.
Estonia 1992	47	Losses are estimated at between 25 percent and 75 percent of deposits at liquidated banks.	Deposit insurance legislation is being prepared.
Latvia 1995	40	Depositors are to be compensated only to the extent that assets are recovered. To date, little has been recovered.	Deposit insurance is under consideration.
Malaysia 1986–88	3.4	Varying schemes, including extended maturity (with interest forgone) and equity payments in lieu of cash.	There is no deposit insurance.
Thailand 1983–87	25	Deposits were repaid over ten years; estimated loss of real value about 50 percent.	There is no system of deposit insurance.

Sources: Baer and Klingebiel (1995); and IMF staff.

Note: n.a. denotes not available.

¹Percentage of banking system assets held by banks adopting the treatment listed in the table.

temic restructuring, creates an inequitable distribution of losses by rewarding defaulters, and impairs incentives for debt repayment in the future. Mass liquidation could result in asset-price deflation, with consequent negative macroeconomic effects. Banking system assets need to be actively managed to maximize returns and maintain asset values in the

economy. Sometimes liquidation is required, but loan or debtor restructuring may also be indicated. Table 3 shows how different countries have financed and handled bad assets during their bank-restructuring efforts.

Decentralized workout units (within or outside individual banks) can have the advantage of allowing banks to build their capacity to assess and manage problem loans. However, responsibility for managing problem assets in addition to operational restructuring can strain banks' managerial capacity. In the case of banks that have closed, bankruptcy focuses on liquidation of assets, and there is generally no administrative structure for loan workout. Further, asset liquidation by individual banks may duplicate administrative costs, and, if they all try to unload assets quickly, will depress market values excessively. Many countries have therefore opted for a centralized asset-management company (AMC) to handle problem loans, particularly those that are to be liquidated. Problem loans are exchanged for debt or equity of the AMC, or for government debt. The transfer price and capitalization of the AMC are critical to establishing appropriate incentives for recovery.¹³ It is also important that the necessary legal framework for recovery be in place; deficiencies in this area hobbled AMC performance in Tanzania, among others.

Improving Income

Stemming the flow of losses will be assisted by the financial restructuring instruments discussed above, but will also necessitate operational changes in the restructured banks. Reductions in staff and branches and downsizing of operations reduce expenditure. A capital injection will usually have a positive impact on the income statement, as will improved asset recovery (if the assets stay at the bank). Banks' income can be enhanced to the extent that they can find low-cost sources of funds, "squeeze" customers by increasing spreads, increase fee income, and reduce tax payments. Problem banks' cost of funds can be reduced and their liquidity increased by placing government deposits with them (as was done in Belarus, Kuwait, and Lithuania) or by lowering the central bank discount rate (as in Argentina and Kuwait). The former exposes the government to credit risk and may complicate monetary policy, while the latter could interfere with macroeconomic management unless a low central bank lending rate were justified in any event.

Some strategies have forgone balance sheet restructuring in favor of requiring banks to recapitalize out of increased retained earnings. If the need for recapitalization is large, savings from operational restructuring

¹³It should be noted that an asset swap at market value is not a recapitalization, and the problem of loading banks' balance sheets with nonmarketable, nonearning securities applies here as well as to capital injections.

Table 3. Handling Bad Assets in Selected Countries

	Type of Agency and Source of Funding	Performance, Other Relevant Information
Arrangements emphasizing decentralized loan workouts		
Finland	Central bank and government established three separate asset management companies.	Asset management was not closely monitored or given high priority until 1991.
Korea	Central bank designed the multi-year loan write-off plan. There was no public funding.	Simplified the scope and procedures for loan write-offs.
Hungary	Tightened bankruptcy legislation prompted insolvency of delinquent bank borrowers. Banks assigned lead role in creditor committees overseeing enterprise resolution.	Not successful because the courts were overburdened, resolution was stalled, and banks were not prepared to play this role.
Mexico	Government temporarily holds nonperforming loans in a Trust Fund, but loan workout remains banks' responsibility.	Experience is too recent to evaluate.
Moldova, Poland	Central bank directed banks to establish workout units. No public funding.	The workout was coordinated with enterprise restructuring in Poland, which helped make the program relatively successful.
Sweden	Ministry of Finance established two government-owned asset management companies (AMCs), capitalized with public funds. Other banks also established AMCs without government assistance.	Proceeds from asset sales are likely to cover the initial government outlays.
Arrangements with central agencies for loan workouts		
Chile	Central bank took over nonperforming loans.	Two classes of stockholders were established, "old" and "new." Old owners were obligated to use their dividends to repurchase loans from the central bank.
Côte d'Ivoire	Bank Liquidation Agency.	Forty-five percent of targeted recoveries achieved so far (1993-96).
Hungary	Hungarian Investment and Development Bank was designated to manage certain assets for the government.	A new bankruptcy law (since revised) initially led to an unmanageable wave of bankruptcies.
Kazakstan	(1) Government-guaranteed foreign exchange and trade-related	The loans to enterprises were coordinated with enterprise

Table 3 (concluded)

	Type of Agency and Source of Funding	Performance, Other Relevant Information
	assets assumed by the Ministry of Finance; (2) loans of 30 problematic enterprises by the Rehabilitation Bank; (3) agricultural loans by the Support Fund; and (4) the residual managed by banks.	restructuring supported by the World Bank.
Lithuania	In mid-1996, an AMC was formed from a failed bank, capitalized by converting some government deposits to equity and by government injections of cash and bonds.	Transfer of loans from two state-owned banks in exchange for long-term government bonds is planned for late 1996.
Philippines	Asset Privatization Trust was created for assets of two state banks.	Government assumed corresponding amount of bank liabilities and regarded the outcome as satisfactory.
Spain	Bank liquidation and rehabilitation were performed by the Deposit Guarantee Fund.	The Deposit Guarantee Fund was jointly funded by the central bank and the banks.
Tanzania	Nonperforming assets were transferred from two state banks to a newly created Loans and Advances Realization Trust in exchange for government bonds.	Recovery has not been significant, partly because the legal framework was initially not supportive of receivership or liquidation.

Source: IMF staff.

may not be sufficient. In fact, recapitalization through higher bank income requires regulatory forbearance as well as guarantees that keep depositors from withdrawing their funds from the undercapitalized banks. These guarantees represent a contingent liability that has usually not been valued or budgeted transparently by either the banks or the government. A squeeze on banks' customers through controls on interest rates—both deposit and lending rates—and special monopoly privileges for banks can allow banks to widen interest rate spreads, lowering their cost of funds, and raising interest income. Such actions are costly to bank customers, distort saving and investment behavior, and reduce incentives for banks to control their internal operating costs.

Restructuring measures will change bank management and the market configuration of the system. New, profit-conscious managers may take advantage of any resulting market power to widen spreads and raise fees, subject to the interest elasticities of the supply of deposits and the demand

for loans. Banks' ability to increase spreads by reducing deposit rates is limited when depositors have access to alternative liquid instruments (at home or abroad) and demand a premium for placing their funds in risky domestic banks. Banks may have more opportunity, on the one hand, to increase their lending rates because many borrowers do not have ready access to credit from other banks or nonbank sources. High interest rates, on the other hand, may deter the most creditworthy borrowers or drive them to other sources of funds (e.g., foreign borrowing), leaving domestic banks with only the riskiest borrowers.

Bank income may also be improved by reducing taxes. The implicit tax of reserve requirements can be reduced (as was done, for example, in Argentina, Hungary, Spain, and Venezuela), with consequent positive effects on banks' posttax income. In addition, restructuring the banking system provides an opportunity to reassess the taxation of banks and to institute a rational and efficient system. In particular, where tax rates for banks exceed those for other businesses, a more neutral approach would be desirable; this should include permitting the tax-deductibility of loan-loss provisions, which are legitimate business expenses for a bank (see Chapter 4).¹⁴

Macroeconomic Impact and Policy Response

The foregoing discussion of financial restructuring strategies and instruments makes clear that systemic bank restructuring usually entails significant government involvement. This section reviews why such strategies are also likely to have substantial macroeconomic implications that will require a policy response.

Macroeconomic Impact

The macroeconomic impact of bank restructuring will fall in three areas: debt sustainability, aggregate demand, and aggregate supply.

Debt Sustainability

Cash-based government assistance to banks will have standard macroeconomic implications,¹⁵ but most government assistance involves the issuance of government debt, either in exchange or to compensate for

¹⁴At the same time, however, ad hoc changes in the tax system designed to provide special assistance to banks as a potential "second-best" solution should be avoided; these would be costly and nontransparent and would divert the tax system from its function of raising revenue efficiently and predictably.

¹⁵For a discussion of the macroeconomic implications of government expenditure and financing, see IMF (1995b).

nonperforming loans. As for any other debt instrument, the cost to the issuer is the present value of the associated cash flow, which has to be met through future income.¹⁶ Thus the sustainability of government debt will, in the absence of countervailing measures, worsen.¹⁷

It can be argued, however, that government indebtedness does not change following such a financial restructuring because (1) implicit government liabilities (e.g., the negative net worth of public banks) are merely made explicit; and (2) the growth of explicit debt (interest on government securities) is equal to the growth of the implicit debt (capitalized interest on bad loans).¹⁸ While the first point does have merit when governments entirely own insolvent banks, it does not imply that there are no implications for the fiscal stance. Not only are there other important aggregate demand effects from the debt issuance (see below), but also the implicit debt should have been taken into account in assessing sustainability before the financial restructuring. The second point is unlikely to hold because insolvent banks operate under perverse incentives (e.g., shareholders' equity is no longer at stake), leading them to lose money faster than the growth of explicit debt. Delaying restructuring thus usually increases costs and eventually requires a stronger response.

Aggregate Demand Impact

Aggregate demand for goods and services will be increased—relative to what would happen without assistance—by debt-based bank assistance to the extent that private sector wealth and incomes rise and the money supply expands. These effects will depend on the response of the banking system and the public to the financial restructuring. There are various channels through which demand can be affected, but it is important first to consider the counterfactual.

Counterfactual

In the medium to longer term, the consequences of not financially restructuring a weak banking system are fairly clear—aggregate demand and output will weaken. If banks cannot earn their way out of their solvency problems, they will eventually become insolvent and illiquid. As the public's confidence in the banking system declines, its demand for

¹⁶A potentially important component of future income is the recovery value of bank assets obtained by the government, or public restructuring agency, during bank restructuring. For example, Sweden (in 1991), recovered substantial income from such bank assets, which thereby greatly reduced the eventual cost of government assistance to the banks. Such substantial cost recovery is, however, the exception rather than the norm.

¹⁷See Appendix I for a more formal description of the associated debt dynamics.

¹⁸See Lane (1996) for an analysis of this position.

deposits will fall. Shifts of deposits into currency or other financial instruments, including foreign assets, will reduce the availability of credit and contribute to demonetization, disintermediation, and foreign exchange reserve loss (or pressure on the exchange rate, or both). Banks earning their way out of their solvency problem will do so largely by charging higher spreads. These impose costs on borrowers and lenders, lead to disintermediation, and tend to lower investment and growth. Successful restructuring that not only restores banks' solvency, but also improves their operations to ensure that solvency is maintained, will prevent, or at least moderate, these repercussions.

Examining how banks would have behaved without financial restructuring sets the basis for the question of what impact systemic restructuring is likely to have on aggregate demand. There are five main channels through which debt-based financial restructuring can affect aggregate demand: interest rate spreads; actual, or perceived, private wealth; future recapitalization; the money supply; and the external sector.¹⁹

Interest Spreads

The behavior of interest spreads has important implications for domestic demand. The fall of interest spreads as a result of financial restructuring is equivalent to removing a tax on the bank's depositors and borrowers and thus boosts demand. Whether spreads fall or not depends on the market structure and price-setting behavior of the banking system. Interest spreads will tend to be linked to the extent of nonperforming loans if banks set interest rates by markup rules rather than maximizing profits. Banks will have more leeway to charge higher spreads the greater their market power. Spreads will also fall following a successful operational restructuring of banks, as efficiency rises.

The available empirical evidence suggests that spreads are likely to be lowered significantly following successful financial restructuring. For example, Begg (1996) attributes 4.4 percentage points of the Czech banking system spread of 6.1 percentage points in 1994 to provisioning—a cost estimated at 3.3 percent of GDP. Further, in the absence of successful financial restructuring, banks would likely attempt to increase their net worth by widening spreads (see Chapter 3).²⁰

¹⁹Bank restructuring often takes place in the context of substantial structural reforms of the financial system and macroeconomic stabilization efforts. The consideration of the impact of bank assistance operations on macroeconomic variables in this section abstracts from the effects of these other factors.

²⁰Citing evidence from Eastern Europe, Thorne (1993, p. 998), for example, states that "it is common for these banks . . . [with a large proportion of nonperforming debt] . . . to increase the average bank lending rate and bank average spread." For models linking nonperforming loans and interest spreads, see Montes-Negret and Papi (1996) and Buch (1995).

Wealth Effects

Debt-based government financial restructuring will transfer net assets from the government to the recipients of the assistance (some, or all, of the bank's stakeholders). Recipients' perceived wealth will change as a result, provided first, that lower government wealth (or higher government debt) is not fully internalized (i.e., offset by higher saving) by the private sector and second, that the financial restructuring is not fully anticipated.²¹

Theoretical and empirical evidence suggests that the first requirement is likely to apply, especially for less-developed economies.²² However, the second requirement is met in practice to varying degrees. For short-term depositors, provided that they always had the chance to remove their deposits, the fact that they did not do so implies they almost fully anticipated government intervention or did not perceive any problems. For longer-term stakeholders in the banks—shareholders, managers, and longer-term creditors—the extent of government assistance is more uncertain, and thus less anticipated, especially when any guarantee is implicit. This effect will be lower in the financial restructuring of state-owned banks with explicit deposit guarantees and higher for small, private banks with no deposit guarantee; but in neither case is the assistance likely to be fully anticipated. Debtors' perceived wealth will rise if repayment becomes less likely as a result of government financial restructuring. In many cases, government assistance has led to repayment being less enforced as government agencies and restructured banks have often had little incentive and ability to recover loans (Sheng, 1991). However, as discussed earlier, good asset recovery can, and should, be a vital component of bank restructuring.

Recurrent Government Assistance

The discussion so far has treated financial restructuring as a one-time operation. But financial restructuring, and the problems it is designed to alleviate, may well recur. This is especially likely if it is not accompanied by measures to address the source of bank weakness, such as poor bank management, forced subsidized credit to loss-making public enterprises, and macroeconomic instability. Indeed, if no accompanying measures are taken, financial restructuring could be viewed as merely rewarding, and thus exacerbating, inappropriate lending behavior, leading to future reemergence of the stock problem (see Chapter 3). In the short term,

²¹To the extent that the level of assistance is less than anticipated, the wealth effect will be negative.

²²More specifically, the assumption of strict Ricardian neutrality is unlikely to hold. See Hayashi (1982) and Haque and Montiel (1987).

however, aggregate demand will be boosted by recurrent government assistance as the increase in a bank's ability to attract deposits and make loans based on its improved capital position allows for a continuation of lax lending policies.

Monetary Impact

A restructuring of banks will tend to increase broad money, as it is likely to forestall or reverse a shift away from deposits. Indeed, the demand for deposits may increase as recipient banks are seen as safer; in most of the countries studied, the ratio of M2 to GDP increased in countries that undertook bank restructuring (see Chapter 3). A more direct monetary impact is likely to emerge when financial restructuring increases the central bank's net domestic assets. This will occur when restructuring is financed by recourse to the central bank or to external borrowing. Unless any consequent increase in bank reserves is held as excess reserves or otherwise sterilized, broad money will expand.

Even if outside money is not injected into the system, for example, if payments on government debt are financed by borrowing from domestic banks, the change in the distribution of reserves within the system may result in an increase in the reserve money multiplier. When a banking system is weak, the greater volatility of deposits and increased riskiness of lending often prompts sound banks to hold high levels of precautionary excess reserves. Conversely, weak banks tend to minimize reserves, owing to the strain on their liquidity and their preference for high-return assets. If financial restructuring draws on resources from within the banking system, the total level of reserves may remain unchanged but the amount effectively sterilized as excess reserve holdings diminishes; a lower reserve ratio results in an increase in the money multiplier. Changes in the patterns of intermediation and in the demand for domestic money as the banking system weakens and is then restructured will also result in shifts in velocity (possibly reducing the demand impact of higher money supply during restructuring).

External Sector Impact

The restructuring of banks can exert an impact on the balance of payments, foreign exchange reserves, or the exchange rate. Under a fixed exchange rate with full international capital mobility, any flows to the banking system from the central bank that result in an increase in the latter's net domestic assets (NDA) will tend to reduce foreign exchange reserves (unless compensated by an increase in the demand for money). With less than full capital mobility and a fixed exchange rate, however, central bank financial assistance is likely to lead to a combination of foreign reserve loss and the aggregate demand effects discussed above. With

a flexible exchange rate, such assistance will likely feed more directly into a depreciation of the currency.²³

As restructuring of the banking system proceeds, however, the financial and technical ability of the banking system to intermediate international capital flows will improve. Increased financial stability and domestic and external confidence in the banking system may reduce disintermediation and capital flight and help reestablish international lines of credit and correspondent relationships. At some point, restructuring will likely lead to remonetization and an increase in the demand for money, which should itself positively affect capital flows and the balance of payments.

Aggregate Supply Impact

Bank restructuring will also have aggregate supply effects. A sound banking system contributes to economic activity by mobilizing financial resources for investment, providing expertise in project screening and corporate governance, and furnishing transaction services and payment systems. As restructured banks' ability to produce these services improves, the increase in resources and services available to support nonfinancial enterprises' productive activities will raise aggregate supply.

The increase in intermediation has two dimensions. Unsound banks will tend to have few resources available to lend and to misallocate credit. A comprehensive restructuring program will redress both of these deficiencies. Recapitalization, efforts to recover nonperforming loans and restore depositor confidence, and a reduction in interest spreads (discussed above) will increase the quantity of financial intermediation by raising the amount of resources flowing into the banking system. Improvements in bank management and operations, particularly in the area of loan assessment, will improve the quality of investments, and narrower interest spreads will reduce adverse selection. Both the increased quantity and quality of intermediation contribute to a more efficient use of financial resources and an enhanced supply response from the productive sectors.

Policy Response

Bank restructuring may require a response in one or several areas, including fiscal, monetary, external, or institutional.

²³To the extent that such flows are sterilized so that there is no overall increase in the NDA of the central bank, external effects will be mitigated.

Fiscal Response

Choosing the appropriate fiscal response to bank restructuring requires careful consideration of many factors and should feed into the design of the restructuring strategy.

Fiscal Response to a Given Restructuring Strategy

Unless the fiscal stance is tightened in response to debt-based government assistance, the ratio of public debt to GDP will grow faster, or fall more slowly, over the medium term than was envisaged before the bank assistance. Thus, more prudent responses should be considered, such as reestablishing the previous rate of change, or the level, of the debt-to-GDP ratio.²⁴

The appropriate fiscal response in a specific case will depend on a number of factors. For countries with very low initial debt stocks and strong primary balances,²⁵ debt sustainability will not be a constraint; however, for those with a high initial debt stock and a weak primary balance, debt sustainability will be an issue. Further borrowing in the latter case will compound the sustainability problem and require a more immediate, and substantial, fiscal adjustment. The problems will be exacerbated when government assistance is expected to recur (e.g., if the assistance is not accompanied by a suitable operational restructuring program) as markets anticipate a permanent, rather than a one-time, financing need.

While problems of debt sustainability may in some cases be immediately binding, there can be scope for different primary balance paths. The short-term evolution of the fiscal stance should reflect the impact of bank restructuring on aggregate demand, which, as discussed above, can be substantial. To determine the appropriate fiscal response, all types of assistance should be quantified and assessed in the context of a comprehensive medium-term macroeconomic framework.

Choosing the Fiscal Response and Restructuring Strategy Together

The above macroeconomic implications should feed interactively into the formulation of the restructuring strategy. If the amount of fiscal consolidation required to attain a minimum level of macroeconomic stability is unacceptable or impractical, other options need to be examined. First, the financing of government financial assistance operations could be adjusted to allow a more gradual fiscal adjustment while ensuring macroeconomic stability, for example, through concessionary external financing.

²⁴Appendix I presents the underlying algebra and a more detailed explanation of alternative fiscal responses.

²⁵"Strong" in the sense that the actual primary balance is significantly greater than that required to keep the debt-to-GDP ratio constant (see Appendix I).

Second, the public sector's share of total restructuring costs could be reduced, for example, by imposing greater costs on depositors. Third, the scope of the restructuring strategy could be narrowed, for example, by liquidating rather than recapitalizing some banks. This process should be completed to arrive at a consistent restructuring strategy *before* any announcement is made. Such a prior examination would also clarify the economic implications of the politically appealing decision to provide government assistance, in particular, that it will be paid for by future administrations and generations. Box 3 summarizes some key interrelations between the fiscal response and restructuring strategies.

Monetary Response

Unsound banking systems complicate the conduct of monetary policy. For example, interbank markets may not work properly and recovering banks, to meet capital ratios, may be constrained from lending. The exchange rate may be the only functioning transmission channel and could become hypersensitive to even minor adjustments in the monetary stance. Money multipliers, the currency-to-deposit ratio, money demand functions, and the ratio of broad money to GDP, become unstable. Monetary series, especially credit data, may need to be recalibrated, for example, for loans misclassified as performing. Moreover, the sectoral impact of monetary policy may shift as transmission channels become distorted. The authorities may also need to take account of the effects of the asset-price deflation that often accompanies the aftermath of banking system problems. As noted in Chapter 3, the resolution of banking system problems may take several years, during which the banking system will be returning only gradually to a state of health.²⁶

Central banks increasingly have begun to state their primary monetary policy goals in terms of a single objective, such as attaining price stability or maintaining a particular level of the exchange rate, while preserving the safety and soundness of the banking and financial system is usually seen as a secondary objective that is consistent with the primary objective over time. When banking systems are unsound, the pursuit of primary objectives may require policies incompatible with those needed to support systemic restructuring, and difficult trade-offs must be faced. For example, when systemic banking problems emerge, the sticking point is often the exchange rate, which has come under strong downward pressure (e.g., the Nordic countries and Venezuela), entailing the need for sharp and sustained interest rate increases to support it. Such increases usually exacer-

²⁶Even after financial health has returned, some of the behavioral changes that were induced by a period of banking unsoundness may well persist.

Box 3. Lessons from Experience: Fiscal Aspects

Minimizing public sector costs. This helps ensure macroeconomic stability, an equitable distribution of the costs (provided the government was not responsible for the problems) and the right incentives. While the public sector has borne a large share of the costs of systemic bank restructuring in many countries, Latvia minimized the public sector's share by liquidating many of the affected banks and providing compensation only to the extent bank assets are recovered. Sweden minimized costs by recovering more than half of initial outlays through successful asset management, privatization, and improved profitability of all banks.

Strengthening the fiscal stance while assisting banks. Failure to do so will tend to exacerbate problems of inflation, external imbalance, confidence, and debt sustainability. Despite large assistance to banks and a sharp recession, the Philippines, for example, managed to cut the consolidated public sector deficit from 9 percent of GNP in 1983 to 4.8 percent of GNP in 1986.

Transparently recording public sector costs. Governments have used numerous methods to assist banks, many of which were not transparently recorded in the budget. Mauritania, however, explicitly recorded government assistance to banks, increasing the fiscal deficit by 7.4 percent of GDP in 1993. This transparent recording, in addition to improving confidence and governance, contributed to the recognition of the need to take offsetting measures.

Linking government assistance to bank and enterprise restructuring. Assisting banks before their restructuring wastes public resources and provides the wrong incentives. Because banks' problems are often intimately linked to public enterprises, importance should also be attached to restructuring these enterprises. Poland succeeded in this regard by explicitly tying government assistance to a comprehensive program to restructure public banks and enterprises.

Source: Chapter 3.

bate banking sector problems and contribute further to exchange rate pressure. Sharp depreciation of the exchange rate is likely to make inflation objectives less attainable and may also add to banking sector problems (e.g., Côte d'Ivoire). In these circumstances, consideration may need to be given to moderating the timetable for achieving primary objectives.

The asymmetries in the effects of monetary policy—in particular, the limited scope to tighten liquidity and credit conditions and raise interest rates—when the banking system is under distress may also persist during the systemic restructuring phase. Other things being equal, a looser monetary policy compensated by a tighter fiscal policy would be conducive to

bank restructuring. In addition to playing a larger restraining role, fiscal policy may have to be used more actively to respond to shocks than when banking systems function normally. This would particularly be the case where macroeconomic policy suddenly needs to be tightened; for example, when inflation unexpectedly begins to rise. Thus, close coordination of monetary and fiscal policy becomes even more essential than when banks are sound.

The operating framework will inevitably have to be modified in response to distortions in key economic relationships and the information they impart. This is particularly likely for rules-based systems centered on intermediate monetary aggregate targets. The needed modification will depend on the extent of changes in underlying quantitative relationships, which the central bank will have to constantly monitor and assess. Experience shows, however, that the information content of monetary and credit aggregates becomes increasingly distorted and unreliable during severe bank distress, pushing central banks into judgment-based frameworks in which the authorities seek to "look at everything" in making policy adjustments. In these circumstances, it may thus be necessary to supplement the interpretation of monetary and credit aggregates with greater focus on movements in the exchange rate and interest rates.

The effectiveness of indirect instruments of monetary policy (such as open market operations, short-term refinance facilities, and reserve requirements) may be reduced until the restructuring process is well under way. This will be the case, in particular, if the interbank and short-term money markets are slow to return to normality and remain segmented or nonoperational. Increased reliance on direct instruments, such as credit ceilings and interest rate controls, has been advocated as a remedy. This may be appropriate for a country that is in the process of shifting from direct to indirect instruments, but for others, direct instruments are no more likely to be effective than indirect ones. Moreover, direct instruments entail costs and distortions that may delay the return of the banking system to normality (Alexander, Baliño, and Enoch, 1995).

Another approach is to modify or supplement particular indirect instruments. For example, there may be a need for greater reliance on automatic central bank facilities to provide short-term liquidity previously provided by the interbank market. Greater attention may therefore have to be given to the design and use of Lombard facilities, and other forms of short-term refinance available to remaining viable commercial banks. Introduction of collateralized operations (repurchase agreements) may be a way of resuscitating interbank borrowing and lending activity when not all banks are seen as creditworthy.

External Sector Responses

Pressure on foreign reserves or the exchange rate is likely to increase strongly during systemic bank distress or crises. The interaction between pressures on the exchange rate or foreign reserves and banking crises may work in both directions. A run against the financial intermediaries generates a sudden demand for foreign exchange reserves that may force a depreciation of the domestic currency. At the same time, an expected depreciation may trigger runs on banks (and capital flight), helping fulfill the depreciation expectations. The depreciation itself may exacerbate the insolvency problem for those banks and their customers that have substantial uncovered foreign exchange exposure. The mutual interaction between financial fragility and sharp exchange rate declines can amplify an initial shock. Further, if there is a deposit insurance system or if banks are backed by the government, runs against financial intermediaries may trigger a currency crisis by imposing a heavy burden on the fiscal sector, thereby undermining confidence.

There is no clear policy prescription that would apply for all countries. In general, however, a clear, credible policy response to restructure the banking system will reduce external pressures on the banking system and pave the way for normalization of capital flows in the balance of payments. Such a policy response should include a comprehensive restructuring strategy in tandem with consistent and credible macroeconomic policies. The fiscal dimension of the former will be crucial to the credibility of the latter.

Institutional Responsibilities and Crisis Management

Successful response to systemic bank distress demands not only an appropriate fiscal and monetary policy, but also a credible strategy to manage an actual or potential domestic financial crisis. This will require a clear definition of institutional responsibilities.

Solvency support for problem banks, just like subsidies to other sectors of the economy, should be provided by the budget. As shown in Chapter 3, this principle is generally adhered to in industrial countries but seldom in developing countries, where a large share of financing typically is provided by the central bank or other public entities. Solvency support in the form of loans from the central bank is analogous to providing direct monetary financing of the fiscal position. Transferring the solvency problem to the central bank through long-term central bank lending or asset transfers can also complicate monetary management and contribute to inflation, since central banks typically have minimal capital and a small revenue base, and tend to monetize their losses.

Central bank support also makes it a stakeholder in the banks being rehabilitated, creating potential conflicts with its responsibilities for

supervision, monetary management, and LOLR lending. Central banks are seldom equipped to handle banks' governance changes, manage impaired assets, or liquidate banks. The empirical work in Chapter 3 broadly confirms that the degree of success of a restructuring program tends to be greater without the long-term financial involvement of the central bank. Nonetheless, the central bank has an important role to play in many other aspects of systemic bank restructuring (see Appendix II).

In some cases of bank restructuring, the authorities will first need to deal with a liquidity crisis. A systemic run on bank deposits—triggered by domestic or external events—combined with an exchange rate crisis or a sudden cutoff of external lines of credit to banks seriously reduces the authorities' policy choices and time for planning, as restoration of confidence—and political cover—become the overwhelming priorities. The challenge in responding to such a crisis is to take credible measures that are consistent with any forthcoming restructuring strategy and do not excessively distort incentives. To support monetary and external policies, contingent foreign lines of credit should also be secured. An IMF-supported program is potentially important in this regard, as it would also foster access to foreign credit and boost confidence. Temporary government guarantees might be considered (possibly excluding depositors and creditors of nonviable banks), but should be combined with a comprehensive and sustainable restructuring plan. In some cases, a bank holiday has been declared to buy time to formulate a policy response; the danger in this approach is that if the policies announced before the banks reopen are insufficiently credible, confidence in the entire system will have been shaken.

Because banks must remain liquid to keep operating,²⁷ the central bank, as the LOLR, typically provides liquidity support until a restructuring plan has been adopted, and frequently during the restructuring as well. A major danger is that temporary LOLR support often expands rapidly in size and the central bank can be drawn into providing liquidity support to what turn out to be insolvent banks.²⁸ Responsibility for this support should be shifted to the government budget once the recipient bank's insolvency becomes apparent.

Transparency in Fiscal Recording

As the preceding sections discuss, government involvement in the financial restructuring of banks can have substantial macroeconomic,

²⁷Banks often can stay liquid after they become insolvent, sometimes for an extensive period, because they can use new deposits to cover operational losses and deposit withdrawals.

²⁸LOLR lending should be fully collateralized to afford some protection to the central bank.

especially fiscal, implications. To facilitate effective policy formulation and good governance, these implications should be recorded transparently in the fiscal accounts and consistently across countries. This section reviews the problems in current practice and puts forward a solution.

Current Practice and Issues

Current guidelines for classifying government bank assistance are founded on the use of the cash-based balance of the general government as described in the IMF's *A Manual on Government Financial Statistics (GFS)* (see IMF, 1986). Under this system, the fiscal balance is affected by financial assistance that involves either cash transfers from the general government (e.g., subsidies to banks), or lending minus repayments (e.g., loans or exchange of cash or bonds for bank assets), by the general government to financial institutions. This standard (*GFS*-based) system, however, inadequately captures in the fiscal balance some of the most common and important bank assistance operations.²⁹ Consequently, current Fund practices have often differed from *GFS* guidelines. The varieties of strategies and their divergent classification for a sample of countries are presented in Table 4.

The shortcomings in current guidelines result from the focus on the general government, the exclusion of noncash operations, and divergences between the timing of cash outlays and the economic impact of resolution strategies.

Quasi-fiscal operations are often used by governments that do not want to assist financial institutions directly through the general government budget. When banking problems initially appear, the central bank usually extends credit to troubled banks. Assistance can also be provided by other public institutions and agencies (e.g., deposit insurance funds); indeed, certain bank assistance operations can only be carried out by public financial institutions, most notably the extension of directed or subsidized credit, or both.

Yet while the macroeconomic impact of such operations is largely independent of which branch of the public sector implements them, only those operations carried out by the general government affect the present standard *GFS* measure of the fiscal balance. The types of quasi-fiscal operations that are common in systemic bank restructuring have been either excluded entirely from government budgets or included indirectly through the incorporation of the net operating income of the central bank (or exceptionally, other public banks).

²⁹While *GFS* excludes such operations from determining the fiscal balance, it provides for their recording as memorandum items.

Table 4. Budgetary Classification of Major Methods of Government Assistance in Resolving Banking Problems in Selected Countries

Method	Country and Date	Budgetary Classification
Direct methods		
1. Recapitalization		
A. Cash purchase of equity	1. Egypt (1991)	1. Expenditure, capital.
	2. Finland (1991-94)	2. Bank of Finland purchases not recorded.
	3. Mauritania (1993)	3. Expenditure, "restructuring and net lending."
	4. Philippines (1986)	4. Expenditure, "equity and net lending."
	5. Sweden (1991)	5. Expenditure, "bank restructuring."
B. Bond transfer Exchange for bad loans	1. Ghana (1990)	Principal excluded from expenditure, interest included.
	2. Hungary (1992-93)	
	3. Lao People's Dem. Rep. (1994)	
	4. Sri Lanka (1993)	
Unrequited	1. Chile (1984)	1. Neither interest nor principal recorded in expenditure.
	2. Ghana (1990)	2. Principal excluded from expenditure, interest included.
	3. Hungary (1993-94)	3. Principal excluded from expenditure, interest included.
	4. Latvia (1993-94)	4. Principal excluded from expenditure, interest included.
	5. Poland (1993-94)	5. Principal excluded from expenditure, interest included.
	6. Mauritania (1993)	6. Both interest and principal included in expenditure.
C. Assumption of (net) liabilities	1. Argentina (1994-95)	1. Loan amortization operations excluded from expenditure.
	2. Chile (1983)	2. Not included in expenditure.
	3. Finland (1991)	3. Takeover of bank not recorded in budget.
	4. Mauritania (1986)	4. All cash and debt components included in expenditure, "Restructuring and net lending."
	5. Philippines (1986)	Write-off of treasury claims (uncashed checks) recorded as negative revenue.
		5. Only interest on debt recorded in expenditure.
2. Loans		
Standard loan	1. Argentina (1994-95)	1. Quasi-fiscal lending by central bank included in expenditure.
	2. Chile (1982-83)	2. Excluded from expenditure.
	3. Latvia (1993)	3. Excluded from expenditure.
	4. Mauritania (1993)	

Table 4 (concluded)

Method	Country and Date	Budgetary Classification
	5. Philippines (1986)	4. Bank debt to central bank assumed by government in expenditure.
	6. Azerbaijan (1995)	5. Operating position of central bank included in fiscal accounts.
		6. Lending minus repayments.
Placement of deposits	1. Lithuania (1995)	1. Excluded from expenditure.
Indirect methods		
Assumption of enterprise debt	1. Azerbaijan (1995)	1. Lending minus repayments.
	2. Moldova (1994)	2. Lending minus repayments.
Equity conversion of nonbudget public deposits/claims	1. Kenya (1986–89)	1. Excluded from expenditure.
Loans or transfers to enterprises to allow servicing/repayment of bank debt	1. Hungary (1987)	1. Excluded from expenditure.
	2. Philippines (1986)	2. Expenditure, lending, or subsidy expenditure.

Source: IMF staff.

Noncash operations: several restructuring operations with similar aggregate demand effects and public policy motivations have been treated differently in the fiscal accounts due to the cash/noncash criterion. For example, recapitalization via the unrequited issuance of public debt to troubled banks (one of the most common forms of bank assistance) only affects the standard fiscal balance through interest payments, not the principal, even if the bank immediately sells the debt. If the government had floated the debt and transferred the proceeds, this would have been classified as expenditure. Current practice for the countries surveyed tends to follow this cash/noncash criterion, although Mauritania, by fully recording all noncash bank assistance operations in the budget, is an exception. Thus, Egypt's fiscal balance deteriorated by 6 percent of GDP in 1991 as the bank assistance involved a cash injection, whereas that of Hungary was unaffected by the issuance to banks of negotiable public debt equivalent to 9 percent of GDP between 1993 and 1994.

Similarly, other bank assistance operations may not be recorded at all under current practice owing to their similarity with portfolio decisions. Two examples are the shifting of government deposits from sound to troubled banks (e.g., Lithuania, 1995) and the conversion of a bank's obligation

to the government into equity (or a longer-term obligation). Both, however, may reflect public policy and not the objective of maximizing returns from the government's portfolio or facilitating treasury operations.³⁰

Timing of impact: when divergences arise between the time of the economic impact and the cash outlay of bank assistance, the cash-based standard fiscal balance does not fully reflect the government's impact on the economy. Such divergences could arise in two situations relating to systemic bank restructuring:

- Banking problems may result from years of prior policy actions, such as directed credit, and only later, when the economic effects have occurred, is there any impact recorded in the budget. Any resulting recapitalization would then represent recognition of accumulated past quasi-fiscal operations. The government's impact on the economy would thus have been understated previously and overstated when any assistance occurs (if the assistance affected the measured fiscal balance).
- Some bank assistance operations do not involve cash outlays when implemented but may lead to future outlays. Such future outlays may be fully known because their extent and the government's obligation are certain (e.g., assumption of a bank's liabilities). Alternatively, they may be contingent, because either the eventual quantity is unknown (e.g., deposit guarantees) or the government's obligation is not specified (e.g., an insolvent bank that would likely not be allowed to fail). Under current practice, these operations would only affect the fiscal balance when, or if, any cash payments by the general government were made; whereas public sector net worth and the government's role in the economy would be affected when the operation was implemented.

An Augmented Measure of the Fiscal Balance

The fundamental aim of any definition of the fiscal balance is to provide a transparent and comprehensive measure of the impact of fiscal policy that is reasonably comparable across countries. In this respect, there is a need to strengthen current practices in accounting for the fiscal impact of bank assistance operations. Rather than undertaking a piecemeal revision of current, *GFS*-based, practices, which have important merits from the perspective of monetary consistency and established understanding and usage, it is recommended that they be complemented with an "augmented balance" concept. The augmented balance would explicitly incor-

³⁰*GFS* would consider such operations as deficit-determining items.

porate the major quantifiable fiscal costs of bank assistance operations that are not already included in current definitions of the overall balance. These costs would be included in a separate category of the augmented balance, entitled "bank assistance measures," which would be added to the standard overall balance.³¹ The augmented balance would not replace the overall balance but would be used alongside this, and other, measures of the fiscal stance for countries where bank assistance operations are important. Presentation of the augmented balance would, however, provide a transparent basis for considering the aggregate demand effects of particular restructuring instruments and assessing the need for offsetting action. Table 5 summarizes the suggested treatment of some common bank assistance operations within this augmented balance.³²

An alternative approach would be to extend the current *GFS*-based measure of the fiscal balance to include some of the major costs of bank assistance operations in the categories in which they best fit. For example, operations involving the government obtaining a claim of similar economic value might be classified under lending minus repayments; unrequited payments might be included under current or capital transfers, as appropriate. This is the approach that has been in effect adopted in some of the country presentations (e.g., Mauritania). The augmented balance has, however, the advantages of not relying on an ad hoc system of classification, and, when bank assistance costs are large and lumpy, providing both a standard and augmented balance facilitates analysis of fiscal stance developments over time. The augmented balance approach also has the important advantage of being supportive of the current proposals for revising *GFS*, which provides for the measurement of many quasi-fiscal operations, advocates an accrual recording basis, and allows for the supplementary recording of contingent items.³³ Specifically, creating the augmented balance would entail the following.

Quasi-fiscal operations relating to bank assistance should be included in the augmented balance. One of the most important such operations is lending by the central bank, or other public financial institutions, to support a troubled bank.³⁴ Ideally, some estimate of the implicit subsidy com-

³¹To preserve continuity, existing bank-restructuring programs could include under "bank assistance measures" only those costs not already encompassed within the overall balance.

³²The augmented balance concept could, in principle, be extended to capture any quasi-fiscal activities not recorded in the *GFS*-based balance in addition to those related to bank assistance. A numerical example of the relationship between the augmented and standard fiscal balance for a stylized bank assistance operation is presented in Appendix III.

³³See IMF (1995b) and Efford (1996).

³⁴Determining if a bank is troubled is difficult and should follow the distinction between LOLR lending and solvency support by the central bank discussed above. Certainly, any protracted central bank support should be classified as a fiscal operation.

**Table 5. Recommended Classification of Some Common
Bank Assistance Operations**

Operation	Current Practice	Recommended Classification
Quasi-fiscal operations		
Lending to, or equity purchase in, troubled banks by the central bank or public financial institutions, or non-standard government loans, such as placement of deposits.	Only affects the overall fiscal balance through either the incorporation of net income in the budget, or budgetary profit transfers (if the marginal rate of transfer is positive), of the public financial institution.	Loans minus repayments, equity purchase minus dividends/sale proceeds, and deposit transfers should be included in the augmented balance. ¹
Noncash operations		
Recapitalization through issuance of government debt both unrequited and in return for nonperforming assets.	Interest included in expenditure, but the principal component does not usually affect the overall balance.	Principal component should be recorded in the augmented balance.
Divergent timing of cash and economic impacts		
Assumption by the government, or other public financial institutions, of the bank's, or bad debtor's, liabilities. ²	Excluded from the budget when assumed.	The full amount of liabilities should be recorded in the augmented balance when assumed.
Contingent liabilities, for example, insolvency of a public bank or Deposit Insurance Agency (DIA).	Not recorded.	Report estimate of the potential cost to the government as a memorandum item, for example, the estimated insolvency of a bank or the DIA.

¹With a consequent offset in central bank transfers to the budget.

²Provided liabilities are not assumed as part of government takeover of a bank.

ponent should be recorded as fiscal expenditure, but in practice this is not generally possible. A more practical approach is to classify such lending for policy purposes as a determinant of the augmented balance.³⁵ When quasi-fiscal operations of public financial institutions cannot be separately identified, their operating position can be included in the augmented balance.

³⁵For more details on treating quasi-fiscal operations see Mackenzie and Stella (1996).

The cost of other quasi-fiscal operations, such as purchasing equity in a troubled bank, should also be recorded in the augmented balance.³⁶

Noncash bank assistance operations not included in the standard fiscal balance should be included in the augmented balance if implemented for public policy. Some such strategies will have more substantial and immediate implications for demand and the fiscal stance (e.g., if the debt issue is negotiable) and others less, but this argues for careful interpretation of the augmented balance rather than not recording the operations. Thus, the principal component of bank recapitalization via issuing public debt should affect the augmented balance regardless of whether assets are received in return or the debt is negotiable. The full amount of deposits shifted to troubled banks should be included in the augmented balance if the motivation is to assist the bank.³⁷ In the absence of clear information on the motivation, the deposit shift should be included if the depositor agreed to freeze the deposits for more than, say, a month (i.e., the deposit shift is effectively a short-term loan). Conversions of a bank's noncapital liabilities to the government into bank capital, undertaken when a bank is experiencing financial problems, are clearly effected for reasons of public policy and should be included in the augmented balance.

Bank assistance operations that have substantially divergent cash and economic impacts should, in principle, be recorded in the fiscal balance when the policy affects the economy. For operations that reflect prior policy, the implication would be to adjust past fiscal balances. Practically, this course is not feasible, and since it is preferable to record the costs at some stage, rather than at none, the operations should be shown when they are effected.

Operations that imply future outlays should be included in the augmented balance when implemented if the outlays are certain and known. For example, government assumption of a bank's liabilities should be added to the augmented balance (if not included in the standard balance) when the liabilities are assumed rather than when they are liquidated.³⁸ Subsequent liquidation would be treated as amortization of government debt. Bank assistance operations that are contingent, either because of

³⁶If the public financial institution's net income is incorporated into the budget, or its marginal rate of profit transfer is positive, its contribution to the fiscal balance should be offset to avoid double counting. The offset would be 100 percent if net income is fully incorporated or the marginal rate of profit transfer is 100 percent.

³⁷This requirement in effect clarifies existing GFS recommendations.

³⁸If the liabilities are implicitly assumed as part of a government takeover of an insolvent bank, the liabilities should not be recorded in the augmented balance as this would overstate the cost to the government. Rather, an estimate of the bank's insolvency (i.e., its negative net worth) should be recorded as a memorandum item when the bank is taken over and any subsequent bank assistance measures, such as a bond issuance, should be recorded in the augmented balance when implemented.

uncertainty regarding the amount or obligation, should not, however, be included in the fiscal accounts for practical reasons. Including these sums would involve a high degree of estimation and may even lead to moral hazard, as recognizing a potential claim on government resources may encourage perverse behavior. Thus, the current practice of recording such liabilities when they are liquidated is appropriate. However, since these liabilities still have an implication for assessing the sustainability of, and potential risks to, the fiscal stance, it is important to include some assessment of their expected magnitude as a memorandum item.

Conclusions

As soon as systemic banking problems are recognized, comprehensive policies need to be formulated without delay to prevent further deterioration, minimize the cost of restructuring, and reduce the likelihood of a liquidity crisis. Such policies require strong political support and an effective institutional framework for design and implementation; proper diagnosis and transparent loss sharing are particularly important. Systemic bank restructuring typically consists of a comprehensive package of macroeconomic, institutional, and regulatory measures. The operating environment, the configuration of the system as a whole, and the policies needed to restore public confidence—for which consistent macroeconomic policies are crucial—all require attention. Instruments chosen for bank restructuring should be cost effective and simple to implement, distribute losses equitably, aim at minimizing the burden on the public sector, avoid generating future moral hazard problems, promote good governance, and be consistent with sound macroeconomic management. For restructuring to be successful (so that it does not need to be repeated), it requires not only financial restructuring but also operational restructuring of banks. Systemic bank restructuring is therefore a multiyear process.

An assessment of the fiscal and other macroeconomic implications of a bank-restructuring strategy requires analysis of its medium-term sustainability and supply and demand impacts. Public sector financial assistance should only be provided in conjunction with a comprehensive restructuring plan that is consistent with macroeconomic stability, which may require substantial fiscal adjustment. The recording of government bank assistance operations, which currently varies considerably across countries and excludes many important operations, should be comprehensive, transparent, and consistent; use of the proposed “augmented” balance framework would facilitate this objective. Banking system unsoundness poses difficult trade-offs for the monetary authorities. Establishing and maintaining macroeconomic stability is necessary for successful bank restructuring, but, if pursued without compromise, tight macroeconomic policies

may exacerbate solvency problems and ultimately raise the overall cost of bank restructuring. It may be necessary, therefore, to consider stretching out the timetable over which such macroeconomic objectives are achieved.

Appendix I. Debt Dynamics and Bank Restructuring

Debt-based bank restructuring will require a higher primary balance to maintain, and restore, debt sustainability.

Primary Balance Improvement Required to Maintain Debt Sustainability

The expected change over time in the government debt-to-GDP ratio follows the simple dynamic equation:³⁹

$$\dot{d} = (r - g)d - s, \quad (1)$$

where d = ratio of debt to GDP;

r = average expected real rate of interest on public debt;

g = average expected real growth rate; and;

s = average expected primary balance ratio to GDP.⁴⁰

If r is greater than g , the system is unstable unless there is a compensatory primary surplus. Let s^* be the primary surplus required to stabilize the debt-to-GDP ratio at its current level:

$$s^* = (r - g) d. \quad (2)$$

After recapitalization of the banking system, the debt-to-GDP ratio increases by b . The new required primary balance is s' ,

$$s' = (r - g)(d + b). \quad (3)$$

The increase in the required primary balance to stabilize the debt-to-GDP ratio (the "sustainability gap") is then

$$s' - s^* = (r - g)b. \quad (4)$$

Thus, for the gap between the average expected primary balance and the debt-stabilizing primary balance not to increase after recapitalization, the average expected primary balance must be higher by $(r - g)b$ in each period.

³⁹Based on Ize (1993).

⁴⁰Assuming no seigniorage.

Alternative Fiscal Responses

Two fiscal responses to address the impact on the sustainability of public debt following a debt-based bank assistance operation are illustrated in Figure 1. In each case, the impact on the primary fiscal balance and debt ratio is compared with the situation in the absence of financial restructuring (Scenario A) and with passive acceptance of the sustainability gap (Scenario B). The first response, reestablishing the sustainability from a flow perspective, restores the prefinancial restructuring sustainability gap, zero in this case. This would entail increasing the primary balance to the extent that the sustainability gap has risen as a result of the jump in the stock of government debt associated with the bank restructuring operation (Scenario C). The second response aims at restoring sustainability from a stock perspective to the level that would have existed without recapitalization. Within this general goal, two parameters are crucial: the length of time taken to restore the debt ratio, and whether this restoration should be done gradually or in a single step. Both examples in Figure 1 take ten years to restore the debt stock but achieve this result with different time paths for the primary balance paths. Scenario D achieves the desired debt reduction by adjusting the primary balance immediately to that which when maintained over ten years would restore the debt ratio to the level that would have prevailed without recapitalization. Scenario E portrays a more gradual response, where the desired debt reduction is achieved by equal annual increments in the primary balance. Whatever the choice, the response entails a much stronger adjustment than the previous alternative of restoring the sustainability gap.

These alternative fiscal responses are illustrated using data for Hungary following the large-scale bank financial restructuring between 1992 and 1993 (Box 4). Faced with real interest rates that appeared likely to significantly exceed growth rates, failure to consolidate the primary balance would have resulted in a sharp increase in debt over the medium term. This adjustment would have had to be substantial—one scenario that aimed at restoring the debt-to-GDP ratio to its before-restructuring level would have required an immediate improvement of 1.7 percent of GDP in the primary balance.

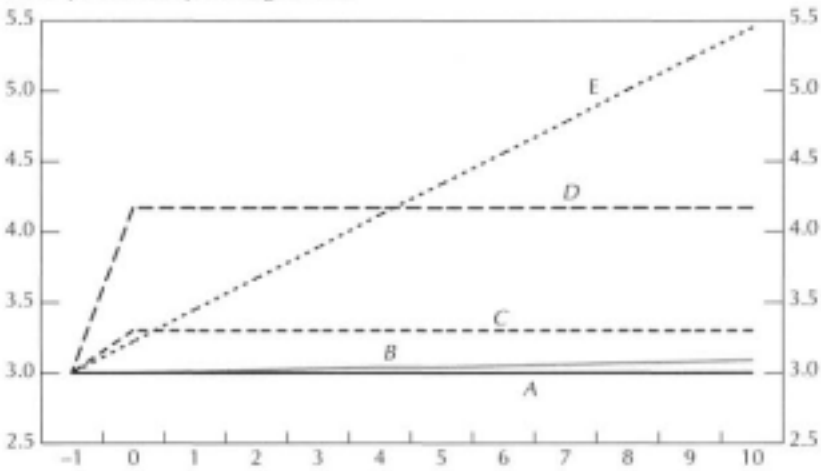
Appendix II. Role of the Central Bank in Bank Restructuring

Central banks have played several roles in bank restructuring.⁴¹ The following observations are based on the country case studies and the statistical analysis presented in Chapter 3 of this book.

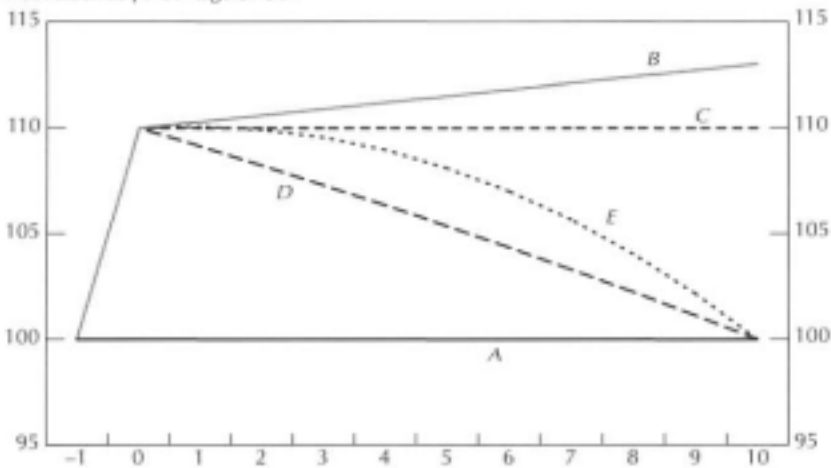
⁴¹This appendix was prepared by Claudio Dziobek.

Figure 1. Some Alternative Fiscal Responses to Recapitalization

Primary balance as percentage of GDP



Debt stock as percentage of GDP



Note: A, B, C, D, E refer to different scenarios:

- A: no recapitalization;
 B: after recapitalization, primary balance maintains postrecapitalization sustainability gap;
 C: after recapitalization, primary balance maintains prerecapitalization sustainability gap;
 D: after recapitalization, immediate increase in primary balance to level that when maintained for ten years brings the debt-to-GDP ratio back to the level that would have existed without the recapitalization; and
 E: after recapitalization, portrays primary balance that within ten years brings the debt-to-GDP ratio to the level that would have existed without recapitalization by gradual, even, increments.

All scenarios assume initial ($T = -1$) debt stock of 100 percent of GDP, a primary balance of 3.0 percent of GDP, and a real interest rate for the entire period that exceeds the growth rate by 3 percentage points.

Box 4. Hungary: Debt Sustainability and Alternative Medium-Term Fiscal Responses to Recapitalization

The Hungarian Government issued debt equivalent to about 9.1 percent of GDP to recapitalize the state banking system between 1992 and 1993, increasing general government debt to 90.2 percent of GDP. By assuming that the real interest rate would have exceeded the growth rate by about 2.8 percentage points in the medium term, as proved to be the case over the following three years, it can be implied that the actual 1993 primary deficit, 3.3 percent of GDP, was substantially weaker than the position that would have been required to prevent the debt-to-GDP ratio from increasing over time. Two alternative fiscal responses aimed at restoring sustainability may be illustrated.

Flow sustainability: bringing the rate of increase of the debt-to-GDP ratio back to previous levels would have implied improving the primary balance by 0.3 percent of GDP. However, the debt-to-GDP ratio would still have been (9.1 percentage points of GDP) higher than if the recapitalization had not occurred.

Stock sustainability: bringing the debt-to-GDP ratio back, within ten years, to the level that would have prevailed without recapitalization could have been achieved through different phasing. One approach would have been to increase the primary balance by an equal amount each year over the next ten years. This would have implied improving the primary balance by 0.3 percent of GDP each year.¹ Alternatively, the primary balance could have been increased immediately to a level that would be maintained over the next ten years—this would have entailed a one-time increase of 1.7 percent of GDP in the primary balance.

¹This calculation assumes a counterfactual where the rate of change of the debt-to-GDP ratio would be constant at the new, higher rate.

The central bank is well placed to play a key role in developing and monitoring the overall restructuring strategy, for example, because it has timely and comprehensive information about all aspects of the financial sector and it interacts with banks on a daily basis in the conduct of monetary policy. In many instances, the central bank operates the national clearing system and thus has information about arrears incurred by individual banks that generally provide early signs of liquidity problems.

In most countries the central bank is responsible for banking regulation and supervision. As the supervisory authority, it is responsible in many countries for monitoring enforcement of prudential regulations; designing corrective actions; and, ultimately, intervening in and closing nonviable banks. In cases of systemic bank restructuring, normal bank supervi-

sory instruments are generally insufficient or inapplicable. The task of developing a bank-restructuring strategy goes beyond the mandate of bank supervisors.

A further reason why the central bank has been involved in bank restructuring is that it may have the right amount of "arm's length" distance from the government. This aspect is often stressed in transition countries where nonperforming loans to state enterprises, or even to the government itself, are a major reason for bank insolvency. When an independent central bank oversees the bank-restructuring program, political intervention may be minimized. It may also have an advantage over the government in terms of its expertise on banking issues.

In many of the countries surveyed, the central bank played an important role as manager or comanager (e.g., together with the ministry of finance or with a deposit insurance agency) of the overall bank-restructuring strategy although not always with the best of results (see Chapter 3). Central banks played this role in Chile, Côte d'Ivoire, Finland, Hungary, Korea, Kuwait, Mauritania, the Philippines, Poland, Spain, and Tanzania. In practice, this role entailed developing the overall strategy, being part of the implementation, and monitoring progress of the implementation.

In contrast, other countries made conscious decisions not to involve the central bank in the coordination of the bank-restructuring process. In Peru, the Ministry of the Economy took the lead and, in Sweden, the Ministry of Finance assumed the lead at first, later transferring the responsibilities to a special Bank Support Authority. In Sweden and Peru, the banks' difficulties were diagnosed as insolvency problems at an early stage and the government accepted responsibility for designing and financing the bank-restructuring strategy. In the United States, legislation has transferred the role of bank resolution explicitly to the Federal Deposit Insurance Corporation (FDIC). This design is a legacy of the banking crisis of the 1930s when the government accepted the responsibility of coordinating the bank-restructuring strategy but was not ready to foot the bill.⁴²

Central bank liquidity support to the banking sector has taken various forms including direct loans to banks, reduction or waivers of reserve requirements, and broad application of discounting and of other monetary instruments. Lender-of-last-resort facilities are rarely appropriate in systemic banking problems because insolvency rather than illiquidity is the underlying problem, and lender-of-last-resort facilities should ideally be limited to cases of illiquidity. This distinction is not easy to make;

⁴²See the U.S. case study in Chapter 3.

Table 6. Numerical Example of Standard and Augmented Fiscal Balances

	Standard Treatment	Augmented Treatment	Comment
Revenue	17.6	17.6	Arbitrary amount chosen to ensure zero overall balance.
Expenditure and lending minus repayments	17.6	17.6	
Expenditure: noninterest	5.0	5.0	Creditor cash reimbursement (a current transfer).
interest	12.6	12.6	Interest on bonds (12) and assumed debt (0.6) GFS treatment.
Overall balance	—	—	
Additional operations			
Bank assistance measures not included above:			
Expenditure			
Noncash transfer reflecting bond recapitalization	—	120.0 ¹	Counterpart to financing entry for bonds issued to bank (100) and creditors (20).
Noncash transfer reflecting assumption of debt	—	60.0 ¹	Counterpart to financing entry for assumed interbank debt.
Lending minus repayments			
Quasi-fiscal operations: central bank loan	—	30.0	Long-term loan by central bank.
Augmented balance	—	-210.0	
Financing	—	210.0	
Bonds	—	120.0	
Debt assumption	—	60.0	
Amortization	-72.0	-72.0	Repayment of interbank debt (60) and sale of 10 percent of bonds (12).
Change in cash balances	72.0	102.0	Net decrease in cash/deposit holdings. Augmented treatment also includes central bank loan (30.0).
Memorandum items			
Debt increase	108.0 ²	108.0	Increase in liabilities for bonds (120.0) and debt assumption (60.0), less amortization (72.0).
Contingent liability	—	50.0	Estimated insolvency of public sector bank.

¹If the bank assistance measures were not unrequited but associated with increases in government equity, the amounts shown would be recorded under lending minus repayments.

²For noncash issuance of debt, GFS shows the debt liability, even though it does not show the transaction associated with the acquisition of the liability.

although, experience shows that extended liquidity problems typically reflect insolvency.

Even when the problem has been diagnosed as insolvency, liquidity remains a major problem forcing the authorities to take immediate action. The central bank is better equipped to provide immediate liquidity support than the government because of its daily presence in financial markets. Liquidity support from the central bank was provided in many countries, for example, Chile, Côte d'Ivoire, Egypt, Hungary, Korea, Kuwait, Mauritania, the Philippines, Poland, and Tanzania. In Sweden, liquidity support was not provided by the central bank but by the government. In Argentina, the Convertibility Law limited such support and two special government trust funds were established to provide banks with liquidity.

The central bank has been involved in medium- and long-term lending to banks. In Finland and in Spain, the central bank did not provide liquidity support but provided long-term assistance to banks. In some countries, the central bank was forced to transform short-term liquidity support into longer-term loans. In order to protect the central bank's financial integrity, longer-term loans should be either guaranteed by the government or refinanced through the government budget. In some cases, it has been required to take over bank ownership and thus has become involved in bank management. Ownership, or quasi-ownership, of commercial banks, however, is not compatible with the central bank's role as monetary and supervisory authority.

Appendix III. A Numerical Example of Standard and Augmented Fiscal Balances

Consider the case of a government (Table 6) that recapitalizes a bank by issuing bonds to the bank (100) and to creditors (20), assuming the bank's interbank debt (60), and giving creditors cash (5). Bonds issued to the bank and creditors pay 10 percent annual interest and have 10 equal annual amortization payments. The interbank debt is for one month and bears a monthly interest rate of 1 percent. The central bank also extends a long-term loan of 30 to the bank. An audit also reveals that a public bank has an estimated insolvency of 50.