

Recapitalizing Banking Systems: Fiscal, Monetary and Incentive Implications

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Abstract

In the aftermath of a banking crisis, most attention is rightly focused on the allocation of losses, on rebuilding properly managed institutions and on debt recovery. But when the authorities have decided to use budgetary funds to help restructure a large failed bank, or a failed banking system, there are also consequences for the incentive structure facing the new bank management, for the government's budget, and for monetary stability. We point out how apparent conflicts between these goals can be resolved by suitable design of financial instruments and by appropriate allocation of responsibility between different arms of government.

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1. Introduction and Summary

Overview

This paper is concerned with one aspect of the resolution of banking crises, namely the design of the financial instruments which may be used by the authorities in recapitalizing banks. Our premise is that this issue has been constrained by an over-emphasis on the apparent side-effects of the restructuring on fiscal and monetary conditions. Properly understood, fiscal and monetary concerns should not imply that choice of financial instrument design need be suboptimal from the point of view of financial policy, that is to say from the point of view of helping ensure the best incentives for the correct balance between prudence and risk-taking in the restructured system).

This is not a plea to subordinate fiscal and monetary policy to financial policy, but a claim that

- in the case of monetary policy, sufficient instruments exist to offset potentially damaging effects of bank restructuring, and
- in the case of fiscal policy, attempts to ease the fiscal pressure of restructuring through instrument design all too often amount to no more than an ineffective attempt to conceal the true extent of the losses by deferring their recognition.

At the risk of oversimplifying, the paper seeks to liberate financial sector policymakers from undue peer pressure from their fiscal and monetary counterparts.

The problem

Of course, this is just one of the issues facing the authorities. When they realize that they have a crisis of bank insolvency on their hands, policy decisions and actions are required in several different dimensions. The authorities will have to intervene in the management of failed banks to stop any further erosion of net asset value. Incompetent or corrupt management will have to be replaced. Arrangements need to be put in place for recovery of as much as possible of the nonperforming bank assets. And the allocation of the net losses as between the various claimants of the bank will have to be decided upon, together with the implications of that for the government and ultimately for the taxpayer.¹

If a failed bank is simply to be liquidated, then that process can take its course without further specific official action. But often the government will have decided to keep much of the failed bank's activities going, honoring more of the depositors claims than can be met from the remaining value of the bank's assets. For a while, this may be done while keeping the bank under official nationalized control, and while that is the case it is probably too soon to be thinking in terms of recapitalization. Eventually, though, the authorities will generally want to return the bank to normal autonomous functioning under private ownership. This may be done by a financial restructuring of each failed bank, or by merging the continuing business into a healthy bank. In either case there will have to be an additional transfer of value from official sources. In other words, bank recapitalizations often involve an official injection of resources into failed institutions.

¹ This paper does not address the larger question of how to allocate the losses. Rightly or wrongly, governments usually end up assuming at least a portion of the losses. It is at that point that the questions discussed in this paper arise.

How should this transfer of value, this recapitalization, of failed banks be designed? How can it be done in such a way as to ensure that the new owners and managers have the right incentives to operate the newly recapitalized bank in a prudent manner ensuring its good subsequent performance? How can the government's budget and the interests of the taxpayer be protected? What account needs to be taken of the impact of the recapitalization on aggregate monetary conditions?

Although the principles discussed here are valid for individual bank restructuring, they become more important the more widespread or extensive is the incidence of bank failure. When a substantial part of the banking system is insolvent, these questions can have significant consequences for the budget deficit and for the conduct of monetary policy, as well as for the profitability of, and incentive structure for, the recapitalized banks.

Monetary and fiscal policymakers are involved, and not just financial sector policymakers such as the banking superintendancy, and each approaches these issues with her own specific goals and instruments. This paper is primarily an attempt to make it clear that there are sufficient instruments to achieve the diverse goals, to describe these instruments and to suggest a form of assignment rule. Too often, financial sector policy goals have been unnecessarily subordinated to the apparent needs of fiscal and monetary policymakers.

This approach allows a resolution of some choices which have proved controversial in practice:

- Injecting marketable instruments into the banking system raises issues of monetary policy. If the banks are thereby made too liquid, the excessive liquidity needs to be mopped-up by other instruments of monetary policy. But the important point is that this can normally be done. Therefore monetary policy should *respond* to the recapitalization, rather than determining its design.
- The fiscal authorities are often keen to defer the fiscal realization of the problem, whether through zero-coupon bonds, non-marketable instruments or other mechanisms which appear to reduce the cost, but can ultimately increase it. It will not usually be necessary to provide cash, and indeed long-term bonds often seem to be the option that is preferred by governments. But the yield and other characteristics of these bonds does matter. In particular, there is a temptation for the government to issue bonds carrying below-market interest, but this should be avoided especially if it leaves the bank economically insolvent, and thus at risk of looting, despite satisfying simplistic accounting solvency ratios. And other features are also important, including marketability, maturity and frequency of repricing interest.
- Some practitioners argue that the uncertainty surrounding the true recoverable value of the bank's remaining assets means that the authorities should not feel obliged to allocate immediately the maximum amount that could conceivably be required; as

against this others note that even the new management of an undercapitalized bank could be tempted to adopt too risky a strategy. The proposed resolution here is that the bank must be adequately capitalized, but with the government retaining a claim that enables it to benefit from unexpectedly favorable subsequent performance.

Although we do not present any systematic statistical evidence that deviation from the suggested approach is generally damaging, we do draw on real world cases to illustrate what can happen. To some extent our approach is a counsel of perfection. In practice, there will inevitably be a certain amount of unavoidable "muddling through". But the muddle will be more easily navigable if ideal principles are kept in mind.

Dependence on country conditions

No single approach is likely to meet all possible initial conditions. This paper attempts to set out the major considerations involved in a way which will allow solutions for specific cases to be developed in a way that is sensitive to country conditions. To some extent the best solution, and indeed the available range of solutions, will depend on the scale of the initial insolvency in the banking system, but other elements of pre-existing country conditions are probably more important.

One key dimension is the government's credibility, on which depends the range of instruments and strategies that can be available to it. Relevant aspects of government credibility include (i) its pre-existing indebtedness and its capacity to tax (higher indebtedness relative to taxing capacity imply low credibility for future spending promises); (ii) the solidity of contractual commitment (if these are already weak, it is hard for the government to have its promises taken seriously, as its potential contractual partners perceive that renegeing in the future will have little cost to it); (iii) the institutional arrangements for monetary and exchange rate policy (where these are weak, the possibility of surprise inflationary finance will always be discounted in any dealings agents may have with the government).

A second key determinant of what is possible is the sophistication, depth and liquidity of the capital markets. If there is no trading in long-term debt instruments, for example, it is hard to price fixed-interest bonds that might be injected into a bank's balance sheet and, while steps can be taken to develop bond markets, the circumstances surrounding bank failure may not be the very best for doing this.

A caveat

Bank restructuring requires much more than getting the financial structures right; it should be recognized that this paper focuses on only one aspect of a wider problem. In particular, we assume that a competent, fit and proper management are in place, that the bank's operational procedures and information systems are adequate and that operating costs are under control. Suitability of controlling shareholders is also assumed, and we are dealing with the case where banks are in private hands – recapitalization of state-owned banks raises some different issues on which we will only briefly touch. Finally,

we take it that the policy environment within which the banks are operating is consistent with banks operating both prudently and profitably.²

The general solution: four distinct tools to be applied in a logical sequence

The general solution proposed here is that four distinct policy tools need to be used for four distinct goals, but in concert. The tools are: injecting assets, adjusting capital claims on the bank, rebalancing the government's own debt management, and managing monetary policy instruments to maintain monetary stability

Before anything else, the government has to decide how much of the banks' liabilities it is prepared to assume (and accordingly how much of the losses will remain to be borne by the banks' creditors).³ This decision needs to take into account the ultimate consequences for the taxpayer and the beneficiary of government spending programs that may ultimately have to be curtailed as a result of the rescue. Once the decision has been taken, however, the actual policy instruments that are adopted can be chosen according to the following logical sequence, which simplifies decision-making.

First, the government (or its agencies) typically needs to inject assets into the banking system: their effective and actual maturity, their yield and their liquidity should be governed by the goals of restoring the bank to a *capitalization and prospective earnings profile* consistent with safe-and-sound banking. This typically means that the assets should be marketable, bearing floating market-related interest rates and preferably with maturities no longer than those actually traded in the market; in short they should be bankable. The risk-profile of the assets is also a consideration, for example if their value is still linked to loan recovery, or if the government's own creditworthiness is not high: here financial engineering can help.

Second, the liability side of the bank's balance sheet may also need to be restructured. Government's claims here represent the government's quid-pro-quo for funds injected, and they represent an attempt to secure, in the event of a better-than-expected outturn for the bank, some return to the taxpayer consistent with an adequate *incentive structure* for the bank's private owners.

Given the policy stance adopted for the first two tools, the remaining two are adjusted to meet the goals of *fiscal and monetary management*.

The third step is then re-balancing the government's debt structure. The first two tools will have an impact on the time profile of the government's cash position. Re-optimizing

² Useful references for this wider context include Alexander et al. (1997), Dziobek (1998), Enoch et al. (1999), Roulier (1995) and Sheng (1996).

³ In particular, it is not always the case that all depositors should be bailed-out. In practice, even short of leaving them to their share in the liquidation (and to any entitlement they may have from a formal deposit insurance scheme), many alternatives have been tried, including temporary depositor freezes, forced write-downs and/or conversion of deposits to long-term claims on government. While this paper does not address the relative merits of these alternatives, it is worth distinguishing between those that impose transparent losses on depositors, and those, like discount bonds, which pretend to provide more protection to the depositors than they really do.

its deficit and debt management policy conditional on this impact will give rise to a need to adjust spending, tax and debt issuance policy.

Finally, monetary policy has sufficient instruments to offset any untoward impact of the remaining policies on monetary stability.

This logical ordering allows for a simplified allocation of responsibilities between different arms of government: first, financial incentives for the institutions, then fiscal affairs, and finally a monetary response.

Organization of paper

The paper is organized as follows: We begin, in Section 2, with how an injection of assets in the financial restructuring of failed banks can best be designed to restore bank capital, liquidity and incentives. Section 3 discusses the capital-type claims which the government may acquire as a counterpart of the asset injection, and to allow it to claw-back some of the injection of value in the event of unexpectedly favorable debt recovery. Section 4 examines the consequences for the budget and debt management. Section 5 draws out the implications for monetary policy and macroeconomic stability. Section 6 concludes. There are three annexes: Annex 1 reviews some features of five important recent cases (Argentina, Bulgaria, Cameroon, Mexico and Thailand) illustrating how the issues discussed here have arisen and been addressed in practice; Annex 2 works through a schematic and numerical balance sheet example.

2 Ensuring the Bank Has Enough Capital, Liquidity and Incentives

Probably the most crucial issue in bank recapitalization is that of ensuring that the bank truly moves forward with adequate capital.⁴ This is not always achieved even by schemes that purport to do so. The most common method, and the one we will concentrate on, involves the government injecting asset into the bank's balance sheet. Typically this is not cash; instead, non-performing assets are replaced or supplemented in the bank's portfolio by a government bond or obligation.

Recall that we are starting the analysis from the point where the government has already (i) decided that a restructured bank will be recapitalized and taken into majority private ownership; (ii) assessed the recoverable value of the old assets that will be held in the bank's balance sheet and (iii) decided on the issue of loss allocation and on which classes of the old liabilities are to be on the balance sheet. The to-be-recapitalized bank's balance sheet already reflects these decisions and thus begins either with negative capital, or with positive but inadequate capital.

The bank's new shareholders will be putting up funds. After all, they will end-up with a fully capitalized bank together with some franchise value. Indeed, if the bank's balance sheet contains some positive capital going into the recapitalization, then one may be able to leave it to the new shareholders to inject enough funds to reach the regulatory capital

⁴ This is not merely common sense. Repeated bank recapitalizations are found to be associated with higher fiscal costs (Honohan and Klingebiel, 2003)

requirement. But if the bank's initial capital is negative, then the government will also be injecting funds.

In this section we ask what the terms and conditions of the injected assets should be. In return for injecting assets, the government may acquire a capital claim on the bank. The terms of such a claim are considered in section 3

Alternatives to injecting assets.

Before proceeding to discuss what the injected assets should look like, it is worth briefly mentioning the two main alternatives to injecting assets, namely (i) some of the liabilities of the bank are assumed by the government or by a public agency (for example a deposit protection agency); or (ii) delinquent borrowers are subsidized with a view to helping them service their bank borrowings.

Assuming the deposit liabilities

Even if a government agency assumes the deposit liabilities, this is rarely the whole story. Depositors do not want their money in cash; they want a banking relationship and a deposit. In the case where the bank is liquidated and the deposit insurer pays out in cash, the eventual result will be that most of the depositors will redeposit the pay-out in another bank, which in turn will have the cash at its disposal to invest. If the government has funded a cash payout by issuing new government bonds to the market in general, the end result may well be that the banks that have acquired the migrating depositors invest the resources so received in these bonds. From the point of view of the system as a whole, therefore, the first of the two alternatives reduces to something close to the second.

Nor do the depositors want long-term bonds. Several banking crises have been processed by the conversion of frozen deposits into long-term bonds, perhaps at a discount. To the extent that the bonds are marketable, depositors will again trade these for bank deposits with much the same overall net effect as if the bonds had been directly injected into the banking system.⁵

The indirect approach: subsidizing the borrowers

Some governments attempt to solve the banks' problems by subsidizing the delinquent borrowers with a view to restoring the bank's assets to performing status (cf. the Mexican case). While the general question of industrial subsidies is beyond the scope of the present paper, this indirect approach is likely to be a costly way of dealing with bank insolvency. Bringing borrowers back to economic health will generally entail larger subventions than those needed simply to make good on their bank borrowings, and the flow of subsidies tends to be long-lasting. Besides, the deadweight of unnecessary subsidy that is inevitably involved in government programs is duplicated if both banks and borrowers are being dealt with. The extraordinary budgetary cost of the early (1982) Chilean crisis is likely at least partly attributable to the decision to bail-out borrowers.

⁵ Ecuador's 1999-2000 banking crisis was addressed along these lines, as had previous crises in Latin America, notably in Brazil 1990-91. The Argentina 2001 case discussed in Annex 1 displays similar features.

Ensuring credibility of the instruments employed

Assuming then that the government has opted for the bond injection, we now consider how this should be done.

Credibility is the overriding requirement. This requires firstly that the fiscal costs that are entailed can be absorbed, and that the government's prospective debt profile is a sustainable one. It also requires that, even though the government is handing out money now, it is not thereby signaling an open-ended intention to bail-out shareholders, managers or large creditors in future.

But credibility is also required at the level of the financial instruments used to replace bad debts in the balance sheet of insolvent banks. There is always a temptation for governments to opt for injecting an instrument with low cash outlays. For example, a government might simply offer the bank a non-interest-bearing bullet bond with a long maturity, but the same face value as that of the non-performing assets. The real value of such a bond falls well short of the value of performing loans of equal face value. A bank that is offered no more than that in return for ceding non-performing loans is likely to run into difficulties again, as its operations cannot easily be brought back to profitability.

Even if sufficient zero-coupon bonds are injected to bring the *net present value* of the promised payments up to the required level (when calculated at the risk-free discount rate), such an arrangement cannot be regarded as satisfactory from the credibility point of view. A government which acts like that will be suspected of temporizing. Market participants will likely assume that it has no clear idea of how it is going to fund the bullet payment at maturity. Accordingly, holders will discount the value of the bond, attaching only a moderate probability to its being honored in full and on time. Marked-to-market, a bank holding such an asset may still be insolvent, and may feel itself to be insolvent, with all of the incentive problems that creates. If the bond is tradable in a fairly competitive market, these valuation and credibility problems will come out in the open and force the government to face up to them.⁶

Even if the government avoids zero interest or deep-discount bonds, and even if it ensures an adequate injection in net present value terms, some of the same issues may still arise, in an attenuated way. They can be eased by instrument design in terms of maturity, yield and negotiability, and possibly, if necessary, by supplementary enhancements.

Maturity, yield and negotiability of injected assets

In the presence of deep capital markets with a wide range of available maturities, the exact maturity of any marketable government bond injected into the bank will be of little consequence for the incentives facing the bank, as the bank will easily and speedily be able to exchange it for assets of the desired maturity. Even if the injection of funds is

⁶ As outlined in the annex, these issues arose acutely in the case of the Bulgarian "Zunk" bonds, which were held in the books of the banks at values that were much higher than their market value, essentially because the coupon rate was much lower than market yields on Bulgarian sovereign debt.

large relative to the overall size of the capital markets, the choice of maturity can be left as a matter of overall debt management policy, and not as one of banking policy.

In countries where the capital markets are not so deep, the choice of maturity matters more. Once again there is a temptation for the government to lock the bank in, with the use of long-term bonds not easily (or perhaps at all) marketable. But use of long-term bonds in such circumstances has at least five drawbacks (cf. the account of Mexico, Annex 1).

- First, they are difficult to value: if there is no active long-term bond market, the authorities may (and do) argue that the appropriate long-term interest rate is much lower than current short-term interest rates. But unless the bank can convert some of its liabilities into a form that has equally low yield, this will create a long-term profitability gap which will tend to result in decapitalization of the bank over time.
- Second is the question of cash-flow. Even if the prospective capital gain on the bond as it nears maturity is enough for the bank to remain solvent over the years, in practice the bank could have to pay interest to depositors out of net loan repayments, a situation which will place a constant pressure on the bank to expand its deposit base so that it can even maintain loan supply to existing clients. In short, this bank does not have a normal growth environment, and will be placed under stress.
- Third, much as with zero coupon bonds, though to a lesser extent, government reluctance to commit contractually to repaying this indebtedness fairly soon may create a doubt as to authorities' real commitment to honoring it. Potential bank owners may discount the value of the bonds, and hence be reluctant to invest in the bank.
- Fourth, the strategy may induce too much interest rate risk into the bank's balance sheet. If the long-term bond bears a fixed interest rate, this will expose the bank to the risk that market interest rates will change (this can be avoided by specifying that the bond's interest rate float with the market).
- Fifth, the bank's ability to resume lending to the private sector will be limited for the duration of the bond's maturity, thereby reducing the flexibility of the banking system's response to emerging lending opportunities.

A more natural approach is to inject a type of asset which is more in line with the sort of asset which a bank would voluntarily hold on its balance sheet: short-term, and with interest rate floating in line with the market. In short, with an asset that can readily be regarded as "bankable".

Such an instrument can more easily be made marketable, thereby freeing the bank to move forward with an asset-side strategy that is not dependent on its particular failure history. If marketable, even longer-term bonds will do this, provided their maturity is not beyond what can conveniently be traded on the local market.

Currency of denomination

Normally, the assets injected will be denominated in local currency. However, when the banking crisis is associated with a currency crisis, and/or when the banking system is dollarized, local currency assets may not provide an adequate currency match for the bank. Issuance of foreign-currency denominated securities by the government may then be unavoidable; this was done, for example, in Bulgaria (Annex 1). Dollarized banking systems raise a host of policy issues, which will not be further discussed here (see De Nicoló, Honohan and Ize, 2003)

Possible Enhancements

When a government's credibility is in doubt, it may have to go further than just providing a marketable instrument if the banks are to feel secure.⁷ Here are some illustrations of enhancements that have been offered in particular circumstances.

The injected assets were endowed with privileged access to central bank buy-back provisions in the West African part of the CFA zone – UEMOA – in the early 1990s. Of course this should not be considered normal or necessary, but in the particular circumstances, the buy-back provision may have helped the credibility of the bonds, offered as it was by a regional (multi-country) central bank in conditions of some doubt as to the creditworthiness of some of the governments concerned.

In the other CFA zone (CEMAC), Cameroon employed two interesting devices to enhance the credibility of injected bonds (See Annex 1). Specifically, in 1998-99 (after several years of uncertainty), the Government of Cameroon converted the recapitalized banks' claims on it into negotiable bonds. The interesting dimension is the way in which these bonds received credit enhancements. One portion (with medium-long term maturities) was secured by an escrow account at the regional (multi-country) central bank, into which earmarked fiscal receipts were deposited. This can be seen as the establishment of a kind of segregated sinking fund, with mutual reliance on the independence of the multinational central bank as a trustee. The remaining portion, with 30-year maturity, were backed ("Brady"-like) by a zero-coupon French Government bond of the same maturity.

One innovative approach recently employed in Argentina (see de la Torre, 2000 and Annex 1) involved securitization of the bad loan portfolio (which was assumed by a separate company) into three tranches, with the senior tranche only being left with the restructured bank. On the assumption that recoveries would be sufficient to service the senior tranche in full, this left the bank with a bankable asset (and in any case one which was negotiable). In the event, things did not work out all that smoothly, but the approach had merit.

⁷ At the heart of the continuing (2003) debates surrounding the recapitalization of Mexican banks is the question of exchanging the unfunded promissory notes they hold from the old Mexican restructuring agency FOBAPROA for those of the new agency IPAB, which can borrow on the market and the servicing of whose borrowings are guaranteed on a year-by-year basis by the national central bank. An especially good example of what can be done to boost the credibility of the recapitalization comes from Cameroon and is discussed below.

Less attractive forms of enhancement come in the form of guarantees offered bilaterally by the authorities to the restructured bank in respect on the value of their loan portfolio. These can be in the form of yield maintenance agreements, stop-loss guarantees or put-back options (allowing the bank to sell the asset to the government at a pre-fixed price). From the point of view of getting the bank on a forward-looking path under financial autonomy, the potential problem is that such bilateral arrangements risk keeping the government too closely involved in the ongoing business of the bank.

If the credibility of the government with investors is problematic, then attempts by it to provide enhancement may eventually cost more than they are initially valued in the market. Over-complex enhancement may prove undesirable for this reason.

Summary on injecting assets

From the banking policy point of view, the financial instruments injected by the government into the failed bank should be tradable in a liquid market (if there is such a market). Ideally, they would bear adjustable interest rates linked to money market rates, thereby avoiding the introduction of unwarranted interest rate risk. Finally they should not be at a maturity beyond that which can be traded in the local market. Some of these considerations are less important where wholesale financial markets are sufficiently developed to allow the maturity and interest risk characteristics of the banks' investment portfolio to be altered through market transactions, but this will not always be the case.

3 Government Capital Claims on the Bank

As part of the process of recapitalization, the government or its agency may also acquire a claim, often subordinated, on the bank. There are two aspects to this: first is the counterpart of the bond injection. Second is a possible claim on better-than-expected recovery on the failed bank's assets. The purpose of these claims is to ensure that the restructuring is achieved at the least cost (in net present value terms) to the taxpayer.

Impact of bond injection on the liability side of the bank's balance sheet.

As a counterpart of an injection of assets into the bank's balance sheet there must obviously be a corresponding increase on the liability side. If the injection comes without any specific *quidproquo*, then it will be the value of the shareholders' funds that increases, as the owners of the bank's equity normally have the residual claim on the bank's assets, after other liabilities have been paid.

The bank's capital consists of these shareholders' funds plus other long-term claims that are subordinated to the claims of depositors.⁸ Therefore, the unrequited injection of an

⁸ The Basel capital accord established some widely accepted rules concerning the calculation of capital. Given that capital is the residual obtained by subtracting non-capital liabilities from total assets, we may think of these rules as (i) defining certain measurement principles for the asset side items of the balance sheet (notably related to asset revaluation reserves and general loan-loss provisions) and (ii) specifying which subordinated liabilities can be counted as "capital" and thus need not be subtracted from total assets.

asset into a bank also increases the bank's capital. (The new asset is clearly not *itself* part of the bank's capital, as the capital is a residual. The asset may be liquid or illiquid, with a short- or long-term maturity; none of that affects the degree to which its injection increases the bank's capital).

Note also that, the economic value (as distinct from the balance sheet value) of the equity claims may increase by more than the market value of the injected bond to the extent that the injection brings the bank into regulatory compliance, enabling it to move forward and to earn profits from its franchise.

When the government injects an asset, it may therefore also choose to acquire an explicit capital-type claim on the bank especially if it has injected enough to bring the bank's capital strictly above zero. Otherwise, part of the injection may simply represent a transfer from the taxpayer to the new shareholders.

Comparing the before- and after-restructuring, therefore, we can imagine the assets side of the bank being increased by (A) an injection by the government and (B) an injection from the (new) owners. The government may (and if there is injection from the new owners it should) want to acquire (C) some form of capital claim on the liability side.

Note a curious distinction which arises as to the nature of the asset that can be injected. The government is free to inject a claim on itself as an appropriate asset, whereas the private owners must not be allowed to do this. The problem is that, if private shareholders just inject a claim on themselves, they do not truly have much net capital at stake, and they will not therefore have appropriate incentives to minimize the probability of the bank failing (something like this seems to have occurred in the failed Mexican privatizations of the early 1990s).⁹

Simply stated, a natural benchmark solution (though as noted below under "scale" it is not the only one) is for the government to inject enough under A to bring the calculated capital up to zero, with the owners injecting the further sums under B required to bring the capital up to the regulatory minimum. In accounting terms, this may appear to be a zero-value transaction for the owners, and as such of limited appeal to private wealth-holders. But in economic terms, and more importantly in terms of market value, the net present value of the equity that the owners acquire in this scenario will be greater than the cash value of the injected asset. This, as mentioned is because of the franchise value – the stream of future profits in excess of the risk-free rate of return – of operating the bank. (Annex 2 works through a simplified balance sheet example to spell out these points).

Scale

⁹ The bank's owners will gain disproportionately from risky management strategies inasmuch as they benefit from the upside risk, but suffer little from the downside. For this and related reasons, most bank regulatory structures place tight limits on lending to persons connected with ownership or management. Because it is neither truly free from the downside risk, nor standing to gain from the upside, the government's injection of its own bonds is not subject to the same moral hazard.

Beyond stating that the restructured bank should obviously have enough capital to meet the standard regulatory requirements, it is unwise to be dogmatic about how the balance between *A*, *B* and *C* should be struck. The more assets the government injects, the easier it is to attract serious substantial shareholders and give them suitable incentives. (In the failed Mexican privatizations of the early 1990s, the government arguably pressed the new shareholders for too high a cash outlay). On the other hand, public funds are scarce and the government has to bear value-for-money considerations in mind. The experience of the Nordic countries shows that, when the crisis has blown over, divesting the state's ownership shares can be quite remunerative.

In a major crisis, the fiscal authorities may have to envisage injecting funds beyond the point where the capital of the banking system back up to zero, but also to provide some of the required capital for future operation, if the system is not to suffer from a credit crunch resulting from capital starvation (i.e. larger *A* to make up for smaller *B*). After all, likely investors in banking will be extremely cautious in the recessionary post-crisis environment. The issue of private vs. public ownership looms large here, but a variety of intermediate and dynamic positions can be adopted, useful especially for recapitalizing banks at a time of low private sector confidence, while ensuring a semi-automatic transition to private ownership.

If the authorities do inject funds on this larger scale, they can expect to make a return on the investment, and accordingly they should take a claim *C* on the bank, the contractual design of which needs to ensure that the claim on the one hand does qualify as capital, but on the other hand keeps a pressure on the private owners to find enough capital to buy out the government within a relatively short number of years.

Terms and conditions of government's new capital claims

Make them explicit

Just as the terms and conditions of the bond injection matter, so too for the terms and conditions of the new capital claims (item *C* above) which may be acquired by the government as part of the restructuring. In some cases the terms of these claims have been extremely vague, as in the case of Sri Lanka, where the claim had no particular maturity but was simply repayable "when the bank was in a position to do so". Such a vague conditionality may seem lenient to the new bank, but in fact it can effectively remove all of the bank's financial independence. As they may be unable ever to service fully or repay this debt, the bank's management may be in effect beholden indefinitely to the government and become as it were civil servants, pursuing in practice not the goals of the bank, but those of the relevant government ministry.

Instead, the government's claims on the banks should be expressed in clear and unambiguous terms, and should ideally employ standard financial instruments for which an established jurisprudence exists, allowing any disputes that might arise between the bank's private shareholders and the state agency to be readily resolved at court. This also argues for the legal holder of the government's claims to be a government agency rather than the government itself.

In order not to be excluded from the Basel concept of capital, the government's claims must be sufficiently subordinated to those of depositors. Long-term subordinated debt meets this requirement. If it has five-years' initial maturity or longer, it can be counted towards Basel Tier 2 capital (though only for an amount equivalent to 50% of core capital), provided it is amortised at 20 per cent per annum after its remaining maturity reaches five years. Another alternative is for the government to take perpetual non-cumulative preference shares convertible into equity (under specified circumstances - such as renewed deterioration in the bank's capital) and repayable at the option of the bank.

Benefiting from unexpectedly favorable recovery

Both of these arrangements have the drawback that they give the government no upside possibilities. Yet, even if there is no formal provision from the outset for the government to share in an unexpectedly favorable recovery of the bank's fortunes, bank shareholders may anyway suspect that, in such an event, they could have to make significant *ex post* payments to government (perhaps in the form of special taxes) designed to claw-back part of what will by then appear *ex post* to have been an excessively generous government injection.¹⁰ Better to eliminate the uncertainty by settling this in advance.¹¹

Evidently a range of risk-sharing/profit-sharing alternatives are available. These would differ as to residual control rights (including warrants), profit sharing rules (including specific sharing rules for earmarked loan recovery) and maturity.

Claims related to bad debt recovery

Probably the best way of ensuring that the taxpayer benefits from an unexpectedly favorable debt recovery experience is to establish government claims directly linked to loan recovery. The non-performing portfolio of loans that has caused the problem is rarely worthless, and may be prove to be worth much more implied than conservative valuations at the time of the restructuring.¹² To the extent that the bad debt is being removed from the bank, and the recovery managed elsewhere, this issue does not further impinge on the design of the financial restructuring.¹³ But if the bad debt remains on the new bank's balance sheet, albeit heavily provisioned or written down, it may be desirable for the government (or its agency) to retain an entitlement to share in the eventual upside of debt recovery. By building in a substantial claw-back of recoveries in this way, the government can safeguard the taxpayer's position even if the initial injection of funds

¹⁰ For an account of the 1992 clawback in the case of AIB, see Honohan and Kelly, 1997.

¹¹ Though as the Mexican case shows, governments may seek to renegotiate even injections of type A if circumstances or information should change.

¹² It also embodies some informational capital. In the case of the privatized National Bank of Commerce of Tanzania, the new shareholders undertook to recover on the old portfolio for a fee arrangement (details not fully disclosed). The new management found that the recovery process gave them valuable information about the creditworthiness of the bank's old customers.

¹³ With good institutional design and contracting for non-performing asset management and recovery, the government can hope to recover a portion of its initial outlay – perhaps a very high proportion as was achieved in Sweden (Drees and Pazarbasioglu, 1998). But absent these conditions, devices such as establishing a centralized asset recovery agency may prove to be no more than an additional drain on the budget (Klingebiel, 2000). The different ways of going about this are not the central concern of this paper (cf. Enoch et al., 1999).

required has been exaggerated by overly-conservative accounting. While this will depress the incentive for the bank to recover, it does provide an improved incentive for the bank not to exaggerate *ex ante* its estimate of the degree to which the loans are unrecoverable.

A capital budgeting perspective

It is possible to look at the question of government injection of funds (beyond what is required to bring the capital of the bank up to zero), and the design of the capital claims, from a fiscal point of view as one of capital budgeting. This allows a different perspective to that provided from the banking policy point of view. The capital budgeting perspective confirms that it is proper to separate the investment decision (the topic of this section) from that of financing (the topic of the next section).

An important principle of public finance provides guidance here, namely that the marginal social return on public spending needs to be higher than that on private spending, because of the deadweight marginal cost of public funds.¹⁴ This principle implies that the government should be slow to spend public funds except where there is a "public good" aspect – a social return that cannot be captured by private entities. One such case is when, from the private investors' point of view, the risks facing the bank are substantially political in nature.¹⁵ Thus, if investors fear that the government will seek to claw-back a disproportionate recovery in the fortunes of the tax through exceptional explicit or implicit taxation, and if the government does not have the credibility to convince the market that it has no intention of doing this, it would be inefficient of the government to sell the bank to a skeptical market realizing a price discounted by the market's expectation of future expropriation or disproportionate taxation. That would amount to an *ex post* transfer of scarce budgetary funds to the purchasers. So in this case a financial instrument must be sought which allows the government to realize some of the upside gain from a recovery of market confidence.

This is not an unrealistic scenario in the middle of a systemic crisis, when the government's options seem limited and the likelihood of onerous future taxation can seem high. It is in precisely this kind of condition that the government may wish to consider a risk-and-return sharing investment in the bank. Thus, as already suggested in the text, the decision as to how much of a stake the government should take in the newly capitalized bank will be partly dependent on the outcome of its bargaining strength vis -à-vis new shareholders.

We have seen this kind of mechanism, for example, in Mexico, when as a quid-pro-quo for injecting funds, the government received a claim on the recoveries. This sort of claim need not just be a fixed percentage share.¹⁶ In principle quite complex contracts with embedded options can be envisaged, but only if there is a shared understanding that the contracts are going to be honored on both sides.¹⁷ Complexity need not be a problem under those circumstances, but clarity is certainly needed. A contract structure that is so

¹⁴ The point is that, in order to raise funds to pay for public projects, the government must impose taxes which, at the margin, impose a costly distortion on private sector behavior (except in the unlikely case that it has at its disposal sufficient lump-sum or corrective taxes). Cf. Squire (1989).

¹⁵ If capital markets are very incomplete there could also be an (Arrow-Lind type) argument for the government to assume a risk that is too large for individual wealth holders to absorb. Nowadays, such an argument is only likely to be relevant for transitory periods during an economic crash.

¹⁶ In the Mexican deal, the government was to receive $25+0.75r$ per cent, where r is the percentage recovery rate.

¹⁷ More popular devices that have been negotiated bilaterally by restructured banks include stop-loss guarantees and yield maintenance arrangements offered by the authorities, or put-back options granted to the bank. Far from giving the government a share in the up-side, these particular types of contract generally involve hidden and potentially large future liabilities for the government and often leave the bank with poor incentive to recover.

vague that it will eventually have to be litigated, or which leaves either side considerable discretion is unlikely to create the correct incentives going forward.¹⁸

A schedular approach

Bank restructurings can generate expectations regarding the future availability of bailouts. They also present difficulties for transparency, with frequent accusations after the event that particular investors were favored in the restructuring and allowed to acquire a sound bank for too little money.¹⁹

Some of these difficulties can be avoided by the announcement in a crisis of a special time-bound schedule or menu of capital assistance. Different versions of this have been tried in Thailand and Mexico (Annex 1). The authorities announce that budgetary funds will be available, but only on condition that private shareholders put in a proportionate amount. Similar schedular arrangements have been announced for subsidized loan purchase schemes; in Thailand, shareholders effectively had a menu of alternative options from which to choose.

Of course any such scheme will have a deadweight cost which advocates of micro-managed intervention may claim to avoid. (Thus if micro-management can deliver an exact knowledge of the capital deficiency of the bank, and of its franchise value, this could enable the government to get it going again in an adequately capitalized manner at lower cost). But by offering a menu, and doing so publicly, the government can draw also on the private sector's strengths in valuing assets and in perceiving business opportunities.²⁰

Also, many new investors will be attracted to a semi-automatic recapitalization mechanism, whereas they would be uninterested in entering into a highly contingent and uncertain bilateral negotiation with the government. Thus, provided the menu is generous enough overall, it can help attract a wider group of investors and as such enhance the value of the banking business which the government is trying to rehabilitate.

4. Implications for debt management

In this section we look at the implications of the restructuring for the government's budgetary strategy. As before, we begin the analysis at the point where the government

¹⁸ None of the cases discussed in Annex 1 presents a fully satisfactory solution to the problem of recovery on delinquent loans and seized collateral. In Thailand most of the loans were still on the bank's books three years after the crisis broke; those acquired from non-bank finance companies had been disposed of at a discount of about 75%, and even then a new government agency was a residual buyer for many of them. In Mexico, the restructuring agency acquired some of the delinquent loans outright, while in other cases, as mentioned, it acquired a claim on recoveries made by the banks: the projected recovery rate from the acquired loans is only 20 per cent. The innovative securitization approach in Argentina, mentioned above, was criticized for lacking adequate incentives to promote loan recovery. Cameroon's SRC had recovered less than 3 per cent of its portfolio after half a decade.

¹⁹ Credit Lyonnais bank negotiated *exclusively* with the authorities for the purchase of SCB bank in Cameroon in the late 1980s.

²⁰ But offering a recapitalization menu cannot be a substitute for intervening undercapitalized banks, as is suggested was a problem in Thailand (Claessens and Klingebiel, 1999).

has decided to protect depositors from (some portion of) their prospective losses in a bank which has failed and is being intervened. Some of these costs may be incurred outside of the recapitalization *per se* (as when insured depositors are paid-off separately, or when subsidies are paid to delinquent borrowers).

Need for ensuring a feasible overall fiscal plan

All of the discussion of the previous two sections has assumed that the government already has a feasible general plan in terms of absorbing the total costs, whether through increased taxation, reduced spending, the inflation tax, or a new sustainable time-path of overall indebtedness. This is not a foregone conclusion. The market may call into question the government's ability and willingness to meet out of additional tax revenues, or expenditure cutbacks, the liabilities that it has suddenly assumed. The fall-back position of government may be to allow inflation and currency depreciation.²¹ Or it may slip into arrears and default. The huge size of some of the failures in recent years has placed a question-mark over the viability of governments' budgetary and exchange rate/inflation strategy, and some have argued that this has provided a causal linkage from bank failure to currency collapse.²² A credible financing plan must be in place to guard against self-fulfilling market expectations driving the economy into a bad equilibrium here. However, these matters are not the focus of the present paper.

Adjusting debt management for the consequences of restructuring

As part of the recapitalization, the government will, as discussed, injects some bonds, and may acquire some claims on the newly recapitalized bank. It may also acquire claims over some of the recovery of the failed banks' bad assets. In this way, the government's portfolio of debt and financial assets has altered as a result of the rescue and bank recapitalization. This implies commitment to a stream of cash outflows and receipts -- some of them certain, others contingent.

Most budget managers will intuitively look first at the immediate cash costs of any restructuring policy, and then for the implications for cash-flow in the first few years following. This can become an all-determining pre-occupation, especially for a government with limited taxing capacity, for one with limited access to the financial markets and for one which is operating under an IMF program which constrains cash outlays. Most options for the recapitalization need not involve substantial immediate cash outlays, but we have stressed that choosing a policy on the basis of its cash-flow implications is unlikely to be the optimal policy, even from a narrow fiscal management perspective.

Instead, we have proposed that the design of the restructuring should be determined on the basis of banking policy and net present value considerations, and not on cash-flow considerations. Just as investment and financing decisions are normally kept separate, so too, the government should look at the cash-flow consequences of the restructuring as presenting a task to be resolved by debt management and overall fiscal policy (and not as

²¹ Whether intended or not (probably not) it was the outcome in Bulgaria, 1996. For a theoretical discussion of this type of problem, see Burnside et al. (1998).

²² E.g. Chang and Velasco, 1998. Though of course the reverse causality has also been important.

a reason for reconsidering the design of the restructuring. The decision as to whether this should be financed by taxation, by reduction of public spending, or by additional borrowing is one which is then wholly independent of banking policy considerations. It is a pure question of debt management and overall fiscal policy. In practice, bank failure is sufficiently rare that it will generally be optimal to smooth its impact on taxation and public spending over a number of years. Thus, there will be a need for new borrowing, if available. Some of this borrowing is done, in effect, through the issuance of the bonds that are going to be injected. Unless the maturity of these bonds happens to be just right for debt management purposes, this will give rise to a need for rebalancing the government's remaining debt portfolio.

Use of other government agencies

A need for additional borrowing by the central government can draw attention to the deterioration in the fiscal position in a way which may be unwelcome. It is not altogether clear whether accounting treatment really can matter, or whether markets can see through different approaches to accounting for what amounts to the same economic reality. In practice, governments tend to welcome legitimate reasons for keeping expenditures off-budget. That is one motivation for isolating the financing of bank failure through an ancillary government agency such as a deposit insurer.

There are some risks in this approach. If the deposit insurer's borrowings do not carry the full guarantee of the national government, they may have to offer higher yields (a credibility effect). Even though the deposit insurer may benefit from an earmarked tax, such as deposit insurance premia, the revenue may not be sufficient in a crisis. Likewise if the deposit insurer has a statutorily imposed borrowing ceiling, it may prove unwise to rely on it to make the optimal investment or financing decision.

If it is a government agency that will be assuming the liabilities, then that agency must be in a position to meet cash calls. If it does not itself have cash or liquid reserves, this may be done through its own borrowing, but if it has no statutory authority to borrow, or if it cannot call on a government guarantee, the cost and difficulty of making this borrowing may well induce the agency to seek an alternative approach which could prove more expensive in the long run. There are examples from the USA in the late 1980s, and from Argentina more recently. These have involved the agency either engineering tax-advantaged arrangements which have passed the cost to the revenue authorities (USA), or substituting assumption of implicit future commitments for explicit borrowing (Argentina), in each case possibly increasing the net fiscal cost in the process.

In general, the advantages of leaving the decision to an ancillary agency are chiefly those of achieving focus and perhaps retaining independence from interference from political personalities. Thus, while the use of other agencies in this activity can have some favorable incentive effects for the relevant public officials, and can also improve the accounting presentation of the government's actions, financing is unlikely to be the strong point of ancillary agencies (this includes the central bank). (In the Mexican case, the new agency IPAB was effectively going to the markets in competition with the Federal Government).

5. Implications for monetary policy

The final piece of the jigsaw is the response of monetary policy instruments to ensure that the resolution does not destabilize monetary conditions in an unintended way. Basically, our approach is to see the bank restructuring as something to which monetary policy should respond. In other words, monetary consequences should not be a central consideration or a constraint for those designing the restructuring.

Nevertheless, the impact of bank resolution policy on monetary conditions can come in either of two forms: a direct effect through central bank cash injections in a failing bank, or indirectly through the consequences of fiscal action to restructure the failed bank.

Ideally, then, the financial restructuring is handled as a directly fiscal matter, in which case the role of monetary policy is to adjust liquidity conditions to ensure that the goals of monetary policy are not accidentally compromised by the financial instruments that have been created by the restructuring. However, in practice, the central bank is often the first official agency in line to provide financial support to a failing bank (the Thai case is a clear example).

Direct central bank lending

The term "lender of last resort" often proves to be a misnomer in this respect. While it may be a last resort in the sense that all potential private sector lenders have refused, the central bank is often the only government agency with the resources and the authority to make large liquidity loans promptly in a crisis. Indeed, unless governed by restrictive legislation such as that of a currency board, the central bank always has the wherewithal to cover domestic currency obligations arising out of a bank failure.

Central banking doctrine makes a sharp distinction between liquidity loans and solvency support. The former are made to a bank which is under cash pressure, but is expected to be able ultimately to liquidate its portfolio. According to the doctrine liquidity loans should only be made against adequate collateral. According to the same doctrine, solvency support (i.e. loans to an insolvent institution) should not be made by the monetary authority, as this will fuel inflation. If this doctrine is followed, then we are in the ideal situation where monetary consequences can be separated from fiscal consequences.

Unfortunately, distinguishing between the solvent and the insolvent among illiquid banks is not easy to accomplish in the limited time available for deciding whether or not to grant a liquidity loan. Even if the central bank suspects that the bank is insolvent, it will come under pressure to meet the short-term needs. And the quality of the collateral available to secure the lending is likely to prove questionable, especially in a generalized crisis. In short, the central bank will often find itself with claims on an insolvent bank, and as such become a primary source of capital injections into the banking system.

And these will be cash injections. Unless the cash injection is sterilized, the consequence will be inflation (or, if there is a fixed exchange rate, an outflow of funds through the current account of balance of payments). The “inflation tax” has often been used to help pay for banking collapses. It is a tax with rather arbitrary incidence (the very poor and the very rich do not hold much cash; also unexpected inflation results in substantial transfers between different segments of society whose incomes depend on contracts fixed in nominal terms). Furthermore, an unexpected surge in inflation can trigger a lengthy process of adjustment during which inflation well overshoots what is strictly needed to pay for the initial deficiency. Getting this under control again can often result in a recession; besides which, cross-country studies establish that, beyond a moderate level, inflation damages growth. Any country choosing this route should recognize what it is doing, and not see the use of central bank funds as an easy option.

If there is a fixed exchange rate regime in effect, or when the failing bank has significant foreign exchange obligations, the central bank may no longer be able to provide cash to meet the claims of depositors and still hold to the exchange rate peg. This has been seen in graphic form in a currency board arrangement (as in Argentina in 2001).²³

One of the least satisfactory aspects of central bank financing of bank insolvency is that accounting for such support is often opaque. The total cost absorbed, whether by the fiscal authorities or by the inflation tax, is usually hard to determine. Among the difficulties are the off-market interest rates normally applied to many central bank assets and liabilities; support to an insolvent bank will change the amounts subject to these off-market rates. Few if any central banks properly and fully account for the implicit subsidies and taxes that are thereby triggered. For example, since the production of high-powered money appears in accounting terms to be virtually costless, any interest return on a loan made by the central bank may appear to be profitable, but it represents an expansion of the base for inflation tax.²⁴ Another example comes from exchange rate guarantees, preferential exchange rates provided to failing banks which need to repay foreign debt and similar arrangements undertaken just before or after an exchange rate collapse triggered by the banking problems.

Many a central bank has found itself technically insolvent and unable to pay its administrative expenses because of an accumulation of such implicit forms of assistance. This can damage the operational and policy independence of the central bank, and needs to be corrected through a financial restructuring of the central bank.

Protecting monetary stability

Returning, though, to the preferable case, where the restructuring of the failed (commercial) bank has been rightly treated in the first instance as a fiscal matter, what remains to be discussed is the needed central bank response to ensure maintenance of monetary stability.

²³ Bulgaria’s legislation places continuing statutory constraints on the currency board’s authority to make loans reflecting the absolute priority given to the exchange rate peg.

²⁴ For a discussion of alternative measures of seigniorage and the inflation tax, see Honohan (1996)

Decide whether there is to be an impact on inflation and exchange rate

Here the important points are threefold. First, there must be a clear understanding between monetary and fiscal authorities as to whether there is to be a monetary relaxation to absorb some of the cost of the banking crash through the inflation tax. Under many if not most circumstances the answer will be no, but the point being made here is that additional and unnecessary problems will arise if the policy strategy of the fiscal and monetary authorities are inconsistent, as they will be if the government is counting on partial inflation tax financing, while the central bank has not paid out its nominal anchor.

Offset unintended effects of the restructuring on monetary conditions

Second, (and subject to the first point) as a general proposition, the monetary authorities should not allow the bank financial restructuring *per se* to affect aggregates that predict the evolution of inflation (or of the other target variables of monetary policy). To the extent that they are found to be affected by the restructuring, the central bank will need to take offsetting measures. An important distinction here is that, while the restructuring is focused on the affected banks, the monetary policy response is addressed to the equilibrium of the system as a whole.

For instance, a restructuring that leaves certain banks highly liquid (perhaps because the government has injected treasury bills) may result in a lowering of interbank interest rates, or an expansion of aggregate domestic credit, or in a depreciation of the currency. Any or all of these are likely to be among the most important indicators of monetary policy stance in the economy, and the central bank will need to act to offset these tendencies using the instruments available to it, which will vary depending on the development and sophistication of the money markets, but which could include open market sales, increasing the interest rate on standing facilities, increasing reserve requirements, or sales of foreign exchange into the market.

The point here is that the central bank needs to be vigilant so that it can take the needed offsetting action. A simple policy framework based on a model of demand and supply of base money would clearly point to a need for the central bank to offset any changes in the *supply* of base money that may have resulted from the restructuring, and this is the basic message to keep in mind.²⁵ But the real world is more complex and the task is not straightforward. In particular, some standard monetary policy indicators will have lost their traditional reliability (cf. Martinez Peria, 2000)

This is especially true of domestic credit. The financial restructuring will have resulted in a write-down of the total stock of performing credit. What is the "correct" rate at which credit should expand from the new low base? On the one hand the caution of banks "once-bitten" may lead to a continuing credit crunch driven by lack of lender confidence. On the other hand, a rapid recovery of credit aggregates to their former level may result in macroeconomic overheating.

²⁵ In a currency board system, the central bank's legal capacity to undertake such action will be limited. This places more of the onus on the fiscal authority to ensure that it does not destabilize monetary conditions through the design of the restructuring. In this way the currency board system inhibits the separability of policy for which we have been arguing.

Another example is when deposits which have been frozen due to the bank failure are released through the financial restructuring of the bank. Whether or not this is reflected in a jump in the measured money stock depends on the decision of statisticians at the time; but it may or may not be associated with an actual increase in spending that could threaten monetary policy goals. This situation needs to be assessed as it evolves.

There is no alternative here to a having a very clear and unambiguous definition of the goals of monetary policy. Only then can policy measures be adequately formulated and adapted to ensure that these goals are being met.

If the focus of monetary policy is on inflation, or on maintaining the exchange rate, then the central bank can devote its energies exclusively to achieving that goal by being prepared constantly to reevaluate and update the problematic causal linkages. Nowadays this is, after all, the normal practice of central banks.

Accommodate confidence-based shifts in money demand

A banking crisis is not just a question of accounting adjustments. There can also be strong shifts in depositor confidence. The classic example is Argentina in 1994-95, where the banking system suffered a deposit outflow equivalent to about one-fifth of the deposit base.²⁶ Once again a simple model based on demand and supply of base money suggests that the central bank should accommodate any shift in the *demand* for base money. Where the goal of monetary policy is inflation targeting this will be a useful starting point for the practical implementation of policy. In a fixed exchange rate regime the capacity of the central bank to deliver on this policy may be limited by its foreign exchange reserves, and in a currency board system the central bank law will also impose restrictions.

6. Conclusions

Many issues that should remain separate tend to be lumped together in considering how to recapitalize banks. We have attempted to show how the issues concerning banking, the budget and monetary stability can each be dealt with in a distinct manner.

Before anything else is done, the government must have a coherent medium-term fiscal strategy that determines broadly how the costs of the banking crisis are going to be absorbed. This is a pre-requisite.

After that, logically the first part to be got right is the banking aspect. The failed bank must be securely reestablished with enough capital and franchise value to move forward as a normal bank. We have shown that this will typically entail new financial instruments involving the government on both asset side and liability side of the bank's balance sheet. The bank should not be left with maturity, currency or repricing mismatches. Assets that

²⁶ For a detailed account and analysis see d'Amato et al. (1997).

are injected should be bankable and preferably negotiable. The liability structure should give the bank insiders the incentive to manage the bank prudently.

The sophistication and complexity of the financial instruments used can be considerable, but only if the government has the credibility to warrant market confidence that it will deliver on the contracts without attempting to use its law-making powers to renege *de facto*. We have seen that innovative use of segregated sinking funds and "Brady"-type bonds can help where government credibility is weak.

In the event of a systemic crisis, a menu or schedular approach can be more effective in bringing the private sector into play, and reducing the moral hazard and other drawbacks of a discretionary approach.

The government will be interested in recovering some of its investment as the bank returns to profitability and the impaired loan portfolio is liquidated, but the financing and investment aspects of the transaction should be kept distinct.

The restructuring of the bank will alter both the size and the maturity and other characteristics of the government's debt. Optimizing these aspects should be done separately, and with the market as a whole, rather than just with the affected banks.

While restructuring should be a fiscal matter, the central bank may often become drawn into it through inappropriate use of lender of last resort facilities. Accounting for the central bank's solvency support is rarely transparent, but should be.

The restructuring and the government's fiscal response can have marked effects on monetary stability. But these side-effects need not normally be taken into account by the supervisory/prudential or fiscal authorities, because ensuring that monetary conditions remain on target is the task of the monetary authority, and one for which it normally has enough systemic instruments at its disposal (though this may not be the case in a currency board regime). For instance it needs to offset unintended effects on the aggregate supply of liquidity, while probably accommodating shifts in liquidity demand.

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Recapitalizing Banking Systems: Fiscal, Monetary and Incentive Implications - Annexes

ANNEX 1: NOTES ON FIVE CONTRASTING CASES

A1 Attempting a Cash-free Recapitalization: Post-Tequila Mexico²⁷

The Tequila crisis of 1994-95 involved huge losses for Mexican banks leaving most of the major banks undercapitalized or insolvent, and an eventual fiscal cost now projected at almost 20 per cent of GDP.

The public vehicle used initially to alleviate the resulting liquidity and solvency problems was the existing Trust Fund for the Protection of Bank Savings (FOBAPROA), although this was wholly underfunded for the purpose (and also lacked adequate legal powers). From 1999 a new "Institute for the Protection of Bank Savings" (IPAB) took over the functions of bank resolution and of realizing the value of residual bank assets. IPAB has also been charged with establishing a formal and limited deposit guarantee scheme to replace the blanket deposit protection which had been implicit for years and became explicit during the crisis – importantly extending even to interbank deposits.

Financial support from Fobaproa

Fobaproa's financial support to the banking system came in a number of waves. The first wave did not have a clear subsidy element. These were a short-term dollar loan to meet banks' immediate requirements to repay foreign borrowings, and a Temporary Recapitalization Program (according to which the Bank of Mexico provided financing to the banks, who in turn issued Fobaproa with subordinated debentures). This wave was soon superseded by a three-prong program of bank intervention supplemented by a suite of debtor support programs²⁸

- A. Capitalization and Loan Purchase Program (CLPP): For solvent but undercapitalized banks conditional on new capital from shareholders (initially twelve banks accounting for 84 per cent of the total banking system)

Fobaproa matched each \$1 of capital injected by shareholders with a purchase at face value of the recoverable value on \$2 of loans (banks retained ownership and administration of the loans and indemnified Fobaproa against 25% of the residual losses²⁹). Payment was with long-term (ten-year) non-negotiable promissory notes with interest accrued at market-related rates (21 basis points below the Treasury Certificate Cetes rate) but not paid until maturity. The total amount of Fobaproa

²⁷ This note has benefited from conversations with Fernando Montes-Negret, and draws on World Bank Report No. P7347ME (November 1999). See also De Luna-Martinez (2000).

²⁸ The debtor support programs, which had the intended effect of improving the recoverability of bank loans, continue today (2003).

²⁹ Thus in effect, for each \$100 face value of loans involved, Fobaproa was promised $25+0.75r$, where r is the percentage recovery rate.

notes outstanding under this program at end-1999 was M\$ 157 billion (in round numbers US\$1 has been about M\$10 since 1998); these were held by five banks (Banamex, Bancomer, Banorte, BBV and Bital, then accounting between them for almost 60 per cent of the system).

- B. Financial Strengthening (Saneamiento) Program: For banks seen as potentially viable, but whose shareholders would not put up new capital. (initially twelve banks=12% of system).

Management of these banks was taken over and they were downsized and financially restructured. Again Fobaproa notes were injected into the banks' balance sheets to a total value (to mid-1999) of almost M\$ 200 billion; about half of these had a five-year maturity with interest at about 100 basis points above the interbank rate TIE payable quarterly, a small portion were one-year bullets and the remainder at ten-years maturity (interest rate accruing at the Cetes rate but not paid until maturity). This process remained incomplete and (as detailed below) further injections in excess of M\$ 200 billion were envisaged for the seven banks remaining in this program.

- C. Liquidation (eight banks, including some which migrated from Saneamiento status). As part of the downsizing of these banks, some branches were sold to healthier banks along with their liabilities backed by Fobaproa-guaranteed five-year interest-bearing notes. They also had interbank liabilities amounting to about M\$ 140 billion by end-1999, extended under cover of the blanket deposit guarantee.

By mid-1999, the estimated net fiscal cost of the financial support program (brought to net present value terms) had stabilized and was estimated at M\$ 873 billion, equivalent to 19.3 per cent of GDP. Of this amount, only about one-sixth (M\$ 141 billion) had by then actually been paid over by the fiscal authorities (mostly through the controversial and selective debtor support programs), though a further half or so were already recognized in the form of Fobaproa notes issued. At that stage, therefore, although the banking system's deposit liabilities were guaranteed, many banks remained technically insolvent and undercapitalized, and even those which had been able to replace their impaired loans with Fobaproa debt found that this debt was neither negotiable nor (in most cases) generating any cash flow. It is widely believed that this lack of financial autonomy was a main factor behind the protracted decline in the real value of credit outstanding during 1995-1999.

The IPAB initiative

It was against this background that IPAB was established in 1999, and moved to achieve a resolution of 15 banks then under intervention.

The two largest of these, Serfin and Bancrecer, were the third and fourth largest banks³⁰ in Mexico accounting for about 14 and 10 per cent of the system's liabilities respectively.

³⁰ After Banamex and Bancomer, each with about 20 per cent. Other banks with more than about 5 per cent of the market are Bital, with 9 per cent, and the foreign-owned banks Bilbao Vizcaya, Santander Mexicano and Citibank, each with about 5-6 per cent. After a wave of mergers in 2000-2, only five big banks

They were fully recapitalized and sold. Existing equity was written down to zero in both banks.

- IPAB acquired substantially all of the shares in Serfin by injecting a one-year bullet bond of M\$ 21 billion, bringing to M\$ 126 billion the total assistance projected for Serfin's restructuring (Serfin's former owners had a right to match Serfin's capital injection, but did not exercise it). It was subsequently acquired (in 2002) by the Spanish bank Santander.
- Borrowing from the Bank of Mexico, IPAB subscribed Bancrecer's new equity in an amount of M\$ 102 billion. This bank was put up for sale in mid-2001 and acquired by the local banking group Banorte.

Several smaller banks which remained operational though under intervention (Atlantico, Promex and Inverlat), were absorbed, following further bond injections by IPAB, by a larger bank (respectively Bital, Bancomer and Bank of Nova Scotia). There were other sales and liquidations of small institutions.

By 2003, however, the Central Bank, as a trustee of Fobaproa, was seeking detailed information concerning loans that had been transferred from several of the major banks to Fobaproa, amid suggestions that there may have been fraud involved and that some of the loans (perhaps \$2 billion worth) were wrongfully transferred because they were in default well before the crisis and as such not eligible for the bail-out. Four of the remaining five large banks are concerned (Banamex, Bancomer, Bital and Banorte); at this stage they held Fobaproa obligations in the amount of M\$ 212 billion in their balance sheets in lieu of the transferred loans, had been expecting to have these exchanged for marketable IPAB debt, but that may now be deferred.

A particular concern for the future is to ensure that IPAB has the cash to meet the obligations it has undertaken, and continues to undertake. As already noted, Fobaproa had relied heavily on non-cash solutions and on non-negotiable paper, but IPAB also injected shorter term bonds (as in the Serfin case), and also had to assume the interbank obligations of the banks being liquidated. It later effectively converted some of the longer-term non-negotiable bullet notes into more liquid instruments.

Borrowing by IPAB in the market can generate cash, but these liabilities will in turn have to be serviced. The deposit insurance premia, and projected proceeds from asset sales will not be enough,³¹ and it is acknowledged that there will have to be budgetary transfers. Although IPAB bonds are not government guaranteed, arrangements have been made, and renewed each fiscal year, for the Bank of Mexico to automatically debit the government accounts to service IPAB's marketable obligations if IPAB is unable to do so.

remained: Banamex, controlled by Citi; Bancomer, controlled by Spain's BBVA; Bital, controlled by HSBC; Serfin, now controlled by Santander; and Banorte, still majority-owned by Mexicans.

³¹ The projected recovery rate is only about 20 per cent.

Remarks

Gradually, the essential elements of the Mexican bank resolution fell into place. Banks remained undercapitalized for several years relative to strict Basel requirements,³² but in due course there were substantial injections of private equity capital, mostly by foreign banking groups, which controlled 82 per cent of the system by 2003. The bonds and loans injected into the banks by Fobaproa and IPAB were not fully certain, nor marketable, and this may have contributed to the much-discussed credit crunch which ensued for several years, until about 2000-1. However, other factors, such as a heightened awareness of the legal difficulties of loan recovery (addressed by legislation enacted in 2000 and 2003) will also have been important as will the lack of capital..

But the lengthy process undergone so far has revealed several of the pitfalls of financial restructuring of banks, including lack of budgetary transparency, insufficient authority and funding for the agency charged with bank resolution, the use of illiquid never-never bonds contributing to a credit crunch, and prolonged periods of unresolved intervention of insolvent or undercapitalized banks.

³² The need to tighten bank accounting definitions and practices, especially in regard to items that can be counted towards Tier 1 capital and in regard to required provisioning, has long been recognized in Mexico and has been in progress for some years now.

A2 Recapitalizing the Thai Banking System 1997-1999³³

The methods adopted to recapitalize the Thai banking system following the crisis of 1997 are of considerable interest because of their diversity in the context of a fairly sophisticated financial system. After the initial intervention in 58 finance companies in May 1997,³⁴ the Thai approach to resolving the banking system problems was a gradualist one, which is not yet fully accomplished.

The scale of the problem was very large, both for individual banks, as a share of the total banking assets, and in proportion to GDP. Overall fiscal costs of the resolution have been put at approximately 33 per cent of GDP. First in line for assisting the failing institutions was the Financial Institutions Development Fund, a distinct legal entity under the Bank of Thailand (BOT), which borrowed short-term from the BOT and from stronger banks, to finance its lending to the weak. At June 1998, the government announced its intention to fund FIDF borrowings with substantial foreign and domestic borrowing (amounting eventually to \$12.5 billion) at long-term.³⁵

With the volume of non-performing loans growing alarmingly to almost 50 per cent of the total loan portfolio,³⁶ the Bank of Thailand began (from March 1998) requiring a more detailed loan classification procedure with stated percentage provisioning requirements for normal, specially mentioned, sub-standard, doubtful and loss categories.³⁷ The banks were allowed until end-2000 to reach these required provisions (but had to reach one-fifth by end-1998 and an additional one-fifth by the end of each subsequent semester). This represented a considerable degree of forbearance, considering how under-provisioned the banks were by early-1998.

The forbearance allowed a window for raising capital, during which banks which considered their franchise to be sufficiently valuable did so. However, six small or medium-sized banks were intervened on August 14, 1998, a key date when the authorities (Bank of Thailand and Ministry of Finance jointly) also announced a general offer of financial assistance to help recapitalize banks. This offer had two main elements.

- First, banks with insufficient capital (i.e. which would have insufficient primary (Tier 1) capital when the full required provisions were taken) were eligible for an injection of tradable³⁸ ten-year fixed interest³⁹ government bonds in return for non-cumulative preference shares in the bank. The rate of dividend was to be the same as

³³ This note draws heavily on factual material in the EAP website.

³⁴ Of which 56 were subsequently put into liquidation.

³⁵ At the time, Minister of Finance Tarrin was reported as describing the FIDF as "a monster that sucks away most of the financial system's liquidity".

³⁶ They peaked in May 1999 at Baht 2.7 trillion, or about \$75 billion. The bulk of these non-performing loans had by then migrated to "loss" status.

³⁷ The percentages are 1, 2, 10, 50 and 100, and applied to the amounts outstanding net of collateral (to which a "haircut" is applied).

³⁸ But it was specified that the Bank of Thailand could not hold these bonds.

³⁹ The interest rate fixed at 100 basis points below the one-year (*sic*) deposit rate of the five largest Thai banks current at the time of the transaction.

the dividend on common stock, or 100 basis points above that on the bond, which ever was the lesser. The preference shares carried equal voting rights with common stock, and were convertible to common stock at the holder's option.⁴⁰ (The full amount of the required provisions had to be taken first, though, effectively writing-down the existing shareholders' capital.) The government was prepared to inject enough funds to bring capital up to 2.5%. Thereafter further injections had to be equally matched by an injection of funds by private shareholders.

- Second, banks were offered ten-year *non-tradable* bonds in return for bank debentures (which would count as Tier 2 capital). This scheme was designed to encourage (i) debt forgiveness in corporate restructuring involving write-downs beyond required provisioning and (ii) new lending. With the interest on debenture set at 100 basis points above that on the bond, this scheme did not offer much if anything in the way of net present value.

Setting aside the problems of non-bank finance houses,⁴¹ we can identify four distinct major thrusts to the financial restructuring of the banks.⁴²

- Intervention (6 banks: Bangkok Metropolitan Bank, First Bangkok City Bank, Siam City Bank, Bangkok Bank of Commerce and two others).
These banks were deemed insolvent; all had heavy indebtedness to FIDF. They were to be either liquidated, partly folded into State-owned banks including the large Krung Thai Bank, or restructured (with FIDF swapping its debt claims for equity) and sold.
- Seek government aid (Initially 3 banks: Siam Commercial, Thai Military and Nakornthon; subsequently others, through the "August 14" scheme - though take-up of the government's "August 14" menu has been much lower than budgeted.
In October 1999, the FIDF, which by then held 99 per cent of the capital, sold a majority stake in Nakornthon, to Standard Chartered Bank; FIDF recovered more than its initial injection in this transaction, but it pledged to compensate the new shareholders for a certain proportion of the recovery shortfall on part of the loan portfolio.
- Issue equity to strategic investors
Four major banks sold substantial shares to foreign partners:

⁴⁰ They could also be sold by the government, but the other shareholders had a right of first refusal.

⁴¹ A newly established Financial Sector Restructuring Agency (FSRA) was established to oversee the liquidation or rehabilitation of these entities. The assets were auctioned off, with an eventual recovery rate of only about 25%. An active purchaser here was the newly established state-owned Asset Management Company, described (by the Chair of the FSRA) as a "purchaser of last resort". It is financed by unguaranteed borrowing from the market.

⁴² The relative size of different sources of Tier 1 recapitalization by late 1999 is as follows: (i) the Government injected approximately B 362 billion into six State-owned banks; (ii) Seven private banks received B 38 billion through the Government's "August 14" program, and B 282 billion from the market (of which innovative instruments: about B 116b). By then, market observers believed that private banks had raised about 85 per cent of the capital deficiency, but state-owned banks had raised only about 40 per cent of what would ultimately be needed. (Source: EAP quarterly update, Dec 99)

- Bangkok Bank: 49% ; Thai Farmers Bank (49% to Singapore Development Corporation); Thai Danu (majority acquired by Development Bank of Singapore); Bank of Asia (majority acquired by ABN Amro).
- Sell special preferred-share-like capital instruments

Three major banks (Bangkok Bank, Thai Farmers Bank and Bank of Ayudhya) raised substantial Tier 1 capital from public offerings of innovative capital instruments variously termed Stapled Limited Interest Preferred Securities (SLIPs) or Capital Augmented Preferred Shares (CAPs). These are compound securities which are partly eligible as Tier 1 capital (the preferred share element), but also offer the investor a relatively high interest yield ranking as a subordinated debenture. For instance, in one case the debenture interest was 11 per cent of the total amount invested, with a further 11 per cent available from the preference dividend, if paid. These were attractive to local investors, including special purpose unit trusts which were established to invest in such instruments.

In addition, some fiscal incentives were offered for the creation of bank-specific asset management companies (AMCs) with the objective of isolating the process of restructuring and realizing the bulk of a bank's bad debts. By early 2000, only one bank (Thai Farmers) had established an AMC.

Remarks

Critics have complained about the slow progress in achieving target recapitalization and in disposing of the non-performing assets. Certainly the phase of capital forbearance has been a lengthy one. Some of the initiatives offered by the authorities proved unattractive to the market, given the alternative of forbearance, as a result, government bonds placed directly in the portfolio of failed banks represent a smaller portion of the solution here than elsewhere (liquidity lending from the Bank of Thailand -- later funded by government market borrowing at home and abroad, and subsequently converted into equity claims on the failed banks -- was the more important mechanism).

The quality qua-capital of the substantial funds that have been raised with the new innovative capital instruments has been debated. Yet the system as it is emerging does seem to have changed its character: foreign ownership is quite extensive, and the old family structures have retreated into the background, to the extent that they are present at all.

A3 Post-Tequila Bank Resolution Approaches in Argentina

The liquidation of several Argentine banks in the 1995 Tequila crisis highlighted gaps in the legislative and institutional framework for dealing with bank failure: no explicit deposit insurance, no way for the central bank to intervene and restructure a licensed bank, no procedure or funding for government financial assistance to a restructured bank.

The three initiatives of early 1995 (for a detailed account see de la Torre, 2000, on which this note draws heavily) addressed these gaps. Subsequent bank restructurings in particular relied on financial engineering involving the establishment of a Deposit Insurance Company (SEDESA) and Fund (FGD) – which rely for funding wholly on levies made on the banks – and the temporary state-backed Bank Capitalization Trust Fund (FFCB) – which pitched in supplementary resources.

In most of the nineteen bank resolutions from mid-1995 to mid-1999 (documented by de la Torre), the bulk of the assets and liabilities (including all of the deposits - and not just insured deposits) of the failing were acquired by other banks, together with a topping-up of resources from the FGD and/or the FFCB.⁴³ In just three cases, the transfer of deposits to the acquiring banks was only partial.

Total assistance amounted to \$ 0.7 billion from FGD and \$ 0.4 billion from FFCB, for a total of \$1.1 billion - about 0.3 per cent of GDP, but between 1 and 2 per cent of M2. (Note that this does not include the deficiency of provincial and other banks that failed in the early stages of the Tequila crisis).

For one 1998 case (Almafuerte Bank), an innovative approach was adopted to the handling of the impaired loan portfolio. Instead of transferring ownership of this portfolio to the acquiring banks, along with additional cash and perhaps put-back options, the portfolio was securitized through a trust structure. Three tranches were created, with the acquiring banks⁴⁴ receiving the top (senior) tranche, the central bank accepting the second tranche in return for collateral it held against liquidity loans that had been made to the failing bank, and the remaining (junior) tranche going to the FGD in return for its promissory note to the acquiring bank for the difference between the value of the deposits transferred and the value of their (top tranche) bonds. The portfolio itself was managed by the acquiring banks for a fee.

The advantages seen for this approach included (i) the speed with which it could be accomplished (over a weekend), without a lengthy process of asset evaluation during which the bank would, like others, have had to remain closed; and (ii) access for the acquirer to potentially liquid securities even though neither the FGD nor the central bank

⁴³ The FFCB's assistance was in the form of long-term loans either on a collateralized basis, or convertible into negotiable instruments. It was funded by budgetary transfers which were in turn covered by a special government bond issue, and by earmarked loans from multilateral agencies.

⁴⁴ In this, as in other cases, there were many acquiring banks, with the assignment of the failing bank's assets and liabilities being based on geographical considerations.

had any cash to put in.⁴⁵ There are also a number of drawbacks. The FGD absorbs the residual loss, but has little control over the loan recovery process; although it determined that this would be a lower cost approach than liquidating and paying-off insured depositors, it would be extremely hard for such a determination to be made with any confidence, especially given the speed with the transaction was accomplished.

The securitization approach nevertheless represents an example of how innovative financial engineering can overcome some of the obstacles to speedy and effective restructuring of the banking system. Going forward, the acquiring banks appeared to obtain liquidity and certainty; they also obtained the franchise value of the ongoing business at no cost.

These features could be built upon for future cases:

- while the FGD was here the bearer of the residual risk, it could be possible to sell this risk to a risk-accepting investment fund at the time of the initial transaction.
- the loan recovery process could be endowed with better incentive characteristics.
- some of the franchise value might be realized in the initial deal for the benefit of the FGD.

The eventual work-out of the Almafuerite case was affected by some subsequent financial engineering, and especially by the economic distress of 2000-3 (discussed further below), which greatly reduced the recoverability of the delinquent loans. (Note, however, that the Almafuerite trust was pesified at par one-to-one, and not asymmetrically). From a position at November 1998 where the trust held a nominal amount of \$231 million, against which provisions of \$103 million had been made, the net assets of the fund at end-2001 (after provisioning) had fallen to \$32 million. At this stage, however, the original holders of the senior tranche certificates (the banks) had already reduced their exposure to the fund by swapping their trust certificates for government bonds in a special deal. It appears that this deal may have effectively re-ordered the priority of the certificates,⁴⁶ as it is understood that the remaining assets of the Trust will now go to repay the Central Bank as holder of the middle tranche, with any remainder being available to repay FGD.⁴⁷

Post December 2001

The debt default and exchange rate crisis of December 2001 created financial restructuring issues for the banking system which are only now beginning to be resolved. In addition to the economic downturn which contributed to, and was exacerbated by, the

⁴⁵ The FGD because its cash resources have been depleted, the central bank because of the convertibility plan/currency board rules.

⁴⁶ Apparently to the disadvantage of the central government. A feature of all such deals is an enthusiasm for one of the parties to attempt to renegotiate at leisure features of the initial deal which are beginning to seem disadvantageous.

⁴⁷ A somewhat similar trust arrangement, relating to the Banco Israelita de Cordoba (January 1999), showed rather better results, the participating banks recovering more than 90% of the trust in two years using as a complement a liquidity fund that was later dissolved. In this case SEDESA also recovered some of its stake.

debt default and exchange rate crisis, asymmetric de-dollarization had a severe effect on bank solvency. In brief, foreign-currency denominated bank loans and deposits were compulsorily converted into local currency at different rates: deposits at US\$1=ARP 1.40, loans at US\$1=ARP 1. Bank deposits were also frozen. Depositors holding frozen deposits were allowed in mid-2002 to exchange them for partly negotiable Boden bonds.⁴⁸ The outgoing government announced a complete unfreezing of remaining deposits in early 2003. In this case, a degree of price-indexing was applied to the conversion ratio (so that, for example, the effective conversion rate in June 2003 was 2.05 rather than 1.40) and in addition, the government issued more Boden bonds in respect of all or most of the remaining difference conversion and market between 2.05. (Oxford Analytica).

Banks also received ARP 7.8 billion of BODENS bonds in 2002 to compensate them for the asymmetric dedollarization, but this fell short of what would be needed to make up for the indexation of assets and liabilities at unequal rates ARP 3.8 billion, and for court rulings allowing the withdrawal of dollar-denominated deposits at free market rates, which totalled 11.6 billion pesos in 2002 (ARP 5.1 billion) (source: Oxford Analytica). Discussions were thus under way in 2003 for an injection of further substantial funds, probably also in the form of long-term bonds, into the banks. Banks had also received liquidity loans (technically repos) from the BCRA during the crisis, and these were being rescheduled out to a ten-year maturity in 2003, though final agreement had not yet been reached. The establishment in mid-2003 of a restructuring entity Unidad de Reestructuración del Sistema Financiero (URSF) was to be a central element of this effort, which could also entail the privatization or restrictions on the activities of state-owned banks.

⁴⁸ These bonds were partly negotiable (could be used to settle debts, buy cars and machinery, settle tax arrears, construct real estate and place in trust for investment projects (Ministry of Finance statement). BODENS issued in 2002 as an option for locked-in depositors had maturity 2012 in the case of former dollar depositors; 2007 in the case of peso depositors and 2005 in the case of older depositors and the holders of small deposits. BODENS issued in 2003 to compensate unfrozen dollar depositors for the loss of purchasing power had maturity 2013. The yields on these bonds were all somewhat below market, so that immediate liquidation involved a loss of market value. Total BODENS bonds outstanding in June 2003 amounted to US\$27.6 billion – mostly the longer maturities. BODENS could also be used for Deposits were also securitized into “CEDROS” which were tradable in the stock exchange.

A4 The use of bonds in recapitalization of Bulgarian banks⁴⁹

Dominated by the state-owned Bulbank (heavily involved in foreign trade finance) and the State-Savings Bank (SSB), the Bulgarian banking system in the early 1990s also comprised several other medium-sized state-owned banks and an emerging fringe of private banks. During the following several years, the system suffered two waves of severe collapse. The first of these was resolved through the injection of government bonds into the affected state-owned banks. Bonds were also used in the second phase, though here the real value of the deposit liabilities was substantially wiped-out by inflation and currency collapse. By the end of the decade the surviving banks were being prepared for privatization, or had already been privatized, including the arrival of foreign owners for several significant institutions.

The first wave - Zunks

Already in the early 1990s, following the collapse of the planned economy, the Government had to act to recapitalize state-owned banks by substituting, for unrecoverable loans to insolvent state-owned enterprises, its own long-term bonds in the balance sheet of certain state-owned banks.

In this first wave⁵⁰, two issues of 25-year "Zunk" bonds were made, one in local currency and the other in US dollars in late 1993-early 1994. These were used to recapitalize certain state-owned banks by being substituted for unrecoverable loans to insolvent state-owned enterprises.⁵¹

The Zunk bonds were to be repaid in 20 equal annual instalments after a five-year grace period; the US dollar issue, of which \$680 million remained outstanding at end-April 1999, carries LIBOR interest (paid semi-annually); the BGL issue, of which BGL 8.8 million remained outstanding at the same date, has paid a semi-annual coupon rate starting well below market rates, but scheduled to rise over the years to the "basic interest rate" (yield on new bill issues); for 1999, the interest had reached two-thirds of the basic interest rate. Also in the first wave were some additional local currency bonds, not called Zunk, with initial maturities varying from 7 to 25 years.⁵²

As mentioned, the BGL bonds carried below-market interest, and although the dollar issue pays LIBOR, one has to recognize that Bulgarian government dollar-denominated debt yields much more than LIBOR. As such, these bonds have not been trading at par: falling as low as 42 per cent of par (April 1997). Valuing them in the banks' balance sheet at par was a rather dubious practice.

⁴⁹ This note benefited from useful discussions with Esen Ulgenerk and Leila Zlaoui.

⁵⁰ There was additionally an earlier limited transformation of bank claims on State-owned enterprises into public debt in 1991.

⁵¹ All loans extended to State-owned enterprises before end-1990 and in arrears of more than 180 days were replaced with government securities.

⁵² The total amount of these additional first-wave bonds was BGL 16 million. Most of these carried either the local interbank rate, or 100 basis points more.

Until early 1997, there was a floor (~90) on the price used in transactions involving Zunks. Nevertheless, the fact that Zunks' market value is lower has been implicitly or explicitly recognized in some of the special operations that have subsequently been carried out involving Zunks and banks:

- (i) \$824 million of Zunks owned by the (medium-sized) Mineral and Economic banks were converted at or close to par in May 1995 into short-term BGL-denominated securities at market rate and used to extinguish the debts of these banks to the Central Bank (BNB) and the SSB.
- (ii) Seven state-owned banks were recapitalized in May 1996 in a scheme involving Zunks. Zunks with a face value of \$400 million were bought from Bulbank by the State Fund for Reconstruction and Development (SFRD), for \$180 million (*representing a 55% discount*). Most of the proceeds of this were placed on deposit by Bulbank at the BNB (to prevent depletion of official reserves). The Zunks were given *without any consideration (i.e. payment)* from SFRD to the Bank Consolidation Company (BCC), which in turn transferred them to individual state-owned banks to increase their capital as needed.
- (iii) BNB made outright purchases of Zunks in September 1996 to provide liquidity to banks in difficulty (Note this is only a small part of the liquidity extended by BNB in this crisis year).

Zunks were tradable. Under certain conditions they were accepted *at par* in purchase of some of the state assets being privatized. Over two-thirds (approximately BGL 20 million) of the local currency Zunks and rather less than a quarter (about \$200 million) of the dollar Zunks had, by 1999, been cashed-in in for privatization.

The holders at end-April 1999 of US dollar denominated Zunks were Government-owned banks (30%), local private banks (21%), local nonbank financial institutions, companies and households (39%) and foreign investors (11%).

The second wave

The crisis of 1996-97 triggered a second wave of fiscal impact from the banking sector. The *de facto* liberalization of bank entry after 1989 had seen the emergence of dozens of banks, many of which had been operated in an unsound manner, to say the least. (In addition, unregulated quasi-banks attracted significant sums from naïve savers in the same period). Some of the large state-owned banks also made imprudent loans in the early 1990s, including interbank loans to unsound institutions. The banking and currency crisis of 1996-97 was marked by depositor runs on many of the banks and on the currency. By February 1997, the BGL had collapsed to 2.387 to the dollar, from 0.081 just ten months before. Although it recovered to 1.546 in April 1997, this was still one-twentieth of its dollar value of a year prior.

During this crisis seventeen banks, including the largest private bank (First Private⁵³), were closed and placed in liquidation.⁵⁴ During the crisis the government introduced a

⁵³ Then comparable in size to the third largest public bank (UBB).

deposit guarantee, at first rather limited, but then extended to cover all household deposits in full, and enterprise deposits as to 50 per cent. These covered deposit liabilities were transferred to continuing banks, and matched in these banks' accounts by newly created special Government securities.⁵⁵ The total of these new stocks issued 1996-99 amounted to over 2 per cent of GDP (significant additional quasi-subsidies were provided to recapitalize the banking system during 1996).⁵⁶

Despite the compensation, and despite high deposit interest rates prevailing throughout, depositors lost heavily in real terms through the 1996-97 crisis. The US dollar value of a BGL time deposit, including accumulated interest, declined during the crisis to about one-tenth of its initial value, before recovering to less than one-sixth by the end of the crisis. Thus, appreciable though it was, the fiscal cost of 1996-97 crisis was only a fraction of the depositor loss. Furthermore, the Government remains a creditor in the liquidation of the closed banks, standing in the place of the compensated depositors, and will recover some fraction of its outlay.

Remarks

The realization of large capital gains and losses as a result of massive currency depreciation, the ambiguity of valuing non-tradable government bonds where there is a

⁵⁴ In mid-1997, the government moved to liquidate some 150 SOEs and to place 71 others in an "isolation" program preventing their access to further bank credit while they were being rehabilitated, privatized or liquidated. The isolation program was due to end at mid-1999.

⁵⁵ The new securities were tradable only between banks, but have a shorter maturity than the Zunks - seven years for BGL-denominated and three years for US dollar denominated. They carry a floating yield equivalent to the Bulgarian "basic rate" (auction rate at the weekly primary auction of Treasury bills), or at LIBOR+2 for the US dollar denominated issues). The first such securities were redeemed in mid-June 1999, partly in cash, and partly with new issues, including some denominated in euro.

⁵⁶ It has been estimated by the IMF that, in the past decade, Government bail-outs of the banking system have added 35 percentage points to the public debt to GDP ratio, although by 1998, the aggregate value of these bonds (the largest part of which are the US\$-denominated "Zunk" bonds) had been reduced through inflation and the use of bonds in privatization to about 7 per cent of GDP.

high default premium on sovereign debt and the lack of transparency of mandatory transactions in Zunk bonds at false prices between state-owned entities were among the less attractive features of the financial engineering surrounding the Bulgarian recapitalizations. They illustrate some of the pitfalls as well as the temptations of the use of financial engineering. On the other hand there were positive features: some attempt was continuously made to maintain some degree of positive capitalization in the banking system in the face of adverse circumstances, and the introduction of Zunk bonds did help begin to establish a local bond market. Starting now from a much smaller base, with a solid currency regime (a currency board using a DM/euro peg), with profit-driven private ownership free from political pressures to depart from principles of prudent banking, and with extensive foreign ownership of the system, the third new start for the Bulgarian banking system promises to be more successful and enduring than the previous two.

A5 Cameroon - enhancing government credibility

As in most other CFA countries, the largest banks in Cameroon until the late 1980s were the affiliates of the four French-based banking groups with an interest in the region: Credit Lyonnais (SCB), Banque Internationale de l'Afrique de l'Ouest (the former colonial bank of issue) (BIAOC), and consortia headed by Societe Generale (SGBC) and by Banque Nationale de Paris (BICIC). Between them these four accounted for some three quarters of bank credit. Varying through this period, about eight to ten other banks were also present, of which the largest were the affiliates of the (now notorious) BCCI, of Paribas, and of the Zambian-based Meridien group, the national development bank BCD (which did accept deposits) and Cambank, based in the English-speaking region.

Already by 1988 serious problems were evident, with tight liquidity inhibiting routine deposit withdrawals from most banks, and with four banks having closed their doors. Interestingly, each of the four major regions of the country (the coast, the English-speaking uplands, the Yaounde area and the North) represented the main area of activity of one of these four early failures (SCB, BCD, Paribas and Cambank). Considerable deposits were lost or frozen. The CFA 200 million in claims of the BCEAO on these banks were assumed by the government and consolidated at concessional rates (3 per cent per annum over 15 years with an initial grace period).

Analysis of the delinquent loan portfolio of the early bank failures suggested no specific concentration of bad borrowers (over 40,000 small loans were bad), but a generally insouciant attitude to credit discipline, and loans granted without sufficient regard to the issue of repayment. Admittedly, the economic downturn associated with export product price declines had already begun, but the problem of government arrears had not yet mushroomed to the level it subsequently reached.

The international collapse of the BIAO group during 1990, of BCCI in 1992 and of the Meridien group⁵⁷ in 1995 were only part of the worsening external and internal situation through the early 1990s, which led to a drastic curtailment of liquidity so that depositors were able to access their deposits either not at all, or with varying degrees of ease. Public enterprises and bodies failed to service their loans, government arrears to suppliers and employees had a knock-on effect on their loan servicing also.⁵⁸ Using the vehicle of a debt recovery agency Société de Recouvrement des Créances (SRC), much of the non-performing portfolios were replaced by government obligations in a successive rounds of restructuring. (The SRC was not at first conspicuously successful in recovery: by mid-1994 it had recovered only 3 per cent of sums with face value of CFA 640 billion which had been transferred to it)⁵⁹. The foreign partners also injected capital, sometimes using debt-equity swaps in the international secondary market for Cameroon debt as a low-cost

⁵⁷Which had added some of the BIAOC's balance sheet to its own pre-existing Cameroon operations in 1991.

⁵⁸At October 1995, Government arrears to the Commercial banks were estimated at CFA 200 billion, out of total Government arrears of CFA 1300 billion, or about 30 per cent of GDP. In 1993, Cameroon GDP was about CFA 3300 billion. Until early 1994, CFA50=FRF1; thereafter CFA100=FRF1.

⁵⁹Note however that less than half of the 640 represented loans; the remainder included suspense accounts and other items.

way of doing so. But the government was unwilling to allow the staff layoffs that would have been necessary to bring the banks' finances back on an even keel, and most of the banks slipped back into illiquidity and insolvency. Under these circumstances BNP, which had held a 36 per cent share of BICIC - then the largest bank - ceded its shares to the Government and pulled out in September 1994, after which BICIC suffered deposit runs and eventually failed.

By that stage, although the devaluation had resulted in a reflow of funds that greatly eased bank liquidity, only two banks were considered solvent and were trading profitably: the small private bank CCEI, and the restructured SCB (now called SCB-CL), which had been recapitalized on terms very advantageous to Credit Lyonnais. The problem was not only failure of the government to pay promptly on its own indebtedness (some of it assumed as part of restructuring as mentioned, but also the high share of non-performing loans to private borrowers - varying between 39 per cent and 61 per cent at four of the larger banks. In 1995, a new round of restructuring began, designed to place the surviving banks on a firm financial basis with adequate capitalization. A further tranche of bad assets was carved out and passed to the SRC, replaced with government obligations.

In terms of loss allocation, three contrasting approaches were employed in different cases: (a) absorption of past losses by existing shareholders at the prorata of their participation in the capital and recapitalization by the private partner (Societe Generale, Standard Chartered); (b) split of a failed bank into a healthy one and a liquidation structure (BICEC/BICIC); and (c) outright liquidation of banks with losses to depositors, who are reimbursed out of loan recoveries with preference given to small depositors, (Credit Agricole, Meridien bank).

In response to a perception that institutional strengthening was needed, the governance structure of the SRC has been reformed. Under the new structure, 40% of Board members are from the private sector and the general manager⁶⁰ and his deputy are appointed by the Board (requires a two-third majority). Recoveries increased to 18 billion in fiscal 1998 and 16 billion in fiscal 1999. In a further policy reform delinquent borrowers are forbidden by a Ministry of Finance regulation to obtain further bank credit or to participate in bids for public procurement and privatizations.

Against a history of government arrears, an important initiative in 1998-99 was the securitization of claims by four banks on the Cameroon state totalling CFA 164 billion (arising out of the restructuring).⁶¹ One half of these claims were converted into bonds with maturities from 4½ to 12 years; the other half into bonds with a maturity of 30 years. All of the bonds carry a variable interest rate equal to the banks' cost of funds plus 1.25%. The first tranche is secured by an escrow account (compte sequestre) at the BEAC into which are deposited certain earmarked fiscal receipts. The remainder is backed by a 30-

⁶⁰ An expatriate adviser to the general manager specializing in loan recovery has been appointed.

⁶¹ The banks were: BICEC (established in 1997 to take over assets and liabilities of the failed BICIC); SBC-CLC; SGBC; and SCBC.

year zero-coupon bond of the Government of France which was acquired and pledged by the Government of Cameroon in early 1999.

The long-drawn-out Cameroon banking crisis has had complex causes and easy solutions are not at hand. By applying standard financial engineering devices for credit-enhancement in a somewhat unusual setting, the recent securitization of the restructured banks' claims on the government offers some prospect of making these securities bankable. In this way, there may be some prospect of overcoming the perennial problem of government arrears that has plagued banking in this part of the world.

Indeed, observers now report that the Cameroon banking system restructuring is being seen as a conspicuous success, with all large banks solvent (several with more than 8 per cent capital even on an unweighted basis), liquid and profitable. With the privatization of BICEC, all banks are now majority privately-owned, and there has been new entry with the arrival of Citibank and Ecobank (an international African bank with headquarters in Togo, as well as two locally-owned banks.

ANNEX 2: ILLUSTRATIVE BALANCE SHEETS DURING A RECAPITALIZATION

In this Annex, we work through a simple balance sheet of a bank being constructed from some of the assets and liabilities of a failed bank. We start from the position where the asset portfolio has been cleaned up and revalued, and the amount of deposits to be kept on the books has been decided. In other words, Any of the non-performing advances and depositor claims that are not going to be left on the balance sheet of the bank going forward have now been removed, and the entity awaits its capital injection.

For this example, we take a general-purpose classification representing the bank's balance sheet in simplified form as: $A+B=C+D$ where A is advances, B is securities (Bills and Bonds), C is capital and D the deposits that are to be honored by the recapitalized bank. (Table 1). B may be subdivided into BS (short-term, bills) and BL (long-term, bonds) (Table 2).

Table 1: *Simplified balance sheet structure*

<i>Assets</i>	<i>Liabilities</i>
Securities (B)	Deposits (D)
Advances (A)	Capital items (C)

Table 2: *Slightly amplified balance sheet*

<i>Assets</i>	<i>Liabilities</i>
Liquid Assets (BS)	Deposits (D)
Investments (BL)	Govt. capital claims (C^G)
Advances (A)	Shareholder's funds (C^P)

As with any balance sheet, it is important to be aware of the conventions that are being followed. For our simplified analytical view, it is most useful to use the following conventions (which are not too far from those followed by best practice under IAS:

Take B to be valued at current market value since, at the time of recapitalization, the current market value of marketable securities is known.

The deposits D can be valued at par, considering that they are to be honored.

There is some uncertainty about the net recoverable value of the advances, even if some of the worst performing ones have been removed before the recapitalization. Nevertheless, an expected value of the net recoverable value A can be calculated.

This approach allows the value of capital to be deduced as a residual:

$$C = A + B - D.$$

Note that this accounting approach does not give any credit for the franchise value of the bank's business. As such the true value of all the non-deposit claims may be higher than C .

The minimum capital requirement is, however, based on accounting capital and can be written:

$$C \geq gA$$

Now consider the situation just before the injection of capital. Identifying this initial (pre-recapitalization) values by a subscript 0 , the initial capital deficiency (relative to the regulatory minimum of capital is $gA_0 - C_0$. Suppose now that the government and new shareholders inject

additional securities $?B^G$ and $?B^P$. Then, if post-injection values are denoted by subscript I , we have $B_1=B_0+?B^G+?B^P$, and $C_1=C_0+?B^G+?B^P$. Sufficient capital has been injected if:

$$\Delta B^G + \Delta B^P \geq gA_0 - C_0.$$

The new capital stock $C_1 = A + B_1 - D$ can be divided into capital-type claims by government C^G (for example in the form of preferred shares or other subordinated claims as discussed in the text), and those of the private shareholders C^P . In order to induce investment by private shareholders, it is unlikely that C^G can be set much higher than $?B^G - C_0$. In words, the government will only be able to get a share in the bank's capital to the extent that it injects bonds to a value greater than the initial negative net worth of the bank. The design of the government's claim can be such as to give the government an important share of any subsequent revision in the estimated recovery value of advances A .

Table 3: *Illustrative Numerical Example*

(a) pre-recapitalization

<i>Assets</i>		<i>Liabilities</i>	
BS_0	0	D	100
BL_0	0	C^G_0	0
A_0	80	C^P_0 (residual)	-20

(b) Immediate post-recapitalization

<i>Assets</i>		<i>Liabilities</i>	
BS_1	6	D	100
BL_1	23	C^G_1	3
A_1	80	C^P_1 (residual)	6

(c) New equilibrium

<i>Assets</i>		<i>Liabilities</i>	
BS_2	12	D	100
BL_2	0	C^G_2	3
A_2	97	C^P_2 (residual)	6

After the injection of marketable funds, the bank's management will adjust the structure of its portfolio based on the objective of maximizing franchise value. This will typically involve an increase in the lending portfolio, where there is greater franchise value than in the portfolio of securities; and the securities portfolio will move to a shorter maturity consistent with its function of retaining a liquidity cushion. Thus there may be an increase both in BS/BL and in A/B . Another way of thinking of this is to observe that, to the extent that the bonds are being injected to compensate for a write-down in A , it is likely that the ratio A_1/B_1 is below the desired level. Therefore the final structure of the bank's portfolio will involve sale of bonds and expansion of advances. It is this adjustment that monetary policy action may need to offset.

Table 3 illustrates the kind of structures we have been describing. Pre-recapitalization we have a bank with net recoverable advances of only 80, and deposits of 100. Thus by subtraction we deduce that accounting capital is *negative* 20. Government then injects bonds to the value of 23 and new private shareholders inject cash of 6. This gives us the second panel "immediate post recapitalization", where we have assumed that the government takes a long-term capital claim worth (expected net present value) 3. The accounting value of shareholders' funds is then deduced by subtraction to be 6, which happens to be the same as the value of the cash they injected. However, this is not really just a zero-sum game for the private shareholders: they will

receive an additional stream of profits in future from the franchise value of the bank. In the third panel, we see that the bank has decided to sell the (long-term) bonds received, partly to increase liquidity, and partly to expand lending. Note also that the new lending amount of 97 is backed by a total of 9 in capital - giving a capital ratio of just above 9 per cent.

Finally we should note that the cost of the bailout to the government in the numerical example here is 20: being the injection of bonds less the capital claim acquired. This is an expected net present value calculation. Over the coming years, the government will pay interest on the bonds, and receive dividends on the capital claim. This flow of net payments is another way of summarizing the cost of the bailout. Either the net present value, or the flow calculation, can be used. But not both, as that would obviously be double-counting.