5

Macroeconomic Consequences of an Unsound Banking System

A banking system that is in distress can distort allocative efficiency and macroeconomic policy implementation, even though it can continue to function as long as it remains liquid. In addition to complicating monetary management, banking system unsoundness can also impose high costs in the form of fiscal obligations and other macroeconomic distortions.

Behavior of Unsound Banks

In analyzing the policy implications of bank unsoundness, it is important to bear in mind the behavioral patterns observed in unsound banks that affect the banking system's interactions with and responses to policy instruments. Banks that have lost most or all of their capital face a different incentive structure from sound banks, and competition from insolvent banks can pose threats to the financial soundness of their competitors. As owners and managers try to recoup their losses, moral hazard increases, particularly when managers or owners do not have their own funds at stake.[21] An unsound bank may offer higher interest rates than competitors to draw in deposits to pay operating expenses, may resort to outright gambling by choosing high-risk transactions, or may incur higher risk through adverse selection.[22] In many cases, unsound banks become captive to insolvent debtors or carry a portfolio of loans to related borrowers, who have no intention of repaying their debts. Unable to declare loans in default lest they acknowledge their own insolvency, such banks may continue to lend to nonperforming borrowers or to capitalize

[21] Moral hazard is the tendency for people to be less careful when they do not expect to bear the full cost of their behavior.

[22] To raise profitability, a bank would be inclined to charge higher interest rates to borrowers. Adverse selection occurs if it fails to adequately screen customers and attracts and selects only those customers looking to fund high-risk projects.

interest on these borrowers' loans (a process sometimes referred to as "evergreening"). As the situation deteriorates further and prospects for long-term employment are reduced, insiders may turn to fraud and theft.

Thus, banks that are desperate to raise income or that have become overburdened with nonperforming assets may spiral into insolvency with increasing speed. As an unsound bank searches for liquidity at any cost or is willing to assume any risk, it will tend to be less responsive to interest rates and other market signals, or may exhibit perverse responses. Such behavior, when sufficiently widespread, has important implications for the reactions of economic agents, the functioning of financial markets, the efficiency of financial resource use, the transmission of monetary policy, and the ultimate resolution costs. The degree of unsoundness at which these effects take hold will vary from situation to situation; where unsoundness is systemic, the macroeconomic effects are likely to be significant.

Impact on the Real Sector

A sound banking system contributes to economic growth by mobilizing financial resources and by channeling them to activities with the highest expected rates of return for a given level of risk. The banking system also provides transaction services and payment systems, which increase the efficiency of economic activities. In addition, banks provide expertise in project screening and corporate governance, which aids in the efficient use of resources.

A weak banking system is unable to intermediate savings effectively. Across a range of countries that experienced banking crises, growth and economic efficiency have suffered. It is often difficult to separate the effects of banking sector problems on the real economy from a decline in real economic activity that may have contributed to the banking sector problems in the first place. Nevertheless, the experiences of the countries in the sample, as shown in Table 5, suggest that episodes of fragility in the banking sector have been detrimental to economic growth in the countries concerned.[23]

The lack of a sound banking system is particularly severe in developing and transition economies in which equity and capital markets are underdeveloped and do not provide alternative financial instruments. The soundness of intermediation is as important as its volume. In several Latin American countries, despite a rising volume of intermediation, the reduced efficiency of investment intermediated by unsound banking and financial systems apparently contributed to a negative relationship

[23] See also Johnston and Pazarbaşioğlu (1995).

Table 5. The Impact of Bank Unsoundness on the Real Sector[1]

Argentina (1980–82): Interest rate spreads were high. Credit and payments systems were disrupted. Growth was reduced after the 1980–82 crisis. There was a substantial redistribution of wealth in favor of debtors.

(1995): The sharp growth in real GDP following convertibility was reversed to a recession in 1995.

Bangladesh (1980s–present): Spreads are wide and reduce intermediation.

Bolivia (1986–87): High interest rates and heightened caution on the part of liquid banks limited the access of small businesses to credit.

Brazil (1994–present): High interest rates and increased caution on the part of the banking system limited access to credit.

Chile (1981–87): Growth was reduced from an average of 8% a year in the five years before the crisis to 1% in the five years after it. The payments system was disrupted.

Czech Republic (1991–present): There were high spreads between domestic deposit and loan rates and between rates on domestic and foreign funds. High levels of nonperforming loans reduced banks' ability to extend credit.

Egypt (1991–95): Interest rate spreads were high.

Estonia (1992–95): There was already a severe recession before the banking crisis occurred; it is not clear whether the banking problems exacerbated the downturn.

Finland (1991–94): Growth averaged 4.5% in the three years before 1990, zero for 1990, and –4.0% in the following three years. Unemployment reached a peak of 18.4% in 1994.

France (1991–95): No apparent impact.

Ghana (1983–89): Low levels of intermediation, inadequate resource mobilization, and a large stock of nonperforming assets reduced banks' flexibility to lend to new customers. Favorable returns on risk-free investments also discouraged lending. Economic growth fell from 3% in the five years before the crisis to 2.5% in the three years after it.

Hungary (1987–present): Stabilization and growth were impeded. Despite enacting bankruptcy legislation, enterprise restructuring was hampered by inadequate reforms to bank lending policies.

Indonesia (1992–present): High spreads led to disintermediation and a growth in nonbank financial institutions.

Japan (1992–present): Weak bank balance sheets have tended to undermine public confidence and may have limited the speed of economic recovery. Loan rates rose relative to funding costs.

Kazakstan (1991–95): Real interest rates became positive. A lack of competition and perceived weakness in the banking system induced very high interest rate spreads.

Kuwait (1990–91): Banks' hesitancy to lend and uncertain domestic investment prospects reduced growth.

Latvia (1995–present): There was a decline in economic activity, but it was not as sharp as the 20% decline observed in the monetary aggregates.

Table 5 *(continued)*

Lithuania (1995–present): There was a credit crunch, especially in the agricultural and energy sectors.

Malaysia (1985–88): A secondary mortgage market to aid bank liquidity was established. The crisis caused high real interest rates as banks increased their margins to cover the cost of their nonperforming loans. This contributed to disintermediation and impeded investment.

Mexico (1994–present): Real interest rates are high and are affecting the repayment capacity of borrowers. It is estimated that credit to the private sector declined by about 20% in real terms during 1995.

Norway (1987–93): Growth fell from an average of 3.2% in the five years before the crisis to 1.7% in the two years after it, but not solely as a result of the banking crisis.

Pakistan (1980–present): High interest rates and credit shortages for the private sector diminish investment and growth.

Paraguay (1995–present): There was a flight to quality, reducing the availability of bank funding. Economic growth slowed toward the end of 1995 owing in part to the disruptive effects of the banking problems.

Philippines (1981–87): Real interest rates rose and there was a recession and a credit crunch. Growth fell from an average of 6% a year in the five years before the crisis to −1.25% in the following five years.

Poland (1991–present): Lending to enterprises was viewed as risky and banks preferred to lend to the government. Thus financing to the real sector declined sharply from 1991 to 1993. Banks raised interest rate spreads in an attempt to earn their way out of trouble.

Russia (1992–present): The weak banking system has not mobilized savings efficiently and has a limited ability to intermediate savings to private sector investors. Banks have focused on short-term investments in foreign exchange and government securities.

Spain (1977–85): Financial intermediation costs rose (both interest margins and operating expenses), imposing an increased burden on enterprises.

Sweden (1990–93): Small borrowers complained of high interest rates and restricted access to credit. There was an economic downturn, but it is difficult to separate the effects of the banking crisis from those of the currency crisis and the broader European recession.

Tanzania (1988–present): The cash-based economy has hindered growth. There is little intermediation. The deposit-to-GDP ratio declined from 1980–88 and much of those funds that were available were misallocated. The payments system is slow.

Thailand (1983–87): Bank spreads fell, and there was a sharp decline in finance company loans to the private sector. The effects are difficult to gauge but growth slowed in 1984–85.

Turkey (1994): Real rates are high and a flight to quality and tiering have occurred. Responding to a number of factors, output contracted sharply in 1994, but recovered quickly in 1995.

Table 5 *(concluded)*

United States (1980–92): The real estate markets in several areas of the country experienced a cutback in credit supplies as a result of the problems in the thrift industry, which may have contributed to the decline in property prices in the early 1990s. The credit crunch arising from weak bank capitalization slowed recovery from the 1990–92 recession.

Venezuela (1994–present): Interest rates turned sharply negative following the reintroduction of exchange controls; nevertheless, the fall in imports disrupted production. The demand for credit remained strong.

Zambia (1994–present): The wealth effect of deposit losses diminished demand and growth. There was a credit crunch for some borrowers, but intermediation in general and the payments system were not impaired.

[1] Years in parentheses denote the period of banking problems.

between growth and financial intermediation in the 1970s and 1980s.[24] In many economies in transition, private sector development and the transition process have been hindered by vulnerable banking systems.[25]

A sound banking system in a competitive environment provides financial intermediation at low cost. A competitive environment limits the ability of individual banks to increase spreads; banks would have little scope to charge higher interest rates except by lending to higher-risk borrowers. In the competitive U.S. system, troubled thrifts in the 1980s lowered spreads by aggressively bidding for deposits and reducing loan rates to attract customers. Excessively low spreads as institutions try to grow out of their problems by garnering market share at any cost are one manifestation of the pathology of unsound banks.

In other cases, especially in less competitive markets, weak banks may widen their spreads to cover the cost of nonperforming loans, penalizing depositors and discouraging investment. For example, in 1985–88 Malaysian banks did not reduce lending rates even when general liquidity conditions improved and deposit rates fell.[26] Attempts to compensate for loan defaults may explain the rise in loan rates relative to funding costs for Japanese banks beginning in 1990.[27] High interest rate spreads characterized periods of banking sector problems in most of the countries in our sample.

A widening of spreads and a rise in lending rates may occur even in a relatively competitive banking market if unsoundness is widespread or

[24] De Gregorio and Guidotti (1992).
[25] Borish, Long, and Noël (1995).
[26] Sheng (1992).
[27] Bank of Japan (1994), p. 50.

systemic. When most banks share the same problems, such as high levels of nonperforming loans, the interest spread reflects the high cost structure of banking throughout the sector. Montes-Negret and Papi (1996) provide illustrative calculations showing how break-even spreads rise with the ratio of nonperforming loans to assets. Wider spreads and higher lending rates allow banks to recover profitability, but they also deter the investment needed to support faster macroeconomic recovery. Galbis (1993) examined the role of banking market structure and financial fragility in bouts of high real interest rates following financial liberalization. That study found that unsound banking practices, particularly lending to companies in distress, contributed to high real interest rates in Chile and the Philippines following the liberalization of interest rates in those countries.

The stock of nonperforming loans in bank portfolios will also limit the amount of credit available for new and better borrowers. An unsound bank may continue lending to unprofitable enterprises with which the bank has had a long-term relationship, or to insolvent debtors to prevent defaults that would in turn result in open insolvency of the bank. This has been the experience in a number of countries in our sample, particularly formerly centrally planned economies.[28] If depositors shift their funds out of unsound banks into cash or other financial instruments, the availability of credit will be further reduced; a pronounced flight to quality occurred in several of the countries in the sample. As Calvo and Coricelli (1994) show, excessive credit contraction can shift the economy to a lower output path; this evidently contributed to the persistence of output declines in Poland and several other Central and Eastern European countries in the first stages of transition.

A bank with insufficient earnings may have to use deposits to cover its operating expenses, thereby distorting its role as an intermediary and decreasing its net worth. Unsound banks will have reduced incentives to avoid riskier projects, since any loss in excess of already depleted capital will be borne by depositors, the deposit insurer, or the public sector. The perverse incentive structure facing unsound banks can result in adverse selection of borrowers and further increases in real interest rates, hampering the efficient allocation of credit resources and contributing to high costs of intermediation and to output levels that are below potential.[29]

The magnitude of business cycles will depend in part on the soundness of the banking system; weak banks may be forced to call loans or sell assets and collateral into a declining market, further exacerbating a cyclic downturn.[30] In extreme cases, where unsoundness results in a financial crisis,

[28] See also Perotti (1993), Hinds (1988), and Calvo and Kumar (1994).
[29] See de Juan (1991).
[30] See Alexander and Caramazza (1994).

the resulting uncertainty lowers the expected rate of return on real assets, with consequent negative effects on asset markets and output.[31] It may also result in a breakdown of the payments system, reducing the efficiency with which almost all domestic and foreign trade transactions are conducted. Even where the banking system was not the key factor in precipitating a financial crisis, a weak and vulnerable banking system may impede recovery and jeopardize macroeconomic stability; the 1995 experience of the larger Latin American economies is a case in point.

In some economies, banks play an important role in helping assess the value of corporate projects, monitoring borrowers, and enforcing financial discipline, thus contributing to corporate governance.[32] When banks are poorly managed or are financially impaired, the economy is deprived of a key source of these services.[33] For example, systemic unsoundness in economies in transition has severely limited the role banks can play in reforming the operations and governance of the corporate sector in those countries.[34] This deficiency is of more significance in developing and transition economies that do not have well-developed credit monitoring agencies and lack a broad base of managerial talent. Even in industrial countries, some enterprises, particularly small and medium-sized enterprises, are likely to feel the impact of reduced bank contributions to financial discipline and corporate governance.

Monetary Policy Implications

The banking system is the primary conduit for transmitting monetary policy signals. Effective implementation of monetary policy requires that the banking system be able to expand and contract its aggregate balance sheet in response to policy initiatives without adversely affecting the efficiency of intermediation or depositor confidence. No matter what the specific objectives of monetary policy, an unsound banking system affects the instruments and results of monetary policy as well as the authorities' ability to formulate and conduct monetary policy. This is true regardless of whether quantitative monetary policy formulation focuses on the banking system as a whole or only on the central bank, since the effects on the macroeconomy of changes in the central bank's balance sheet are mediated through the banking system.

The importance of the competitive structure of the banking system for monetary policy has long been recognized and has been the subject of

[31] Brunner and Meltzer (1988).
[32] See Prowse (1994) and Aoki and Patrick (1994).
[33] See Berglöf (1995).
[34] See Fries and Lane (1994) and Dittus (1994).

analysis, although firm conclusions are difficult to draw because of the model-dependency of most studies.[35] On the other hand, the importance of soundness for monetary policy implementation has not received much analytical attention. Recently, the significance of banking system soundness for monetary policy was recognized by the June 1995 amendments to the European Union (EU) banking directives, which permit exchange of supervisory information with monetary and payments system authorities. The quality of the banking system portfolio affects the relationships underlying the monetary policy process, including the reliability of monetary statistics, and the effectiveness of monetary instruments and transmission mechanisms.

Relationships Underlying the Monetary Policy Process

The practical implementation of monetary policy usually requires the existence of relatively stable relationships between monetary instruments, operating targets, intermediate targets or indicator variables, and ultimate policy objectives.[36] Disruption of the financial system will affect these relationships; as a banking system becomes more insolvent, the links between operating targets, such as interest rates, intermediate targets, such as money or credit aggregates, and policy goals, such as price stability, will be altered.

In some operational frameworks for monetary policy, the focus is on established relationships between reserve money and broader aggregates or macroeconomic objectives. However, variations in bank reserve holdings and in public preferences for financial instruments, which often accompany increasing unsoundness of banks, can destabilize benchmark relationships such as the money multiplier. As shown in Table 6, money demand or monetary relationships were unstable in 15 of the cases studied (see also the quantitative studies in the annex to Part II). Money multipliers in Argentina, Chile, Ghana, the Philippines, and Uruguay increased during periods of unsoundness prior to crises. In contrast, the 1992 Estonian banking crisis precipitated a rise in the currency-to-deposit ratio and a fall in the base money multiplier. Even when the operational target is a narrow money aggregate that is under the central bank's control, the linkage to policymakers' ultimate objectives will be weakened by the same factors. The stability of the money multiplier process has broken down for many industrial countries because of financial innovation and consequent structural changes in the demand for reserve money. These were not always directly linked to banking sector problems. There is some

[35] See, for example, VanHoose (1988) and Faig-Aumalle (1987).

[36] For a discussion of the linkages between these variables, see Alexander and Caramazza (1994).

Table 6. Consequences of Bank Unsoundness for Monetary Policy[1]

Argentina (1980–82): Emergency credit to banks rose to 100% of their reserve holdings. Inflation increased rapidly after the problems of the early 1980s. The money multiplier rose before the 1980–82 crisis and became volatile in the 1980s, making monetary control difficult. Interest controls were reintroduced.

(1989–90): The excess reserve ratio became volatile, and central bank aid to troubled institutions rose to 110% of reserve money in 1992.

(1995): Reserve requirements were reduced to aid banks and the differential between buying and selling pesos was removed to reduce bank transaction costs.

Bangladesh (1980s–present): Capitalizing interest distorts the monetary statistics. Liquidity management is complicated by the recapitalization efforts.

Bolivia (1994–present): Problem banks requiring liquidity support from the central bank placed an excessive burden on open market operations to control overall credit. Bank support was sterilized by accumulating public sector deposits.

Brazil (1994–present): The central bank's results deteriorated as a result of the mismatch in interest rates on assets that were mainly denominated in foreign currency and on liabilities that were derived from sterilization operations.

Chile (1981–86): Inflation rose from 9.5% in 1981 to 20.7% in 1982 and to 26.5% in 1985, and remained above 10% until 1994. Because of massive support programs that were mostly financed through the placement of central bank paper, the central bank's operational losses surged to 18% of GDP in 1985 and declined only slowly in the following years. The money multiplier rose early in the crisis and became volatile, making monetary control difficult; credit to the private sector rose sharply before the crisis.

Czech Republic (1991–present): The transmission of monetary policy was impaired as unsound banks became less interest sensitive and the interbank market became segmented. Market-based central bank instruments had uneven effects across the banking system, as liquidity surpluses at some banks coexisted with liquidity shortages at other banks.

Egypt (1991–95): High interest rate spreads. Despite large fluctuations in the level of commercial banks' excess reserves, interest-rate stickiness persists, and inhibits market responses.

Estonia (1992–95): The currency board arrangement protected monetary policy from expansion as a result of the banking problems. The economy relied more heavily on cash payments, so the currency-to-deposit ratio rose and the money multiplier fell.

Finland (1991–94): The money multiplier rose sharply before the crisis. Continued multiplier volatility made monetary control difficult.

France (1991–95): No effects have been discerned.

Ghana (1983–89): Credit controls were ineffective owing to the rollover of nonperforming loans. Bank deposit and lending rates were unresponsive to open market operations. Mopping up excess reserves has proved costly. The high level of currency circulating outside banks limited the effectiveness of monetary policy. The money multiplier rose sharply from 1988 to 1992.

Hungary (1987–present): The use of indirect instruments of monetary policy was impeded by the rapid growth of nonperforming loans.

Table 6 *(continued)*

Indonesia (1992–present): Concerns over bank profitability affected the authorities' willingness to raise domestic interest rates for monetary policy purposes and may have been a factor behind the increasing use of moral suasion to curb the growth of bank credit.

Japan (1992–present): Monetary policy was eased and interest rates were reduced in 1995 to spur economic growth. The low discount rate has contributed to banks' current profitability, allowing massive loan write-offs. The Bank of Japan contributed some of the funds for bank and credit union resolution, and the Deposit Insurance Corporation can borrow from the Bank of Japan.

Kazakstan (1991–95): The interbank market is limited to banks that meet prudential standards. A broader set of banks has access to the central bank credit auction. Some small banks are excluded from both markets. This has resulted in a divergence of borrowing rates across banks.

Kuwait (1990–91): Credit to the private sector increased owing to the capitalization of interest on nonperforming loans.

Latvia (1995–present): The Bank of Latvia provided limited liquidity support to troubled banks. There was a sharp fall in the demand for money, and broad money declined by 20%.

Lithuania (1995–present): Liquidity support, under the currency board arrangement, was kept within the prescribed margins.

Malaysia (1985–88): Liquidity and reserve requirements were reduced during the crisis to aid bank profitability. Deposit rates were freed to give banks greater flexibility. Controls on interest rates were reimposed from 1985–87. There was a flight to quality and cash, which complicated the conduct of monetary policy.

Mexico (1994–present): Interbank interest rates rose to 90% in March 1995. At the peak of the crisis in April 1995, the Bank of Mexico had to provide liquidity in U.S. dollars in the amount of US$3.8 billion to banks that were unable to roll over their foreign currency obligations. These loans were repaid by September. Loans to banks that required intervention totaled MexN$32 billion (1.9% of 1995 GDP). The demand for base money declined more than expected, which complicated the setting of intermediate targets.

Norway (1987–93): The Norges Bank placed deposits with commercial banks at subsidized rates. The money multiplier rose before the crisis and then fell.

Pakistan (1980–present): Monetary policy has had to face a high volume of nonperforming loans and high spreads. Bank weakness is constraining a more aggressive use of interest rate policy to tighten monetary conditions.

Paraguay (1995–present): The central bank provided liquidity support to banks in difficulty; this support was largely sterilized.

Philippines (1981–87): Inflation increased and the money multiplier rose sharply during the crisis. Controls on interest rates were reintroduced during the crisis. The emergency credit that was provided conflicted with monetary policy and inflation spurted to 50% in 1984. The money demand function shifted downward.

Poland (1991–present): Policy effectiveness is hampered by the low level of monetization. (M2 was only 22% of GDP in 1993.)

Table 6 *(concluded)*

Russia (1992–present): The weak state of part of the banking system has led to market segmentation and contributed to the temporary collapse of the interbank market in August 1995, which required the central bank to inject liquidity temporarily.

Spain (1977–85): The central bank provided liquidity support to banks in distress and loans to the Deposit Guarantee Fund. The increase in central bank credit contributed to higher inflation.

Sweden (1990–93): No direct effect was observed; interest rates were raised sharply in an ultimately unsuccessful attempt to defend a weak currency, despite the impact on the banking sector.

Tanzania (1988-present): Banks' inability to meet reserve requirements in 1989–92 made the reserve base unpredictable and weakened monetary control. There was a poor response to indirect instruments and to interest rate signals. The effectiveness of credit controls was reduced owing to ongoing losses. The public relies heavily on currency for transactions.

Thailand (1983–87): The central bank had to sterilize its liquidity assistance. Nevertheless, monetary policy was eased, banks' reserves and liquidity grew quickly, and interest rates fell, which aided bank profitability. Money demand increased.

Turkey (1994): There is little stability in the intermediary targets. The exchange rate is probably the key variable for transmission, and it is not clear whether interest rates are an important channel for monetary policy. The central bank can affect the interbank market and uses reverse repos to mop up liquidity and counteract capital inflows.

United States (1980–92): Monetary policy was eased in August 1982 in response to the international debt crisis that seriously afflicted the banking industry. Some analysts claim that monetary policy was also eased in the early 1990s to aid banks, but that easing was also consistent with the need to counter the recession and with the lower inflation that was being experienced.

Venezuela (1994–present): Credit to the private sector as a share of GDP, which had been declining and volatile, rose immediately before the crisis, making monetary control difficult. The money multiplier rose sharply at the start of the crisis and then fell. Misinformation impeded policy. The use of reserve requirements is limited as they are unremunerated and costly for banks. The central bank eased policy to aid banks. Only half of the liquidity support was sterilized; the rest contributed to price and exchange pressures.

Zambia (1994–present): Liquidity support compromised monetary policy. Reserve requirements were high but were reduced early in 1995.

[1] Years in parentheses denote the period of banking problems.

evidence, however, that credit supply problems in the early 1990s reduced the usefulness of M2 and M3 as policy guides in the United States (see Akhtar, 1993–94).

In other frameworks, the focus may be on broader money supply and demand functions. However, as a banking system becomes unsound, the supply of broad money will be affected by changes in intermediation due

to the instability or erratic performance of unsound banks. The demand for money will be altered by factors such as depositor flight to higher quality stores of value, both domestic and foreign, and the rise in uncertainty in payment systems and credit market conditions. Resulting portfolio shifts may change the interest elasticity of demand for currency and deposits, and the value of monetary aggregates as target variables may be reduced. Shifts in interest elasticities for currency (generally negative) and for M2 (generally positive) have been documented for Argentina, Chile, the Philippines, Spain, and Uruguay following banking crises.[37] Shifts in money demand were also observed. After the banking crisis of 1981, demand for real M3 in the Philippines declined, rendering movements in this aggregate unreliable as a policy indicator; central bank overestimation of actual M3 demand appears to have contributed to loose monetary policy and rising inflation in the subsequent years.[38]

As has been often pointed out, the impact of financial liberalization and a shift to the use of indirect instruments of monetary policy on the stability of monetary relationships will be affected by banking sector fragility.[39] Where banks are sound, a new set of relationships can be expected to emerge once agents and institutions have adjusted to the new environment following liberalization. This adjustment process, though, requires consistency in responses to economic signals, which cannot be expected from an unsound banking system.

Interest rate movements are often used as indicator variables reflecting supply and demand conditions in financial markets. Where banks have incentives (and, owing to limited competition, the ability) to widen margins or assume greater risk to generate short-term cash flow, it will be difficult to determine whether a rise in the level of market interest rates represents real changes in the supply of and demand for funds for productive investments. The relative contributions of the opportunity cost of funds and risk premiums in determining the real interest rate will be altered. Market segmentation between sound and unsound banks will make interest rate price signals still more difficult to interpret, as money market conditions and interest rates may reflect liquidity or solvency deficiencies at particular banks rather than the overall stance of monetary policy. For example, in Venezuela in 1994 the deposit rates at sound banks fell sharply while rates offered by unsound banks rose.

The data needed for the quantitative formulation of monetary policy may be inaccurate in unsound banking systems. There is often extensive overvaluation of loans and other assets, nonperforming loans are routinely

[37] Sundararajan and Baliño (1991).
[38] Nascimento (1991).
[39] See Hargraves and Schinasi (1993) for a discussion of the impact of liberalization on money demand.

misclassified and improperly provisioned, and interest is frequently capitalized. In many countries, loans that are renewed on the basis of capitalization of past unpaid interest are considered to be new loans. For example, capitalization of interest is estimated to have accounted for 100 percent of credit expansion in Poland in 1991.[40] Such practices, which result directly from poor accounting and loan valuation standards but are almost invariably associated with unsound banking systems, make it difficult to ascertain the true levels and rates of change of domestic credit.

These factors complicate monetary programming and may contribute to policy errors.[41] Because quantitative measures of net domestic assets include both domestic credit and other items that would be affected by improper accounting for loans and by bank losses, focusing on net domestic assets rather than net domestic credit may ease the task of quantitative targeting. However, distortions due to the behavioral effects of nonrepayment, rollovers, and loan restructuring introduce an additional wedge between the growth of net domestic assets and real sector effects.

Monetary Instruments and the Transmission Mechanism

As a banking system becomes increasingly unsound, normal relationships between policy instruments and targeted objectives become less predictable and may be perverse in some cases. This occurs because unsound banks that are less able to control their balance sheets are less sensitive to an increase in their cost of funds and are more willing to accept risky borrowers, who will pay high rates that discourage more creditworthy customers.

Regardless of whether monetary policy is transmitted through credit channels or interest rate channels, or both, the importance of the soundness of the banking system in shaping the effectiveness of the transmission mechanism will not be deminished. A credit channel for policy transmission will become less efficient, as effective credit demand becomes relatively less price-elastic; credit availability will tend to be more dependent on bank capitalization and less responsive to policy instruments.[42] For example, weak bank capital positions contributed to the credit slowdown in the United States in 1989–92. In the United States, monetary policy action to increase bank resources also failed to produce additional bank lending because banks were constrained by binding capital ratios.[43] Weak bank balance sheets in Japan limited the scope for strengthening the eco-

[40] See Thorne (1993).

[41] The basics of monetary programming are outlined in IMF (1987) and Swiderski (1992).

[42] The literature on the credit channel for monetary policy transmission is surveyed in Alexander and Caramazza (1994), Dimsdale (1994), and Gerder (1988), among others.

[43] See Akhtar (1993–94) for a summary of several studies.

nomic recovery in the mid-1990s. The process of bank recapitalization and loan consolidation in formerly centrally planned economies exacerbated output downturns during the transition by starving productive enterprises of credit.[44]

Transmission of monetary policy through the money supply and interest rates will be hampered by illiquid or insolvent banks, because of their inability to adjust their reserves or lending in response to monetary policy actions, and by the reduced sensitivity to and predictability of responses to interest rates. Banks that do not respond to market forces cannot be relied upon to transmit interest rate changes. Cottarelli and Kourelis (1994) studied the speed of policy transmission through interest rates in a sample of industrial and developing countries and found that less efficient policy transmission is associated with banking systems in which market forces are weak, particularly those dominated by state banks. In more extreme cases of unsoundness, the supply of credit may become less constrained by capital or interest rates, as banks ignore risk factors in their attempts to generate income. Credit demand and bank lending also become insensitive to interest rates when banks permit borrowers to capitalize interest payments or when borrowers do not expect to repay loans. For example, in Bangladesh, successive rounds of loan write-offs and an inefficient judicial framework have weakened some debtors' incentives to service their debts in a timely fashion, and in many economies in transition, expectations of future loan write-offs have fueled credit demand by state-owned enterprises.

Indirect instruments of monetary policy take effect through their initial impact on bank liquidity and interbank interest rates. Banks with limited balance sheet flexibility are unlikely to respond appropriately to policy impulses. For example, reserve requirements or clearing account overdraft limits will not be fully effective if unsound banks are not able to respond to an increase in the reserve ratio or meet interbank settlement obligations from their own resources. There is likely to be an increasingly imbalanced distribution of excess reserves among banks, with less sound banks being less liquid in part owing to a "flight to quality" in the interbank market. Official efforts to recycle surplus banks' excess reserves outside the central bank, as was done in Argentina in 1995, and decreed, but not implemented, in Venezuela in 1994, typically require official guarantees and may contaminate sound banks and ultimately prolong problems.

Unsound banks may maintain deficient reserves even at a penalty; shortfalls in required reserves despite liquidity support operations by the central bank and high penalties for reserve deficiencies have characterized problem banks in Bolivia, Latvia, and Tanzania, among other countries.

[44] See Calvo and Kumar (1994).

While banks that cannot satisfy reserve requirements should be unable to contribute to credit expansion, control over the supply of money and credit will be impaired to the extent that the central bank is forced to accommodate reserve shortfalls. Meeting a monetary target could require, other things being equal, a higher reserve ratio to compensate for noncompliance by unsound banks. An increase in reserve requirements to sterilize the liquidity effects of bank unsoundness is not optimal, as it would adversely affect the remaining sound banks.

Moreover, the money market cannot be expected to lend to unsound banks trying to make up reserve shortfalls. The resulting segmentation of markets can further impede systemwide monetary management and may eventually disrupt the functioning of the financial markets through which monetary policy is transmitted. The markets for money and securities, and the payment systems that support these markets, depend on banks being able to deal routinely and confidently with one another. The availability of suitable collateral, such as treasury bills, can help in integrating interbank markets. However, banks facing solvency or liquidity difficulties may not be able to acquire or retain such collateral. When a substantial segment of the banking system cannot be relied upon, interbank markets may send extreme signals or may rapidly break down.

Interbank rates in Venezuela in early 1994 diverged widely between banks perceived as unsound and those perceived as sound. In Paraguay in 1995, those banks (mainly foreign) that increased deposits at the expense of those perceived as vulnerable were reluctant to lend to the latter through the interbank market. Russian interbank activity was interrupted owing to concerns about counterparty soundness in August 1995.[45] Breakdowns in correspondent banking relationships were also observed during the problems experienced by the U.S. saving and loan associations.[46] In some cases, such problems have impeded the development of these markets altogether, limiting the authorities' ability to implement monetary policy effectively. The Croatian money market has failed to advance beyond central bank-guaranteed overnight lending in part due to the perennial illiquidity and potential insolvency of several large banks. In Zambia, a two-tier market has developed, with larger banks trading among themselves and smaller banks relying on central bank overdrafts.

Liquidity management through open market operations will be blunted when the banking system is unsound. The impact on credit expansion of open market sales will be reduced by the interest rate inelasticity of demand of high-risk borrowers, requiring a higher interest rate to absorb a given amount of funds. Open market operations in segmented markets

[45] See Rosett (1995).

[46] Clair, Kolson, and Robinson (1995).

may lead to unpredictable results. For example, in Venezuela in 1994, the market became segmented as sound banks reduced interest rates to avoid attracting deposits they could not deploy. The central bank sought to raise rates through the auction of its own securities, but rates dropped sharply nonetheless, as the sound banks placed their excess liquidity in central bank securities.

Instruments for injecting liquidity, such as open market operations, rediscount facilities, and credit auctions, also become less effective. Where unsound banks lack sufficient market instruments to participate in open market operations, attempts to provide liquidity to the banking sector may be stymied as liquidity will continue to accumulate at the sound banks and will not be dispersed across the banking sector due to interbank market segmentation; this was the experience in the Czech Republic, among others. Lender-of-last-resort accommodation may be provided to particular banks. However, operation of such accommodation could be problematic because of the difficulty in distinguishing between illiquid and insolvent banks.[47] A credit auction or similar market-based liquidity facilities may be distorted by adverse selection and moral hazard, since unsound institutions may be willing to borrow at any price to avoid illiquidity.[48] In such circumstances, the technical design and operation of market-based instruments, such as credit auctions, must limit access by unsound banks and promote collateralized transactions.[49]

With such adjustments, the desired liquidity impact of central bank market-based instruments can be achieved, but often at a price of much higher interest rates than would apply in a situation where banks are sound.[50] To minimize interest rate volatility, a mixture of instruments might be needed simultaneously to inject as well as absorb liquidity.

Although, in cases where indirect instruments have lost effectiveness, it may be desirable to employ direct instruments of monetary control on a temporary basis, direct instruments, in particular credit controls, are also less effective when applied to an unsound banking system.[51] Credit ceilings can become ineffective when banks roll over their portfolios of bad debts. For example, rollovers contributed to credit ceilings becoming ineffective in Ghana from 1983–86.[52] Credit ceilings also cannot be relied

[47] Where there is a financial and operational restructuring plan in place, special lender-of-last-resort lending can bridge the gap produced by segmentation of the interbank market, while moving toward a resolution of the banking sector problems.

[48] See Mathieson and Haas (1995).

[49] See Saal and Zamalloa (1995).

[50] A rise in interest rates could result in adverse selection of borrowers and credit expansion rather than credit rationing; see Dooley and Isard (1992).

[51] This is in addition to the difficulties encountered in applying direct controls even in a sound system, which include the possibility for evasion and the distortion of resource allocation (see Alexander, Baliño, and Enoch 1995).

[52] See Kapur and others (1991).

upon to halt the growth of broad money because insolvent banks' losses contribute to an expansion of net domestic assets of the banking system, the counterpart to broad money. As long as banks are liquid, net domestic assets can continue to grow, with losses rather than performing credit as the counterpart to increased deposits. Interest rate ceilings may exacerbate credit misallocation and contribute to disintermediation and capital flight; this applies to sound and unsound banks alike. In some circumstances, direct intervention in bank management may be required.

When banks are extremely fragile, the application of monetary instruments tends to become asymmetric; it will be easier to loosen monetary policy than to tighten. In some cases, appropriate monetary policy action may not be taken or sustained for fear that it will contribute to a banking crisis. For example, in 1994, Mexico's concern about the potential for banking system losses due to the effects of higher interest rates may have contributed to the authorities' failure to raise interest rates sufficiently to defend the exchange rate,[53] and in 1996 Mexico's inflation targets were apparently tempered in part by concerns that a faster reduction in inflation would have adverse consequences for the banking system in the short term. The Venezuelan banking crisis resulted in pressure on the central bank not to permit interest rates to rise enough to accomplish the absorption of sufficient liquidity to forestall international reserve losses in the first half of 1994. Contractionary Federal Reserve policies in the United States the late 1980s may have been constrained by fears of financial crisis,[54] and Thai monetary policy may have been relaxed in 1986–87 to improve bank profitabiliry.[55]

In more extreme cases, monetary control may be suspended by giving unsound banks direct support through overdrafts on their central bank clearing accounts, reductions in central bank lending rates, or other means. Central bank support to ailing banks in Zambia in 1994–95 and Jamaica in the summer of 1995 resulted in liquidity expansion and contributed to exchange rate depreciation. The 1995 Paraguayan banking crisis resulted in net domestic credit and currency in circulation both exceeding their targets, in part due to the extension of central bank credit to banks that were subject to official intervention or that faced liquidity shortages.

In other cases, liquidity has been provided to the banking system as a whole. The Central Bank of Russia responded to the August 1995 interbank market crisis with large-scale purchases of short-dated treasury bills. Japan's principal response to banking problems in 1995 was to reduce the

[53] Calvo and Goldstein (1995).
[54] See Bosworth (1989) and Hausmann and Gavin (1995).
[55] Johnston (1991).

discount rate, resulting in rapid monetary expansion. On a wider scale, international monetary policy in the 1980s was strongly influenced by the perceived need to provide liquidity to debtor countries so as to prevent failures of the large internationally active banks.

Finally, the real sector effects of monetary policy adjustments will be determined in large measure by banking practices. Tighter monetary policies carry greater long-term negative effects, if banks do not allocate credit on the basis of the expected return of borrowers' projects and if reduced levels of credit are poorly distributed among borrowers. In this regard, distortions in the banking sectors probably increased the real costs of monetary austerity in economies in transition.[56] On the other hand, a loosening of monetary policy may increase credit availability, but if unsound banking practices result in misallocation of these resources, the real benefits of the policy stimulus will be reduced. For example, in Argentina, Mexico, and Peru, poor bank credit policies permitted an expansion of credit in the 1980s to accrue to government-related institutions. Instead of generating a corresponding expansion in real economic activity, the growth in credit contributed to severe inflation.[57]

Fiscal Impact

Banking problems can affect a country's overall fiscal balance from both the revenue and expenditure sides. Tax revenues from banks will be reduced to the extent that increased loan losses reduce banks' taxable income. The cost of sterilizing any central bank liquidity support to the banking system will involve direct costs for the government or reduced central bank profit transfers, unless unremunerated reserve requirements (which could further damage banks) can be increased. For example, in Paraguay, the annual cost of sterilization is expected to exceed 0.5 percent of GDP in 1995–96. Central bank profits will be reduced if the central bank takes over nonperforming loans or bankrupt institutions, as occurred in Chile, the Philippines, and Uruguay.[58] Revenue from the broader economy will also be reduced by lower levels of economic activity and output resulting from inefficient financial intermediation.

On the expenditure side, as unsound banks move to riskier assets and become less efficient in intermediating funds, the cost of financing any given deficit—and government debt-servicing costs generally—will be affected. The direction of effect would depend on whether or not the banking problems disrupt the government securities market and on the amount of bank financing that is used.

[56] Griffith-Jones (1995).

[57] See Rojas-Suárez and Weisbrod (1995b), p. 22.

[58] See Vos (1995) and Pérez-Campanero and Leone (1991).

More significant from the expenditure side is the buildup of direct liabilities arising from state ownership of insolvent banks and contingent liabilities arising from deposit or credit guarantees. In most cases of systemic unsoundness, the government will ultimately bear a large part of the cost of resolution. Among the countries in our sample, the recorded fiscal cost has ranged to almost 20 percent of GDP (Table 7). In some of these cases, the final cost has yet to be determined.

In fact, the exact size of the government's liability cannot be known with certaintyuntil the contingencies fall due, and will depend on whether a separate fund has been set aside for deposit insurance or other guarantees, as well as on how a resolution of the banking problem is effected. The government may provide support directly to banks, to the banks' borrowers, or to depositors. It may arrange closure, merger, or recapitalization, which may entail full or partial write-downs of owners' capital. Some of the costs to the government may be covered by future asset recovery and the proceeds from subsequent reprivatization of banks (if they were initially state owned). The extent and form of government support to the banking system will, of course, also have implications for monetary control.

The direct fiscal costs will increase if government entities have placed funds with banks that failed. For example, many local and regional authorities in Latvia had deposits at Banka Baltija, which failed in 1995.[59] The Bank of Zambia maintained foreign exchange deposits at Meridien Bank, which failed in 1995; the loss of these deposits had balance of payments implications. The Venezuelan Deposit Guarantee Fund and the Social Security Fund of Paraguay both placed a large portion of their assets in insolvent banks.

External Sector Effects

An unsound banking system will have repercussions for exchange rate stability and the balance of payments. The experiences of the countries in our sample suggest that external balance and banking sector problems are intimately linked (see Table 8). It is often difficult, however, to determine whether the exchange rate or capital flows are responding to banking sector problems or to the same underlying macroeconomic events or imbalances that caused the banking sector problems. Kaminsky and Reinhart (1996) reviewed the experiences of 20 countries that experienced banking and balance of payments crises and found that in about half, the banking crisis preceded the balance of payments crisis. The causal pattern was

[59] Tirnewell (1995).

Table 7. The Fiscal Effects of Bank Unsoundness[1]

Argentina (1980–82): The direct fiscal cost in 1981 was 4% of GDP.

(1989–90): Data are not available.

(1995): Assistance to the banking system required disbursing $800 million from two trust funds established for this purpose; some recoveries are expected.

Bangladesh (1980s-present): Government bonds equivalent to 4.5% of GDP were provided to banks. The interest costs of recapitalization hurt the budget and increased government debt.

Bolivia (1994–present): The treasury's domestic interest expenditure is increased because it bears the interest cost of the central bank's taking over 4.2% of GDP in bad loans.

Brazil (1994–present): The restructuring of the banking system will require tax measures and quasi-fiscal costs, which have not been quantified yet.

Chile (1981–86): The quasi-fiscal losses of the central bank amounted to 18% of GDP in 1985, 8% in 1986, 2% from 1987–90, and 1% since then. The fiscal accounts shifted into deficit temporarily under the impact of recession and the government-financed support programs for banks.

Czech Republic (1991–present): 12% of 1994 GDP was spent on bank support through 1994.

Egypt (1991–95): The cost is that of servicing $2.1 billion of ten-year bonds at the London interbank offer rate (LIBOR).

Estonia (1992–95): The cost of restructuring was borne by the budget and equals 1.8% of 1993 GDP.

Finland (1991–94): By the end of 1994, funds had been dispersed to the extent of 8.4% of GDP and an additional 6.1% of 1994 GDP was committed in guarantees.

France (1991–95): $1.5 billion has already been spent and $10 billion (0.6% of GDP) more is expected to be necessary.

Ghana (1983–89): 3% of GDP has been expended, $170 million of which was borrowed from international sources.

Hungary (1987–present): 9% of 1993 GDP was spent between 1992 and 1995. Interest on the debt issued to support banks amounted to 1.75% of GDP in 1995.

Indonesia (1992–present): The recapitalization of state banks through the budget and the conversion of Bank Indonesia's emergency credit into equity or subordinated debt cost 2% of GDP.

Japan (1992–present): Initial proposals for the 1996/97 budget were for expenditures amounting to approximately 0.2% of GDP. The final cost is as yet undetermined.

Kazakstan (1991–95): The cost is between 3% and 6% of the average of 1994 and 1995 GDP.

Kuwait (1990–91): The cost consists of interest payments on the $18 billion in bonds that were issued to purchase problem loans and the $10 billion in principal (approaching half of GDP in 1992) that is not expected to be recovered.

Table 7 *(concluded)*

Latvia (1995–present): Compensation to depositors of failed banks had a negligible effect on 1995 budget outlays, but banking problems did reduce government revenue. The government has issued bonds to recapitalize the savings bank.

Lithuania (1995–present): Funds have not yet been expended, but costs are expected to be high.

Malaysia (1985–88): The cost was equivalent to 4.7% of GDP.

Mexico (1994–present): Most of the costs of the support programs for banks (consisting of the government's purchase of the loan portfolio, the Unidad de Inversión (UDI) loan-restructuring scheme, and assistance to debtors and highway concessionaires) will have a fiscal impact stretched over several years but no immediate cash impact. The support program for banking system debtholders (ADE) introduced an interest rate subsidy to final borrowers who for one year will pay a capped interest rate. The government has decided to pay in cash the cost of the ADE (about 0.4% of GDP in 1995 and 0.3% of GDP in 1996). The cost (present value) is estimated at 6.5% of 1995 GDP.

Norway (1987–93): Direct fiscal costs of 3.3% of GDP were incurred in 1993; a large portion of this has subsequently been recovered.

Pakistan (1980–present): None have been recognized.

Paraguay (1995–present): Not known, but the central bank has already lent 3.5% of GDP to troubled banks.

Philippines (1981–87): 13.2% of GDP was contributed to banks as equity.

Poland (1991–present): Bonds issued to recapitalize problem banks amounted to 2% of GDP in 1993–94.

Russia (1992–present): There is an unknown contingent liability that is expected to be significant.

Spain (1977–85): The net cost of the crisis is estimated at 5.6% of GDP, 77% of which was covered by the Deposit Guarantee Fund and the Bank of Spain.

Sweden (1990–93): 4% of GDP was expended on resolving the banks' problems; a large portion of this has subsequently been recovered.

Tanzania (1988–present): The costs include interest paid on government restructuring bonds and direct central bank contributions to the resolution of Meridien Bank and a small, failed state bank. Bonds equivalent to 14.5% of GDP were provided to 2 banks. The final cost is estimated at between 6% and 7% of GDP.

Thailand (1983–87): The assistance provided increased the deficit. The annual interest cost of the assistance was estimated at 0.2% of GDP.

Turkey (1994): Difficult to quantify, but below 1% of GDP.

United States (1980–92): The treasury made a small loan to the bank insurance fund, which was rapidly repaid. The estimated cost of the thrift industry bailout is currently $130 billion (2.4% of 1990 GDP).

Venezuela (1994–present): 13% of GDP in 1994 and 17% through 1995. In addition, FOGADE (the deposit insurer) has an unfunded liability of $2.3 billion (5% of GDP).

Zambia (1994–present): The cost of the Meridien crisis is estimated at 3% of GDP.

[1] Years in parentheses denote the period of banking problems.

reversed in only a few instances. Thus, there is support for the notion that bank unsoundness exerts negative effects on the external balance and the exchange rate.

The reasons for this are manifold. The banking system is a key participant in international trade and capital movements; banks facilitate international payments and transfers and are active in the foreign exchange markets. An unsound domestic banking system will be less capable of providing an efficient foreign exchange market and of maintaining adequate correspondent relationships and external interbank credit lines. Where banks are major participants in the local foreign exchange market and provide related payments services to other market participants, disruptions in the banking sector can destabilize the foreign exchange market and contribute to exchange rate volatility. For example, several large Tanzanian exchange bureaus that banked with Meridien Bank lost access to their funds when that bank collapsed in March 1995.

Worries about the soundness of the banking system can also lead to a flight to quality by domestic depositors and overseas investors. This often takes the form of an exchange of domestic for foreign assets, with consequent exchange rate effects. Concerns about the ability of Argentine banks to meet cash demands in the first part of 1995 led depositors to shift to overseas banks.[60] In Israel, concerns about overvaluation of Israeli bank shares in October 1983 led to sales of domestic currency assets and bank shares; the price of bank shares collapsed and the currency was devalued.

Flexibility in external sector policy—in particular the degree to which the mix of interest rate and exchange rate policy can be chosen—will also be influenced by the strength of the banking system. The ability of a central bank to withstand a speculative attack on the exchange rate depends in part on the strength of the banking system. A typical response when a pegged exchange rate is under pressure is to raise domestic interest rates. The authorities' ability to raise interest rates may be constrained, however, by a fear that bank portfolios will deteriorate.[61] For example, Sweden's 1992 defense of its peg to the European currency unit (ECU) was limited by the fragility of the banking system.[62] These considerations imply that the type of exchange arrangement that is feasible may also be circumscribed; for example, a pure currency board arrangement would be unlikely to be sustainable in an economy with a significantly weak banking system.[63]

[60] Folkerts-Landau, Ito, and others (1995).

[61] See Rojas-Suárez and Weisbrod (1995) and Folkerts-Landau, Ito, and others (1995).

[62] Goldstein and others (1993, p. 16).

[63] Rostowski (1994) and Folkerts-Landau, Ito, and others (1995), pp. 123–25.

Table 8. External Sector Events and Effects[1]

Argentina (1980–82): The country lost international reserves. There was a sharp deterioration in the exchange rate in 1983–84 and it became volatile.

(1989–90): The policy of openness was reversed. Capital outflows rose and net international reserves fell.

(1995): The exchange rate peg held despite capital outflows.

Bangladesh (1980s–present): No effects have been observed.

Bolivia (1994–present): There is a high degree of dollarization. Capital inflows reversed to heavy outflows in 1995 because of banks' unsound offshore and off-balance-sheet operations.

Brazil (1994–present): Trade credit lines have been maintained, or even increased. The high interest rates attracted capital inflows, especially after the reduction in exchange rate uncertainty following the smooth introduction of the new exchange mechanism in March 1995.

Chile (1981–86): After two large devaluations, the fixed exchange rate was replaced by a crawling peg in 1982. The central bank established a preferential exchange rate to aid debt servicers.

Czech Republic (1991–present): High interest rates stimulated the supply of foreign capital, while the shortage of long-term domestic finance increased the demand for it.

Egypt (1991–95): Bank unsoundness led to the imposition of limits on banks' foreign exchange exposure.

Estonia (1992–95): The exchange rate, pegged to the deutsche mark, was not affected.

Finland (1991–94): The exchange rate depreciated sharply during the crisis.

France (1991–95): There was foreign exchange market turbulence in mid-1993. Net outflows of long term capital in 1994–95 were more than offset by short-term inflows, mainly in the banking sector.

Ghana (1983–89): The exchange rate depreciated during and after the crisis.

Hungary (1987–present): The large intermediation spreads necessary to provision against bad loans led to large direct foreign borrowing by enterprises in 1994–95.

Indonesia (1992–present): Capital outflows were avoided by interest rate differentials and an expectation of a public bailout.

Japan (1992–present): The premium on borrowing in the international interbank market rose in late 1995.

Kazakstan (1991–95): International reserves are growing despite the banking problems.

Kuwait (1990–91): The reduction in official external assets due to the fiscal deficit caused by assistance to banks greatly reduced the government's investment income. Outflows of private capital occurred because of the uncertain domestic prospects.

Latvia (1995–present): Capital outflows occurred in the wake of the banking crisis, but the exchange-rate peg was retained.

Lithuania (1995–present): There were widespread deposit withdrawals and large foreign exchange outflows through the currency board in early 1996.

Table 8 *(concluded)*

Malaysia (1985–88): The currency was allowed to depreciate and the central bank reformed its export credit refinance scheme and created an investment fund to shift bank lending to the tradable sector.

Mexico (1994–present): The foreign exchange market is very thin and sensitive to news about the condition of the Mexican banks.

Norway (1987–93): The exchange rate continued to depreciate during the banking problems.

Pakistan (1980–present): The need to boost international reserves led the central bank to offer incentives to induce capital inflows.

Paraguay (1995–present): The authorities continued to operate a managed-float exchange rate policy; there was a small nominal depreciation during 1995.

Philippines (1981–87): Capital fled and the exchange rate depreciated sharply during the crisis.

Poland (1991–present): Several exchange rate devaluations occurred through the period, although these were not linked directly or solely to banking sector problems. The exchange rate followed a crawling peg during the latter part of the period. There were devaluations in addition to the crawling peg in 1992 and 1993. More recently, foreign exchange reserves have been increasing.

Russia (1992–present): Banking problems may have contributed to the depreciation of the ruble.

Spain (1977–85): The currency was allowed to depreciate beginning in 1977.

Sweden (1990–93): Capital outflows occurred as the central bank defended the exchange rate until the krona was allowed to float in November 1992.

Tanzania (1988–present): Uncertainty and banks' foreign exchange losses may have affected the exchange rate and the availability of foreign exchange.

Thailand (1983–87): Monetary policy was relaxed in 1986–87 in part to support bank profitability, but with inflation low and the balance of payments in surplus, this appears to have had no significant effects on the external sector.

Turkey (1994): Spreads over the London interbank offer rate (LIBOR) were permanently raised; banks' losses on foreign exchange speculation temporarily decreased the central bank's foreign exchange reserves.

United States (1980–92): High interest rates in the early 1980s attracted capital inflows and raised the value of the dollar. Later rates were reduced, partly to aid banks, and the dollar fell.

Venezuela (1994–present): There was capital flight, the exchange rate depreciated sharply, exchange controls were reintroduced, and the exchange rate fixed in mid-1994. A further sharp depreciation was effected in December 1995.

Zambia (1994–present): There was a loss of foreign exchange reserves deposited with a failed bank.

[1] Years in parentheses denote the period of banking problems.

In addition, the degree of capital account liberalization that can be sustained may be limited by soundness considerations. Policy flexibility can be constrained insofar as banks lack the systems and skills in credit and risk management that are necessary to intermediate foreign capital flows efficiently and to control their own foreign exchange and liquidity exposure. Liberalization of the capital account would then allow unsound banks to look abroad for resources they cannot attract at home, particularly if disclosure, prudential standards and supervision are inadequate to the task of limiting banks' foreign exchange exposure. Such resources may be acquired directly, via affiliates, or through various offshore or derivative transactions. Once banks have built up large open positions by borrowing abroad to finance domestic assets, or through foreign exchange lending to residents supported by domestic resources, the authorities' room for maneuver through exchange rate depreciation may become limited. The effectiveness of a flexible exchange system or adjustment of a fixed rate will also be reduced if unsound banks continue to extend credit to weak borrowers so as to prevent defaults, since the resulting rigidity in resource allocation would tend to reduce the supply response to a devaluation.[64]

[64] See Hinds (1988).