
BANK OF FINLAND DISCUSSION PAPERS

1/97

Peter Nyberg

International Secretariat

20.1.1997

Macroeconomic Aspects of Systemic Bank Restructuring

**Suomen Pankki
Bank of Finland
P.O.Box 160, FIN-00101 HELSINKI, Finland
☎ + 358 0 1831**

Peter Nyberg

International Secretariat
20.1.1997

Macroeconomic Aspects of Systemic Bank Restructuring

ISBN 951-686-541-0
ISSN 0785-3572

Suomen Pankin monistuskeskus
Helsinki 1997

Macroeconomic Aspects of Systemic Bank Restructuring

Bank of Finland • Discussion Papers 1/97

Peter Nyberg

Abstract

Systemic bank problems arise for a large number of causes and in spite of both active banking supervision and market discipline. Once a problem has emerged, swift action is needed to limit further losses, avoid financial destabilization, and regain efficient markets. The restructuring exercise is essentially microeconomic in nature, but has strong links to the development of the whole economy. Particularly important is to improve risk management in banks and support only viable banks with fit and proper governance. Government bank support is ultimately constrained by the need to safeguard government creditworthiness, and bank creditors may therefore have to carry substantial parts of the loss. Monetary policy should aim for a low and stable rate of inflation without sudden changes in interest or exchange rates, but lending of last resort should remain available at government risk. Bank restructuring is complicated by the need to simultaneously restructure important bank customers.

Key words: banking crisis, bank restructuring, financial stability, government support, macro-economic policy

* * * * *

This paper was written in the spring of 1995 during a short assignment with the Banking Supervision and Regulation Division of the International Monetary Fund (IMF). It was subsequently used in several workshops on systemic bank restructuring arranged for senior officials from countries in transition by the Monetary and Exchange Affairs Department of the IMF. Such workshops were arranged in Warsaw (September, 1995); in Moscow (April, 1996); and in Stockholm (May, 1996).

Though the paper occasionally refers specifically to transitional economies, most of the issues discussed are of a general nature. Therefore, the author hopes that the publication of this paper could prove of some use to practitioners of systemic bank restructuring elsewhere, as well.

The author is thankful to the staff of the Banking Supervision and Regulation Division and to Mr. Vincente Galbis of the IMF for useful comments. All remaining errors are, of course, the responsibility of the author only. The views expressed in this paper are solely those of the author and do not necessarily represent those of either the IMF or the Bank of Finland.

Macroeconomic Aspects of Systemic Bank Restructuring

Suomen Pankki • Keskustelualoite 1/97

Peter Nyberg

Tiivistelmä

Ongelmia pankkijärjestelmässä syntyy useasta eri syystä ja riippumatta sekä toimivasta pankkivalvonnasta että ns. markkinakurista. Kun ongelma on syntynyt tarvitaan nopeita vastatoimia lisäkustannusten estämiseksi, rahoitusmarkkinoiden vakauden ylläpitämiseksi ja tehokkaiden markkinoiden säilyttämiseksi. Pankkijärjestelmän uudelleenjärjestely on perimmiltään mikrotaloudellinen harjoitus jolla kuitenkin on vahvat yhteydet koko talouden kehitykseen. Erityisen tärkeää on parantaa pankkien riskienhallintaa ja tukea ainoastaan elinkelpoisia pankeja joilla on hyvät johtamisjärjestelmät. Valtion pankkitukea rajoittaa viime kädessä tarve ylläpitää valtion luottokelpoisuutta ja pankkien velkojat joutunevat siksi kantamaan huomattavan osan kustannuksista. Rahapolitiikan tulisi tavoitella vakaata hintakehitystä ilman äkkinäisiä koron tai valuuttakurssien muutoksia, ja hätärahoitusta tulisi olla tarjolla valtion riskillä. Pankkijärjestelmän uudelleenjärjestelyä vaikeuttaa mm. tarve samanaikaisesti vakauttaa pankkien tärkeimmät asiakkaat.

Asiasanat: pankkijärjestelmän uudelleenjärjestely, pankkikriisi, rahoitusmarkkinat, talouspolitiikka, valtiontuki

* * * * *

Tämä selvitys laadittiin keväällä 1995 Kansainväliselle valuuttarahastolle (IMF) lyhyen työvierailun aikana. Valuuttarahasto on sen jälkeen käyttänyt selvitystä useissa korkeille virkamiehille järjestämässä pankkijärjestelmän vakauttamista käsittelevissä seminaareissa. Tällaisia seminaareja järjestettiin Varsovassa (syyskuu 1995), Moskovassa (huhtikuu 1996) ja Tukholmassa (toukokuu 1996).

Vaikka selvityksessä joskus viitataan erityisesti siirtymätalouksiin, ovat useimmat käsiteltävät ongelmat luonteeltaan yleisiä. Kirjoittaja toivoo siksi, että selvityksen julkaiseminen voisi osoittautua hyödyksi käytännön pankkijärjestelmän uudelleenjärjestäjille ja vakauttajille muuallakin.

Kirjoittaja kiittää Kansainvälisen valuuttarahaston pankkivalvonta- ja sääntelytoimistossa työskentelevien kolleegojen ja Vincente Galbiksen antamista hyödyllisistä näkökohdista. Kaikki jäljelle jääneet virheet ovat tietenkin yksinomaan kirjoittajan. Esitetyt näkökohdat ovat yksinomaan kirjoittajan omia, eivätkä välttämättä edusta Kansainvälisen valuuttarahaston tai Suomen Pankin kantoja.

Contents

Abstract

I.	Introduction	7
II.	Banking Problems and Systemic Stability	9
1.	Causes and characteristics of systemic banking problems	9
2.	Wealth and income effects	10
3.	The need to retain creditor confidence	11
III.	Raising Bank Profitability: The "Flow" Issue	14
1.	Improving risk management by banks and their supervisors	14
2.	Avoiding additional costs	15
IV.	The Extent of Government Support	17
1.	Avoiding over indebtedness	17
2.	Determinants of actual government support	17
V.	The Involvement of the Central Bank	19
1.	Issues of monetary policy	19
2.	Lending of last resort	20
3.	Alternative liquidity crisis scenarios	21
VI	Issues of Sequencing	23
VII.	Conclusions	25
Appendix		26
Financial Interlinkage Between Sectors		
Bibliography		30

I. Introduction

A systemic banking problem exists in an economy when a substantial part of the banking system threatens to cease functioning due to liquidity constraints or to insolvency. Banks cannot meet all their obligations on time, threatening financial distress among their customers. Such distress would have both direct and indirect negative effects on the real economy. When public confidence in the ability of banks to fulfill their obligations evaporates, the systemic banking problem may turn into an acute systemic banking crisis. Banking problems may arise from numerous causes, usually a combination of major macroeconomic instability and poor profitability in the enterprise sector. An outright crisis, by contrast, is the result of actual or threatened insufficiency of liquidity in the banking system and will contribute to even more serious macroeconomic instability.

Systemic banking problems have effects with serious macroeconomic costs which include inefficient allocation of savings, a high cost of financial intermediation, high interest rates and lending margins; interference with the development and functioning of interbank and other financial market; unclear or unstable transmission of monetary policy; continued pressure for enlarged central bank financing of the banks and/or the government; and increased use of foreign banks and currencies. The end result of these problems is a loss of economic efficiency and a decline in real economic growth and welfare.

The effects of a banking crisis (which may easily evolve into a broader financial crisis) are more dramatic. A contraction of income and wealth can take place during this process, which gradually will raise all credit risks, and will cause solvency problems for sounder banks as well. As some weak banks go into liquidation, their customers will find it difficult to get new funding, aside from arrears. Both supply of demand for goods and services will fall, causing real incomes to decline. Less affected bank creditors will further reduce their exposure to bank risk by acquiring, for instance, real or foreign assets, raising banks' funding costs.¹

Because of these serious potential effects, the problems should be addressed as soon as possible through a systemic restructuring of the banking sector. This is essentially a microeconomic exercise. However, the systemic restructuring has some strong macroeconomic constraints and links, including the management of depositor (creditor) confidence; assessing the need for and constraints on government support (including making sure that new losses are avoided); managing both monetary policy and lending of last resort; and ensuring the overall proper sequencing of bank and enterprise restructuring. However, there are few restructuring issues which can be

¹Calomiris and Gorton (1991) find evidence that banking crises in the United States have been caused by depositors in numerous institutions withdrawing their deposits until the solvency of different banks has been established. In some economies in transition, bank liabilities are relatively small in relation to incomes, implying that bank liquidity needs during a confidence crisis may be less than in more monetized economies.

resolved purely through macroeconomic instruments. Addressing systemic banking problems is, essentially, a practical exercise in multiple enterprise restructurings.

It is important to differentiate between the macroeconomic effects arising from the basic banking problems themselves and those arising from the restructuring policy adopted. In particular, no restructuring policy can sustain the previously perceived levels of national wealth and income, because they are simply unattainable until the enterprise sector has become generally profitable again. However, choices have to be made on how this reduction in wealth and incomes should be distributed among different sectors of the economy and between present and future taxpayers. Decisions concerning to what extent and under what conditions government and the private sector, respectively, will bear the costs of bank restructuring may have effects on savings and investment behavior and, therefore, on economic activity and stability.

Ideally, a banking system, as well as an individual bank, should be rescued only once to avoid the risk of moral hazard. If banks need more than one rescue package, it can be argued that management and owners have shown themselves too inept to continue operations. However, systemic problems often arise from major macroeconomic disturbances, which seldom can be adequately forecast in any economy. This is especially true in transition economies, which, furthermore, still are subject to massive market failures and inefficiencies which may require substantial enterprise restructuring over time. Therefore, it is realistic to assume that systemic bank restructuring may have to proceed in waves, as enterprises and banks unexpectedly become nonviable in response to changes in market conditions, economic prospects and information. In this case, the best that could be hoped for is that all available information is taken into account and acted upon at any one stage in the restructuring process.

The rest of the paper contains six sections. The second deals with issues determining the stability of the financial system, including how the distribution of costs for past banking losses affects the economy. The third section briefly deals with ways of ensuring that no new major banking losses arise during or after the restructuring. The fourth section discusses the limits and determinants of government support. The fifth section deals with the role of the central bank, particularly as lender of last resort. The sixth section deals with issues concerning sequencing in the context of macroeconomic stability. The final section summarizes the main conclusions of the paper.

II. Banking Problems and Systemic Stability

1. Causes and characteristics of systemic banking problems

In market economies, systemic banking problems and crises arise from time to time. A number of partly competing, partly complementary theories trying to explain their basic macroeconomic causes have been developed.² Some theories stress the importance of exogenous shocks (absolute and relative prices, wars, recessions abroad), others focus on psychological factors (euphoria, myopia, herd behavior, cognitive thresholds) or speculative behavior (rational bubbles, deficient governance), still others consider government policies (monetary policy, change in regulations including financial liberalization, directed lending, inducements to moral hazard). Explanations for why an initial disturbance grows to systemic proportions vary from the psychological (changes in expectations or in perceptions of risk) to the institutional (domino and contagion effects, solvency regulations) or technical (information processing capacity). Other contributing factors not discussed here, include insufficient governance, legal and supervisory weakness, and incentive problems).

The main causes of bank insolvency in transition economies are the large amount of bad assets inherited from the command economies and a continuous extension of new bad loans. Because part of the productive capacity in these countries was inefficient at the new set of relative prices, many enterprises became nonviable and national wealth and income thus proved to be lower than previously believed and the available data continued to show.³ Bank problems have arisen because the market value of bank assets has fallen, while the value of bank liabilities has not.

Other causes which are likely to have contributed to the banking problem include insufficient management and staff skills, slow implementation of stricter lending standards, unclear principles of governance (particularly in state banks), risk concentration, insider lending and speculation (particularly in private banks). Such inefficiencies tend to retard economic recovery, since banks' available funding may be used for new credits to old problem enterprises rather than to more profitable, new ones (adverse selection). Therefore, avoidance of new bad credits is as important as getting rid of old ones.

²See Davis (1992) for a comprehensive discussion of various explanations for systemic financial disturbances. For a more selective and interpretative discussion, see Mishkin (1990) and (1991).

³In fact, no banking system can normally stay solvent unless its main customers, and thus the real economy as well, show profitability and growth.

2. Wealth and income effects

As already noted, continued and unchanged operation of problem banks is likely to slow down economic recovery. Indeed, banks that are unlikely to remain unprofitable even after recapitalization should, unless special circumstances intervene, be closed in order to avoid generating new losses.

When considering closure of such banks, additional factors should nevertheless be taken into consideration. Bank insolvency is particularly troublesome in economies where the private sector holds substantial parts of its assets in the form of deposits or other bank liabilities. Closure of banks then puts the wealth and liquidity of other sectors at risk, threatening defaults among households, enterprises, and other banks (for a somewhat more detailed discussion of intersectoral relationships see the Appendix). If problem banks are important in the payments system, it may be difficult to provide customers access to alternative sources of payments services. Furthermore, deposit losses will affect confidence in banks and can bring about an overall reduction of savings held in the banking system.

As a result of bank failures and the lower level of savings intermediated through the banking system, it may prove difficult for some solvent enterprises to find adequate funding from other banks at interest rates merited by their credit histories.⁴ Thus some viable, but illiquid enterprises will fail. As a result of these developments, production and demand may fall, thus adversely affecting the wealth and incomes of remaining enterprises and households.

Estimating the likelihood of cumulative effects on economic activity is, in practice, extremely difficult. Sufficiently detailed knowledge of the relevant balance sheets is uncommon, and probably virtually nonexistent in transition economies. However, the likelihood of cumulative effects can be assumed to increase with. (a) the size of the balance sheet of the defaulting institution; (b) the lack of alternative sources of enterprise funding (securities markets or government); (c) the amount of inter-enterprise arrears; (d) the absence of an efficient market for the assets of defaulting institutions; and (e) uncertainty among savers about the financial situation of banks and their major customers or about the restructuring policy to be followed by the government.

When the risk of cumulative macro effects is judged to be serious, at least larger banks (starting with those having the least problems) should be rehabilitated or merged rather than closed or allowed to fail.⁵

⁴Gale (1990) stresses the loss of information on the credit history of customers which is caused by bank failures. This may prove problematic primarily for small and medium-sized enterprises.

⁵ However, care should be taken that the merger should not threaten the viability of an existing bank that was judged to be viable prior to the merger and, therefore, can be argued to be already viable. One way of preventing such distortions to competition

One distributional aspect of the systemic banking problem in economies in transition is less problematic than in developed market economies. Because banks' problem assets largely consist of credits to government-owned enterprises, and because problem banks themselves largely are owned by the government, recapitalization is, in principle, a question of intra-governmental transfers. When closing a bank, many assets and liabilities can be offset against each other, thereby reducing the effect on public sector net wealth. However, to the extent enterprises have been funded by deposits or other instruments owned by households or private enterprises, the scope for netting is substantially less. When redistributing (or netting) losses, there is a need to consider the impact on incentives for banks and enterprises, which will determine their future profitability and viability.

3. The need to retain creditor confidence

Banks cannot operate as profitable financial intermediaries unless savers have confidence that the funds they lent to the banks will be repaid. Loss of such confidence will cause savers to withdraw their funds from banks, raising banks' cost of funds and threatening them with an acute liquidity crisis. Such liquidity effects are likely to be relatively important when systemic restructuring costs are borrowed at least partly by private bank creditors.⁶

Households and enterprises have only limited knowledge of the true state of banks' balance sheets, making it difficult for them to judge the likelihood of a bank default. When banking problems arise, unprotected savers and investors will therefore tend to take precautionary measures as if a default were imminent. This is likely to be the more common: (a) the more widespread the problems are; (b) the less transparent bank balance sheets and policies are; (c) the more sophisticated savers are; (d) the less likely outside support for the problem bank is considered to be; and (e) the less

is to avoid capitalizing the errant bank fully.

⁶The fear of precipitating a crisis of confidence has probably been a major factor in determining the decisions to provide full depositor protection in several developed countries during the 1980s and 1990s. However, total costs to the government have often risen to several percentage points of GDP, indicating that sufficient attention must be paid also to the fiscal implications of such protection.

comprehensive the restructuring is seen to be.⁷ At some point, herd behavior⁸ sets in, causing a withdrawal of funds from at least parts of the banking system.

The systemic banking crisis caused by a loss of public confidence is difficult to control, because its cumulative nature tends to verify the worst suspicions of savers and investors. Both risk and uncertainty rise,⁹ causing banks to reassess financing and investment decisions to all bank customers.

Unless banks and their customers can be assured that liquidity is forthcoming and that credit risks are limited, the combination of credit crunch and economic recession may continue well past the point where only nonviable enterprises and banks are closed. Problem banks and enterprises will disappear, but sound ones may well be swept away too. Furthermore, the role of banks as financial intermediaries will decline. The declining ability of banks to capture savings through deposits will constrain their ability to provide new credits, forcing enterprises to search for alternative sources of funds. This could provide an impetus to the securities or private placement markets, though the scope for this will be limited because non-bank providers of funds will tend to have no more, and often less, information on borrowing enterprises than the banks. This process might also induce currency substitution and offshore finance.

Fairly comprehensive deposit protection may be called for to reduce the risk of bank failures due to bank runs during the restructuring process. Because such protection, when introduced during or prior to a systemic banking problem, also raises the possibility of both moral hazard and excessive government indebtedness, any such deposit protection should be complemented by vigilant and efficient monitoring of

⁷Baer and Klingebiel (1994) argue that having depositors bear part of the cost has had little negative impact on economic performance. An essential precondition, however, has been that restructuring measures are seen to be comprehensive, establishing market confidence that those institutions remaining operational are (or will be) well capitalized.

⁸See Banerjee (1992) and Mishkin (1991) for explanations of this process. Kaufman (1994) has studied the evidence of effects of bankruptcies on competitors in the developed U.S. markets (where depositors are protected but in principle only up to a fixed amount), finding that they are fairly common but smaller than often assumed. This may reflect both the good information available to depositors and the relative rapidity with which individual bank problems tend to be resolved. Lang and Stulz (1992) found that bankruptcies, particularly in highly leveraged industries, tended to reduce the market value of competitors.

⁹Risk is a calculable measure, for instance relating to statistically determined swings in prices, values and yields of assets in financial portfolios. Uncertainty, on the other hand, refers to the lack of any basis for financial calculations because information is lacking or the investment climate is undergoing major changes. Uncertainty, therefore, reduces financial intermediation and investment while risk may well increase it. Mishkin (1991) stresses the role of uncertainty in starting a financial crisis.

bank activities by bank supervisors. However, management in private profitable banks, if appropriately controlled by rational owners, may be less likely to abuse deposit protection once the systemic problems have been solved.¹⁰

¹⁰ Gorton and Rosen (1992) argue that recent increased risk taking by banks in the United States primarily has been the result of inept managers trying to keep their jobs by showing high (but risky) book profits to riskaverse owners. Market discipline reduces the managerial returns on risky investments, but does not significantly change management's incentives. As banks approach insolvency, however, both managers and rational owners of banks may become more willing to take on more risk. In this view, moral hazard is a danger primarily when banks either already have serious solvency problems and/or do not have active (dominant) owner/ as well as when owners are major debtors of the bank.

III. Raising Bank Profitability: The "Flow" Issue

1. Improving risk management by banks and their supervisors

The need for bank restructuring is usually increased by imprudent bank lending. Therefore, any restructuring policy should be designed to improve risk management in banks. How to achieve this is at present the focus of debate in many market economies. In general, a restructuring exercise is likely to be compromised unless risk management in banks is improved at an early stage.

It is sometimes argued that private ownership is an important precondition for responsible risk management. If so, it would improve the likelihood of profitable bank operations, and of workouts. The view that privatization should proceed is supported by the economic inefficiencies prevalent in the old command economy, as well as by current political pressures in some countries to continue unsound directed lending. However, efficient operation inherently has less to do with the identity of the owner than with how management is chosen, which incentives it is given, and how actively the owner supervises management performance. Therefore, bank ownership is less of a basic macroeconomic issue than a question of how efficient governance is likely to be in different situations. The options for efficient ownership can, accordingly, be quite different in different societies. Privatization is, therefore, unlikely to be a generally sufficient precondition for successful restructuring.

Recent systemic banking problems in several market economies have shown that even well-designed banking supervision is insufficient to prevent unsound lending practices. Also, historical experience from previous periods of financial unrest indicates that reliance on market discipline alone often is insufficient as well. These observations suggest that how well risks are understood and managed by the financial institutions and by the authorities may be more important than how financial discipline is enforced. Thus, much of the debate on the relative merits of market discipline versus banking supervision may prove to be of limited practical relevance. Instead, the focus should be on the need for acquiring superior financial and economic expertise by both banking supervisors and the banks themselves.

When the government has taken over a problem bank, it should promptly decide whether the bank should be liquidated, or rehabilitated (that is, merged with a private bank, or sold to private interests), whichever appears most economical. If the bank is to be rehabilitated, the government should try to realize at least some of the potential upside gains and recover part of the funds expended on rehabilitating the bank. Thus any bank taken over by the government should be sold or merged only when it is consistently profitable and thus will fetch as high a price as possible in the private market. While acting as owner, the government must ensure proper governance, for instance, by making certain that credit decisions are made on commercial grounds alone and not on political terms. Failure to do so will eventually result in new losses and a low value of the banking franchise.

2. **Avoiding additional costs**

During the restructuring process itself, care should be taken to avoid additional costs, either in the form of new unsound loans, excessive transfer of both on- and off-balance sheet risk from banks to the government, or operational costs in the banks themselves.

Whether problem banks should be allowed to continue lending operations would depend on the decision made regarding their future. Banks which are to be rehabilitated (either sold or merged) must, preferably under new management, be allowed to make new sound loans because this is their main source of revenue. These banks should concentrate on avoiding new credits to problem enterprises; increasing their portfolio of sound credits will raise their value to the eventual recipient of the bank. The main preconditions for this are improvements in credit management and evaluation, as well as in asset liquidation and recovery. In contrast, banks which are to be liquidated, should not in general be allowed to make new loans or take new deposits, but, under new interim management, concentrate on working out their portfolio of problem loans.

When banks are sold to or merged with other banks, the authorities should stress competitive bidding and adequate risk-sharing arrangements to reduce total restructuring costs. Offers should therefore be solicited from and negotiations conducted with more than one potential receiving bank, including interested foreign banks. Receiving banks should be required to take at least some economic responsibility for the work-out of problem assets, creating an incentive for cost reduction. The extent and form of such responsibility should be the object of negotiations.¹¹ Risk-sharing and operational responsibility for work-outs also cause the receiving bank to have an interest in preserving credit relationships with salvageable customers.

When applying these principles, it should be kept in mind that conditions in the transition economies do not yet fully conform to those generally underlying economic policy recommendations in most market economies. In particular: (a) market failures are commonplace because markets in which assets are priced and traded are virtually nonexistent or small in relation to bank portfolios, whereas publicly available information is scarce and unreliable; (b) substantial parts of the enterprise sector do not yet qualify for funding on normal commercial criteria; (c) government financial resources are small compared to needs; (d) institutional and economic shocks are often larger and more rapid than in mature economies; and (e) the supply of skilled

¹¹The receiving bank could, for instance, be responsible for a fixed share of losses on old credits during a specified time. Alternatively, agreement could be reached on the value of individual assets, with the receiving bank and the Government sharing any excess loss or profit above a given amount. Finally, if no sound bank is interested in acquiring a particular bank with its problem assets, these assets may have to be transferred to a separate asset management company. This, however, may cause problems for borrowers and increase work-out costs.

and motivated personnel is limited and under extreme pressure from competing demands.

These special features tend to constrain the systemic bank restructuring strategy. The market value of bank portfolios must, for a time, be established more by forecasting and evaluating business plans than by evaluation or sale at existing prices. Banking problems are unlikely to be resolved all at once, because values are difficult to establish and may change rapidly; furthermore, lack of properly trained staff may imply lax credit and risk management policies. Banks may have to become intimately involved in the economic rehabilitation of their customers in order to adequately judge their creditworthiness. This may require banks to accept substantial equity stakes in their customer enterprises. There could, in this case, be a danger of close bank-customer relations causing additional prudential problems. Governments in transition economies may not be able to afford to introduce deposit protection schemes when appropriate, or provide banks with financial support when needed. In short, it may not be possible or optimal to conduct systemic bank restructuring in these economies in the same manner as in more mature market economies.

IV. The Extent of Government Support

1. Avoiding overindebtedness

While systemic restructuring with little government involvement and large depositor losses runs the risk of reducing economic activity and confidence, a policy of substantial government involvement poses other dangers to economic stability. If government liabilities increase too much, the government's financial soundness may be jeopardized. Then the government will find it very difficult to fulfill its normal functions. Utilizing central bank financing to avoid this would result, depending on the extent of monetary expansion, in higher inflation or even hyperinflation.

The maximum government debt level marking the start of a debt spiral is positively related to national income growth and negatively related to the interest rate. Inflation will not normally affect the maximum level of domestic debt in the long run, because, for its part, it will tend to raise both nominal interest rates and nominal GDP growth rates by similar amounts.

In practice, however, the government must take adequate account of the large uncertainties involving future growth and interest rates. A sustainable, safe level of debt is therefore not likely to be very high in transition economies until they achieve a stable path of economic growth. Moreover, the primary fiscal imbalance in these countries is typically very large. This limits the amount of funds which can be earmarked to cover systemic bank restructuring costs.

The government must determine the level of the maximum sustainable debt, preferably in cooperation with the opposition parties. The government funds available for new undertakings can then be estimated as the difference between maximum sustainable debt and the present liabilities of the government. Part of this fiscal room is available for systemic bank support, its share essentially depending on the assessed likelihood of cumulative macroeconomic effects. For this calculation to make sense it is, of course, important that all government liabilities be included, net of likely loan recoveries. From the point of view of long-term indebtedness, all government liabilities expected to cause cash outlays at some time should be included. This means, for instance, that liabilities should contain the probable outlays required because of government loan guarantees to banks, enterprises or households.

2. Determinants of actual government support

The actual extent of government financial support to the banking system is likely to depend on a number of factors most of which are difficult to quantify: (a) the fiscal room available for government support, (b) expected moral hazard effects; (c) expected effects on the confidence of depositors and bank creditors; (d) assessed cumulative economic effects; and (e) political cost considerations (including issues of equitable and alternative use of funds). The larger the first two (the last three) factors are, the less (greater) basis is there for a substantial financial involvement of the government. Accordingly, it should not be surprising that different countries show

different degrees of government financial involvement. The exact amount and timing of support payments will depend on at least: the amount of loans restructured; the success of restructuring and loan recovery; the time when the restructuring is conducted; and the type of support provided (for instance, subsidized loans, capital injections, guarantees, or tax incentives).

Any government support will be borne by present and future receivers of government services because bank support will have to be financed by either raising tax receipts, reducing government outlays, raising the budget deficit, or a combination of the three. If the systemic restructuring exercise is properly conducted, only past unavoidable losses should have to be borne, because (a) no problem bank should receive unmerited support, and (b) remaining banks will have a sufficient flow of profits to survive on their own. That incomes and wealth of future generations are likely to be higher than those of the present one could be an argument for transferring at least part of the burden to the future. Depending on the financing mix used for bank support, there could be short- and long-term macroeconomic effects on, say, growth and employment. For instance, to the extent bank support is financed through a larger government deficit, government debt and interest rates will tend to be higher than before, thereby reducing investment and economic growth.

If the government funds or guarantees provided for bank support are insufficient to cover the costs of bank restructuring, depositors and other bank creditors must certainly lose part or all of their assets. Enterprises and banks which remain solvent and profitable will be offered to buy the assets of failed ones, "restructuring" them in the process. The role of the government will then be to ensure that this process is done in accordance with the law and in an orderly fashion. Costs may be high, as some viable enterprises also may founder in the process, and as solvent buyers may not always be "fit and proper" bank managers or owners (in the latter case it is the duty of the bank supervision authority to prevent access of such buyers). There is, therefore, a risk that some of the originally sound banks will prove unprofitable and eventually insolvent, causing a second wave of systemic banking problems. In the long run, though, the economy will be better off, provided that the government can (a) retain depositors' confidence in the banking system and (b) ensure that the managers and owners of surviving banks are prudent, fit and proper. Nevertheless, the political pressures on the government to avoid letting bank creditors pay the restructuring costs up front may be strong in the short and medium term.

V. The Involvement of the Central Bank

1. Issues of monetary policy

Monetary policy must be coordinated with bank restructuring and fiscal measures because: (a) credit from the central bank at times may remain the only practical way of providing sufficient to an ailing bank in a timely manner (lender of last resort), and (b) the implementation of market-based monetary policy requires solvent and efficient banks as counterparts to the central bank.

Even during a systemic banking crisis, the primary aim of monetary policy should be to reduce the rate of inflation. This is so because inflation will (a) only temporarily hide banks' solvency problems, meanwhile enabling them to make new losses, and (b) reduce financial stability and slow the development of financial markets in the longer run.

When a systemic banking problem and inflation coincide, banks' solvency gets temporarily boosted by the erosion of the real value of both their liabilities and their problem assets. However, the real value of sound nominal assets declines as well, reducing banks' gain from inflation. Also, because inflation increases the demand for new credits (both sound and unsound), banks' solvency will not be raised by inflation unless the quality of their asset portfolios can be raised. Moreover, bank creditors will gradually demand compensation for expected inflation, thereby reducing the extent to which they can be made the unwitting payers for unsound bank credits.

Avoidance of inflation will be essential for long-term financial stability. There will, in fact, be renewed threats to the banks' solvency if the rate of inflation suddenly increases and the relative prices of various assets become further distorted. In particular, the relative prices of foreign exchange, real estate, and other real assets, will tend to rise. Once inflation decreases again, these relative prices will decline, causing losses to their owners and creditors alike. Furthermore, changes in relative prices will have an immediate negative effect on banks' balance sheets and revenues. Unless banks are properly managed, renewed banking problems could arise. For these reasons, inflation will, at best, conceal temporarily the financial problems existing in banks and enterprises, and will not improve the efficiency and viability of the real economy.

A sound banking system is a precondition for normal interbank markets to develop, and, accordingly, for the central bank to conduct monetary policy through indirect instruments. Banks that are solvent and profitable will provide only limited unsecured lines of credit to banks perceived as weak, causing the interbank market rates to become segmented and volatile. Changes in the central bank refinancing rate might have only limited effects on the solvent banks, since their marginal funding rates may be systematically lower than those of more risky banks. This could weaken the monetary transmission mechanism from banks to their customers. The decision as regards which banks to rehabilitate should therefore be taken as soon as possible in order to normalize the interbank and money markets.

2. Lending of last resort

A traditional function of central banks is to counteract bank liquidity problems by being willing to provide lender-of-last-resort credit to banks that cannot raise sufficient funds in the private market. Such credits are offered at penal rates and are accompanied by appropriate signalling of the need for increased supervision of the concerned banks. No precise limit can be set on crisis lending, because the central bank may have to provide very large amounts of liquidity to banks if depositors (creditors) lose their confidence in the domestic banking system, and switch to cash, real assets, or foreign assets. Efforts to limit or forbid withdrawals of deposits or other funding may well further erode confidence.

Only the restoration of depositor confidence will normalize the supply of liquidity to the banks. Such a restoration, as already noted, usually requires decisions outside the competence and financial scope of the central bank, and thus must remain the responsibility of the government. Unless credibility can be restored, domestic interest rates and the exchange rate will remain under pressure.

Any banks not meeting their obligations on time will lose the confidence of their creditors. Access to central bank liquidity support may in such case potentially decide the fate of these illiquid banks. However, this emergency financing process may not yet be completed by the time crisis funding is needed. Even if it were, it should remain the formal responsibility of the government to decide which banks should be rehabilitated and which should be closed. Therefore, unless the central bank receives clear directives from the government making differentiation between banks possible, it would be difficult for the central bank to refuse access by any bank to the lender last resort facility.

To ensure the solvency of the central bank, all costs related to systemic bank restructuring, including any subsidization of central bank credits to problem banks, should be borne by the government. If the central bank were to become insolvent, confidence in monetary stability could be compromised, and the independence of the central bank from the government could be reduced. Central bank lending to problem banks should therefore always be collateralized or given an explicit government guarantee.¹²

¹² It is assumed that government financial liabilities are honored on time and virtually at any cost. This is absolutely essential for (almost) any financial restructuring program to work. Unless the government complies with such conditions, its own lack of credibility can make it extremely difficult to restore both domestic and foreign confidence in the banking system.

3. Alternative liquidity crisis scenarios

During the restructuring exercise, both sound and unsound banks may experience an acute liquidity crisis if depositors or other creditors withdraw funds or avoid renewing credits due to declining confidence. The first line of defence is the central bank which stands ready to provide funds against full collateral (or government guarantees) as the lender of last resort. However, if funds are withdrawn from the domestic market in large amounts (for instance, for holding cash or assets abroad), these withdrawals may threaten either domestic monetary stability, currency convertibility, or both.

This situation may be extremely difficult, as it may force the government to choose between allowing an immediate financial crisis to develop and guaranteeing the liabilities of the banking system as a whole. The macroeconomic problems generated by a financial crisis are potentially serious. On the other hand, the costs of a comprehensive guarantee may well exceed sustainable limits of government debt, particularly in less wealthy economies. If the volume of problem loans is large, it is possible that such a guarantee cannot be kept without the danger of the government entering a debt spiral. Deciding on a course of action may be made even more difficult by rising market expectation about the possibility of a government financial crisis.

Under these circumstances all decisions would raise substantial risks and none would be likely to prove fully satisfactory. However, there are strong arguments for avoiding misleading bank creditors by making promises which cannot be kept. This could make successful future policy actions virtually impossible. Therefore, in order to maintain government credibility, maximum efforts should be made to clarify the extent and costs of the banking problem, to implement policies supporting capital investment in the banking sector and improve the cash flow of problem enterprises (for instance, through payment of government arrears). As soon as possible thereafter the authorities should announce which banks will be rehabilitated and how the liabilities of both these and other problem banks will be treated.

If the risk of a general liquidity crisis is modest and far into the future, and if the likely economic and social effects are judged to be small (an unlikely case), the authorities should avoid a general guarantee. By contrast, if the adverse macroeconomic consequences of a liquidity crisis are judged to be potentially serious and imminent, and if the government's room for indebtedness is sufficient, the government could, for the foreseeable time of the restructuring, publicly announce that bank liabilities will be honoured on time. Before doing so, however, the government should make very strong efforts to ensure that banks stay solvent (through incurring low losses relative to government tax receipts, improving net bank revenues, strengthening economic growth, and reducing the sensitivity to foreign exchange availability and rates). Such an announcement should not be legally binding on the government. If any banks should need recourse to government support consistent with the announcement, a restructuring program should immediately be triggered. This would amount to full (though temporary) government ownership of the problem banks combined with complete (though also temporary) creditor

protection. When all the problem banks are returned to solvency, merged or liquidated, the guarantee would be withdrawn and the restructured banks sold to private parties.

If government resources are insufficient and the effects of a systemic liquidity crisis are deemed to be serious, there is no clear way out for the authorities and they will have to choose between risking a debt or a liquidity crisis. There may be a strong temptation in this case, from a strictly political point of view, to guarantee the liabilities of the banking system in the hope that this will improve public confidence so that the need to implement this guarantee will not materialize. Unfortunately, however, if the situation deteriorates and the government fails to deliver on its guarantee, there will be a clear risk of loss of government credibility.

VI. Issues of Sequencing

The sequencing of bank and enterprise restructuring may have important macroeconomic effects besides distributional consequences. It is sometimes argued that the banking system should be restructured and privatized first to be able to take over the primary responsibility for enterprise restructuring. However, such a sequencing could have undesirable effects on the real sector, particularly in transition economies where the number of insolvent enterprises is large and enterprise evaluation skills are scarce. Once the banks have been restructured, they will be required to take account of only commercial considerations. They may, accordingly, at their own discretion, force insolvent enterprises into liquidation or bankruptcy rather than into rehabilitation or mergers. If all banks choose to do this simultaneously, they can easily, though inadvertently, contribute to an economic recession.

To avoid such a credit-crunch-induced recession, the recapitalization and privatization of banks should take place only after bank assets have been thoroughly evaluated during the bank restructuring process. During the relatively short evaluation period, bank loans will have to continue to be provided to troubled enterprises even at the risk of such loans eventually proving partly unsound. There is little reason to provide explicit government guarantees for such individual loans,¹³ since government guarantees remove any commercial interest the banks have in improving the profitability of particular borrowers. Instead, unsound enterprises too large to be liquidated could well continue to be financed by still unsound government-owned banks¹⁴ or by established work-out agencies. Credits to other enterprises should, during the evaluation period, be provided only with the specific approval of the restructuring authority.

This strategy of identifying viable enterprises as part of the bank restructuring process may be contrasted with an alternative strategy which governments sometimes, and unfortunately implicitly, choose. This is the strategy of simply waiting for the solvency problems of banks and enterprises to resolve themselves. Such a strategy may involve, for instance, (a) retaining fictitious value on bank balance sheets, thereby eliminating the need for wealth transfers in the short term or (b) supporting the banks directly and without strict preconditions, while also avoiding stringent restructuring measures on insolvent customer enterprises.

¹³ The government will take some indirect responsibility for such credits in any case, by assuming responsibility for the restructuring of the bank. In general, the government should stand ready to safeguard only the banking system, but not bank customers.

¹⁴ The fact that such banks are insolvent does not necessarily mean that they have to continue making bad credit decisions. Such banks could simply operate as part of one or several government-controlled "enterprise hospitals", providing banking services and operating capital at market rates to enterprises under restructuring.

If no enterprise restructuring is taking place, future enterprise earnings and profits will not rise, and there will be a continued accumulation of new problem loans in the banks. The ultimate cost of bank restructuring will steadily grow, but government funding requirements may temporarily remain modest and limited to the amount of bank support needed in any one year. As long as the depositors and other bank creditors remain willing to fund the problem banks, no acute problems may arise, since few assets will have to be sold to raise cash. However, as soon as problem banks' creditors find safer investment alternatives, their withdrawal of funds from problem banks will cause liquidity, earnings and solvency problems. Therefore, sooner or later, the lack of sufficient asset value relative to liabilities in the banking sector will cause renewed banking problems, which are likely to be greater than before.

VII. Conclusions

Systemic banking problems can arise from numerous causes, but often involve massive credit and wealth losses related to large changes in relative prices and enterprise viability. Unless rapidly and decisively addressed by the authorities, such problems tend to worsen with time and have potentially serious negative effects on resource allocation and growth.

The goal of systemic bank restructuring is to avoid further credit losses and eliminate unprofitable institutions while retaining creditor confidence in the banking system. Banks' unsound assets should be liquidated as soon as possible, banks which are unlikely to prove profitable should be merged or closed, and both banks' and bank supervisors' risk management skills should be improved. Remaining problem banks should be recapitalized, ownership passing to those willing to do so.

Financial stability being a public good, the authorities often directly take responsibility for the restructuring process, which should proceed primarily on commercial terms. Owners of problem banks should always lose their stakes. Unless the risks to financial stability are judged to be high, at least part of the costs should be borne by bank creditors (including depositors). The government should provide any additional capital needed, subject to remaining unquestionably solvent itself. The central bank should provide short-term liquidity support only. Macroeconomic stability programs should remain in place to ensure an orderly environment for the emerging healthy banking system. Coordination of enterprise and bank restructuring may prove necessary.

Given the potentially contradictory goals of systemic bank restructuring, optimal combinations of measures may be difficult to find. In such cases it could prove useful to safeguard primarily the financial credibility of the government and the stable monetary development in the country, because these support confidence in the financial system in the longer run.

Appendix

Financial Interlinkage Between Sectors

This appendix shortly describes some of the more important connections between sectoral balance sheets in the economy.¹⁵ The primary aim is to show that bank losses represent a real cost to the economy which has to be borne by some other group or sector. Accordingly, support for the banking system requires a transfer of real resources from at least one other sector.

By definition, positive savings on the i sector (S_i) arise when current sectoral income from productive activities (Y_i) exceeds current expenditure (E_i) (See table 1). Summing over all sectors gives domestic product (total supply) and domestic demand (total demand) respectively, the difference between the two being the external current balance. In any one sector, net savings are used for increasing assets (dA_i) or reducing liabilities (dL_i) that is increasing **net** assets (wealth); in the case of the current account, net savings are also used for changing foreign exchange reserves (dR). Of particular relevance in the case of bank losses, a reduction of wealth in any one sector must be the result of a combination of reduced income and increased expenditure (costs). If the wealth loss affects assets acquired in previous periods, and abstracting from changes in relative prices, *ex post* income or costs will be different from those then recorded.

In this accounting framework, banks are special because they hold a large asset claims on various other sectors, and have large liabilities to them as well.

Y_1	Y_2	...	Y_n	M	+ Total supply
E_1	E_2	...	E_n	X	- Total demand
S_1	$S_2...$...	S_n	$-S_f$	= 0
dA_1	dA_2	...	dA_n	$-dA_f$ + dR	+ Total increase in assets
dL_1	dL_2	...	dL_n	+ dL_f	- Total increase in liabilities

The major portion of all sectoral supplies and demands consists of transactions between sectors, primarily in the form of sales and acquisitions of intermediate goods and services. Enterprise restructuring may affect income and expenditure in all

¹⁵ See Cheng (1994) for a comprehensive discussion of these issues.

sectors by reducing incomes in sectors which contain nonviable enterprises. For instance, a fall in supply (Y_i) in one sector must be reflected in either an increase in imports (M), a decrease in exports (X), or a decline in domestic demand (or a combination of them). If there is free productive capacity in a restructured sector, however, supply may remain unchanged even though individual enterprises may be closed. Enterprise closures may also reduce incomes of households, at least temporarily, and thereby cause demand to decline with attendant effects on either foreign trade or domestic supply in many, or even all, sectors. However, to the extent that households use their accumulated wealth to offset temporarily the fall in incomes, no changes will be seen in the incomes account.

Bank restructuring may affect the economy through changes in sectoral assets and liabilities, rather than through incomes and demand. Initially, a bank customer (an enterprise) may become unsound as its assets lose value. This may involve a real loss of net wealth to the economy, if no offsetting change in other enterprises (for instance, profits of competitors) takes place. In this case, assets and net wealth will decline in the banking sector as well, as the effected enterprise defaults on its liabilities. The loss to the bank is therefore only a reflection of the loss of net wealth of the borrowing enterprise. If the loss does not reduce bank solvency appreciably, this is all that will be involved.

If, however, the loss is large enough for the bank to become insolvent, further effects will follow depending on whether the bank is allowed to default on its obligations or not. In case of default, the value of bank liabilities will decline, causing an equivalent decline in the assets (for instance, deposits) held by other sectors. This loss of net wealth will affect the solvency of enterprises and households in the rest of the economy, indirectly affecting also supply and demand of goods and services. Further effects may come through the reduction in these sectors' liquidity. If other enterprises default as a consequence of this, cumulative effects may strengthen the initial impact of the bank default.

If the authorities want to avoid a bank default, they will have to replace (at least part of) the assets lost. The wealth of the banking sector will return close to its previous value, while the wealth of the government will fall; if the government acquires ownership of the bank the fall will be less than otherwise. However, to regain its previous level wealth, it must either increase its revenues or reduce its expenditures. Unless this comes as part of a process of general growth, taxes will have to be raised or budget expenditures curtailed. Over time, then, future taxpayers will repay government outlays for bank support.

Government transfers to any affected sector are likely to increase¹⁶ total demand (or at least forestall a decline), cause a deterioration of the current account (or forestall an improvement), and impair foreign exchange reserve holdings. This is because a debt-financed transfer from the government to another sector reduces government net assets and increases those of the receiving sector. Income and wealth may rise in the receiving sector, increasing its domestic demand compared with the situation in which no transfer takes place, the savers in the sector expect to lose their wealth, and government expenditure remains unchanged.¹⁷

Unless foreign funding is freely available, government transfers must be combined with measures raising domestic savings and income and reducing other government expenditures. Higher savings or production in the economy increases domestic resources available for financing the transfer, thus reducing dependence on foreign sources.

Increased government debt-financed transfers to any one sector - including the banking sector - will directly or indirectly raise foreign indebtedness and domestic interest rates. This occurs because increasing the real resources available to the private sector requires higher imports (unless domestic production for some reason simultaneously grows). If the government is faced with a binding foreign exchange constraint, as in common in many developing market economies, support for one sector has to be financed by withdrawing resources from other domestic sectors. Support for the banking system may thus require a simultaneous tightening of fiscal policy.

The presence of inflation somewhat changes the interpretation of the accounting framework above. Savings will no longer be identical to the change in net wealth, since the stocks of assets and liabilities are directly affected by changes in the price level. The impact of a general rise in the price level will be to raise the nominal value of real assets and leave the nominal value of liabilities unchanged.¹⁸ However, since total domestic nominal liabilities and assets by definition equal each other, inflation will not affect their net value, resulting only in a redistribution of wealth between sectors. Total real net wealth may remain largely unchanged, being the sum of real domestic assets, the real present value of future discounted income flows, and net (positive or negative) claims on foreigners, the domestic real value of which will depend on how exchange rates change in response to changes in inflation. Inflation-

¹⁶ The net effect actually depends on whether depositors expected the transfer or not, as well as on the extent to which they discount future tax increases needed to pay for the transfer. Full discounting is unlikely in transition economies where economic sophistication among the population is likely to be lower than in developed market economies.

¹⁷ In principle, demand need not change if savers fully expected the government bail-out and they fully discount future tax payments.

¹⁸ This assumes no indexation of liabilities.

induced changes in interest rates will counteract these tendencies as investors try to protect themselves against continued inflation.

Bibliography

Baer, Herbert and Klingebiel, Daniels:

Systemic Risk When Depositors Bear Losses: Five Case Studies, draft paper, November 1994.

Banerjee, Abhijit V.:

"A Simple Model of Herd Behavior", **Quarterly Journal of Economics**, 1992, p. 798-817.

Calomiris, Charles W. and Gorton, Gary:

"The Origins of Banking Panics: Models, Facts, and Bank Regulation" in R. Glenn Hubbard: **Financial Markets and Financial Crises. The University of Chicago Press, Chicago and London**, 1991.

Cheng, Andrew:

Bank Restructuring: Techniques and Experience, unpublished draft, 1994.

Davis, E.P.:

Debt, Financial Fragility, and Systemic Risk, Clarendon Press, Oxford, 1994.

Gale, Douglas:

Informational Capacity and Financial Collapse, LSE Financial Markets Group Discussion Paper No. 147, London, 1992

Gorton, Gary and Rosen, Richard:

Corporate Control, Portfolio Choice, and the Decline of Banking, NBER Working Paper No. 4247, 1992.

Kaufman, George G.:

"Bank Contagion: A Review of the Theory and Evidence", **Journal of Financial Services Research**, 1994, p. 123-150.

Lang, Harry H.P. and Stulz, René M.:

"Contagion and Competitive Intra-Industry Effects of Bankruptcy Announcements", **Journal of Financial Economics**, 1992, p. 45-60.

Mishkin, Frederic S.:

Asymmetric Information and Financial Crises: A Historical Perspective, NBER Working Paper No. 3400, 1990.

Mishkin, Frederic S.:

Anatomy of a Financial Crisis, NBER Working Paper No. 3934, 1991.

BANK OF FINLAND DISCUSSION PAPERS

ISSN 0785-3572

1/97

Peter Nyberg **Macroeconomic Aspects of Systemic Bank Restructuring**. 1997. 30 p.
ISBN 951-686-541-0. (KASI)