

RICHARD A. WERNER

## Post-Crisis Banking Sector Restructuring and Its Impact on Economic Growth

*Abstract: Restructuring of the banking sector has been a major topic in Japan for at least a decade now. It is also a major and recurring topic for many policymakers in both the developed world and among developing countries. This paper examines the implications of post-crisis banking sector restructuring for economic growth. First, a relevant feature of banking activity is analyzed in a basic framework linking bank credit to the economy. Using this model, the common causes of banking crises*

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Richard A. Werner is an assistant professor of economics at Sophia University, Tokyo and chief economist at the Profit Research Center Ltd., Ark Hills Executive Tower, S103, Akasaka 1-14-5, Minato-ku, Tokyo 107-0052, Japan; Tel. +81-3-5573-4771, Fax +81-3-5573-4772, werner@profitresearch.co.jp. The author is grateful for the research assistance by Yoko Minami. He would also like to thank participants of the Eighth Seminar on International Finance of the Asian Development Bank, held on 25–27 November 1998 at the Asian Development Bank Institute in Tokyo, Japan, and participants of the International Conference on Central Banking Policies, held on 14–5 May 1999 in Macao, where early versions of this paper were presented. Pertinent comments by Ramesh B. Adhikari, Colin Kirkpatrick, Thomas Tung-hao Lee, and Kenichi Ohno are gratefully acknowledged. The author also benefited from fruitful discussions with Robert Z. Aliber, Takuro Morinaga, Paul McNelis, S. Mundle, Ghon S. Rhee, and Bill Totten. In addition, detailed comments by two anonymous referees and the able guidance of Yoshitaka Okada of the Institute of Comparative Culture at Sophia University have contributed to the production of a greatly improved and expanded institute working paper, which this paper largely follows. Finally, the author would like to thank the Japanese Ministry of Education and Science for its generous funding of the research on monetary policy implementation, of which this paper is an outgrowth. The author also thanks the Profit Research Center Ltd., Tokyo, for continued research support.

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are examined and policies on how to avoid them are suggested. Next, the dynamics of banking crises are examined and how traditional bank restructuring, as also often implemented under the auspices of international organizations, affects them. This includes an analysis of the impact of increased fiscal expenditures as part of bank reforms. Finally, a modified program of banking reform that avoids the problems of traditional policies and which considers macroeconomic stability is proposed.

Systemic banking sector crises, involving significant corporate and financial distress and economic dislocation, have occurred in many countries during the past two decades. Caprio and Klingebiel (1999) identified ninety-three countries in which a systemic financial crisis occurred during the 1980s and 1990s, of which five were in industrial countries and the remainder in the developing world. Well-known examples include the crises among Scandinavian countries in the 1990s; the prolonged Japanese crisis of the 1990s; the Mexican crisis of 1994; the so-called Asian financial crisis, involving Thailand, Korea, Indonesia, and Malaysia; and crises in transition economies.

Although there has been a variety of policy responses to these crises, in the majority of cases, post-crisis policies centered on banking sector restructuring. This has been especially the case when funding from international organizations was involved, since the usual bank reform package is a staple component of International Monetary Fund (IMF) "conditionality." However, it is also often part of post-crisis reforms implemented independently by domestic governments (such as in the case of Japan or Sweden). Such bank sector reform is here defined as a package of microeconomic, institutional, and regulatory reforms aiming at addressing problems in the banking sector and restoring its solvency and health.<sup>1</sup> This paper focuses on the most common set of banking sector reforms. Their declared goal is the restoration of the health of the banking system in order to revive overall economic activity. However, the adopted policies have usually involved significant short-term and long-term costs, in the form of increased unemployment, lack of macroeconomic stability, and large-scale liabilities to be shouldered by generations of taxpayers.

This raises the question of whether it is possible to resolve financial sector crises and achieve the goals of banking sector restructuring in a less costly manner. In order to answer it, the interplay between microeconomic policies (such as the regulatory changes, foreclosures, and

removal of bad debts taking place as part of bank reform) and their macroeconomic outcome must be examined. Just as in the case of the Prisoners' Dilemma, it is suggestive that uncoordinated micro-economic action may produce an inferior macroeconomic outcome. While much has been written about financial crises, little work has been done about the precise link between bank sector reform and macroeconomic performance and what type of coordinated policies are most desirable from a social welfare cost-benefit perspective.<sup>2</sup>

Some studies do recognize a linkage between bank reform and macroeconomic performance and the need for some form of policy coordination (such as Claessens et al. 2001). Despite the fact that much of the bank reform literature fails to adequately deal with the reasons for the development of banking crises in the first place (again, see Claessens et al. 2001), the issues involved are represented as being almost intractable. Ultimately the precise nature of the link between bank restructuring and macroeconomic performance remains unspecified. Claessens et al. and similar literature suggest as a solution that the traditional bank reform package should simply be accompanied with fiscal stimulation as a macroeconomic policy and transfer payments to groups that are negatively affected. The common bank sector reform package remains unchallenged. It will be shown in this paper that, like the standard post-crisis policy package, this proposal fails to address the fundamental problem and hence remains suboptimal from a cost-benefit perspective.

Instead, this paper suggests a simple framework that renders the link between bank reform and macroeconomic performance explicit. It is based on a much-neglected macroeconomic function of banks that directly affects the overall economy. This allows the formulation of a set of policies that may significantly reduce social welfare costs in post-crisis situations, while achieving the goals of restoring bank health and enhancing macroeconomic performance. Given the simplicity of this alternative approach, it is surprising that it continues to be disregarded by policymakers. The paper thus concludes by raising the question of why this may be. The possibility that beneficiaries of traditional bank sector restructuring exert influence (direct and indirect) to continue suboptimal policy responses is suggested as an important topic requiring further research.

This paper is structured as follows: In the following section, the fundamental link between aggregate bank behavior and macroeconomic activity is analyzed, drawing on an alternative approach proposed by

recent research. Then, the common causes of banking crises are discussed, since such crises usually provide the trigger for banking sector restructuring. Pulling together the results from the preceding sections, section four outlines the ensuing dynamics of a credit crunch recession. It is in this environment that the traditional approach to banking sector restructuring is usually applied, which is discussed in the subsequent section. Section six analyzes the impact of increased fiscal spending in a post-crisis environment, while section seven proposes a modified program of banking reform that avoids the problems encountered with traditional policies and which simultaneously aims at achieving macroeconomic stability. The final section points at open questions and issues for further research.

### The Banking Sector and the Macroeconomy

The high-profile attempts by the Japanese government and central bank in September 2002 to address the bad debt problem in the banking system have once again highlighted the issue of a link between the stability of financial systems and the performance of the overall economy. While such a link is frequently observed and commented on—whether in the context of the Asian financial crisis of 1997–98, the Latin American crisis of 2001–2, the 1990s or the 1980s, or the U.S. bank crisis of the late 1980s—its precise nature seems to remain unclear in the literature.

Meanwhile, separately from the crisis and bank reform literature, there is a growing body of work that recognizes a potential link between the state of the banking sector and overall macroeconomic performance. Recent research such as reviewed in the International Bank for Reconstruction and Development (IBRD) (2001) and Vittas (2002) suggests a significant correlation between the “real sector” of the economy and the performance of the financial sector. Levine and Renelt (1992), Faruqi (1994), and Levine (1997) argue that the development of the financial sector is associated with stronger real sector performance. Such findings are consistent with earlier theoretical and empirical models that link finance to economic development, including Gurley and Shaw (1955, 1960), Goldsmith (1969), Shaw (1973), McKinnon (1973), and Fry (1978, 1980, 1984). However, like the crisis and bank reform literature, the more general finance literature, and the “finance and development” literature have failed to render the link between the financial sector and

macroeconomic performance explicit. Since textbooks treat banks as mere financial intermediaries, akin to mutual funds and capital markets, and do not consider them special, even if banks stop lending as a result of drastic banking sector reform, it is thought that investors should be able to raise funds in the capital markets.

The only reason cited in the finance literature why there could be a special link between banks and macroeconomic performance is the so-called credit channel or credit view approach, which assumes capital market imperfections that render borrowing from banks imperfectly substitutable with so-called direct financing in the capital markets.<sup>3</sup> If evidence for such imperfect substitutability of bank funding with other forms of financing is found, for instance in the form of a credit crunch, then this is considered confirmation of the view that the capital market structure is not efficient enough and, like the banking sector, requires structural change and reform.<sup>4</sup> Thus, when banking sector reform further reduced the supply of bank loans in developing countries, exacerbating the economic and financial crisis, this was frequently interpreted as proof of how inefficient, backward, and underdeveloped the financial sector was and just how badly broad and far-reaching financial sector reforms were needed. This often strengthened the conviction of researchers that no further analysis of the causes of banking crises (and their mysteriously frequent occurrence) is necessary—for the very fact that the systems are in crisis is seen as evidence of their inefficiency.

However, there is evidence that (a) bank loans are imperfectly substitutable with other sources of funding even in developed countries, such as the United States (as the “credit view” literature has documented; see Gertler and Gilchrist 1994); (b) banking sector crises are not simply the result of accumulated inefficiencies or structural problems; there is significant evidence in support of a more plausible explanation; and (c) banks are not merely financial intermediaries, but they fulfill a special role. It is the latter point which has so far not been discussed sufficiently in the literature and which provides the missing link between the banking sector and the macro-economy. As we will see in this paper, the fact that banks fulfill a special role also helps explain the main cause of banking crises, suggests policies to prevent them, as well as far less costly policies to deal with them once they have occurred. Given its continued neglect by the literature and consistent absence in the policy discourse, it bears spelling out below.

### An Important Special Feature of Banks

This section provides a brief exposition of why banks should be considered different from financial intermediaries and why therefore capital market financing can never be a substitute for bank lending in a macro-economic sense, irrespective of the argument of the "credit view" approach. From this, the direct link between banks and the macro-economy can be quickly established, as well as a common cause of banking crises. This will then provide a suitable starting point for an analysis of effective banking sector reform.

Following Phillips (1920), textbooks in money and banking or monetary economics note that banks hold cash reserves ( $R$ ) against their deposits ( $D$ ), and that the central bank requires a minimum ratio of their reserves to the amount of deposit liabilities ( $R/D$ , the required reserve ratio).<sup>5</sup> It is also common to define the "money stock" or "money supply" ( $M$ ) as the sum of cash currency held in the hands of the public ( $C$ ) and deposits ( $D$ ). This is a broader measure of "money" than the narrow concept of "high powered money" or "base money" (defined as the sum of banks' reserves [ $R$ ] and cash currency held by the public [ $C$ ]).

If the public holds cash in a stable ratio to deposits ( $C/D$ ), then, based on the above definitions, namely:

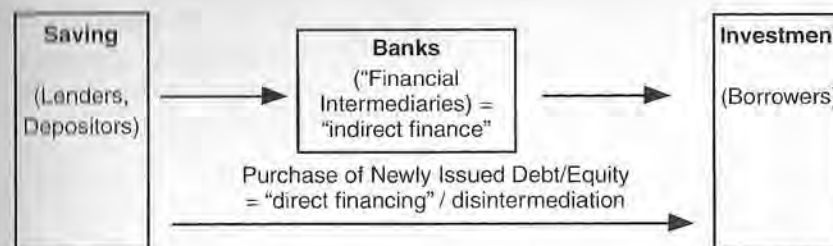
- (1)  $M = C + D$
- (2)  $H = R + C$

the relationship between high powered money ( $H$ ), the narrow concept of money, and more "broadly" defined money ( $M$ ) can be mechanically expressed as the product of high powered money ( $H$ ) and the money multiplier ( $m$ ), such that:

- (3)  $M = mH$   
with  $m = (C/D + 1)/(C/D + R/D)$ .

Far more complicated money multiplier identities can be formulated in order to take account of different types of deposits, and so forth.<sup>6</sup> However, Goodhart (1989b) has emphasized that such accounting identities suffer from a "lack of behavioral content" (p. 133).<sup>7</sup> They have indeed encouraged a somewhat misleading representation of the role of banks in textbooks. The money multiplier process is usually explained as a diffuse progression

Figure 1. The Traditional Textbook Representation of Banks as Mere Intermediaries



*Note:* Banks are usually represented as mere financial intermediaries in textbooks, coming between the savers and the investors. This is also why funding from banks is called "indirect financing," while funding from the capital markets is considered "direct," as the buyers of debt or equity papers effectively lend directly to the firms that borrow. An increase in this so-called direct financing is said to constitute "disintermediation," since the alleged intermediary function of banks is not required.

in which each individual bank is only marginally involved. For instance, with a reserve requirement of 1 percent, if a bank receives \$100 in new deposits, it will keep \$1 and lend out \$99. This will mean that some other bank will eventually receive \$99 in deposits, of which it keeps a little less than a dollar, and so forth. Since each bank accepts deposits and lends them out again (minus the reserve), banks merely appear to be conservative financial intermediaries between the savers (the depositors) and the investors who are borrowing money. A common representation of this alleged financial intermediation in textbooks is shown in Figure 1.<sup>8</sup>

What is not mentioned in textbooks is that a more accurate and instructive way to describe the activities of banks—and their special feature—is as follows: If a bank receives \$100 as deposit, it will keep the entire \$100 as reserve. This might appear conservative, if the bank would then not proceed to lend this same \$100 simultaneously to ninety-nine different borrowers. That way, it will lend out \$9,900, although it only received \$100. As a result, the originally deposited \$100 will have been multiplied by a factor of 99. If students of economics were presented with this factual description of the function of banks, they would hardly neglect the important macroeconomic role of banks—namely to create new purchasing power "out of nothing," thus producing the majority of the money supply. Many trained economists frequently appear unaware of this fact

and inquire how banks—described as mere intermediaries in the literature—could possibly create \$9,900 out of nothing? But of course they can, and it is commonly referred to as credit creation. Each borrower who obtains a loan of \$100 is simply credited with \$100 in their deposit account. Thus, as bank loans increase by \$9,900, so do bank deposits. At the end of the day, the reserves (R) of \$100 are accompanied by deposits (D) of \$10,000. Thus the reserve requirement (R/D) of 1 percent is met.

### “Direct Finance” and the “Savings Shortage”

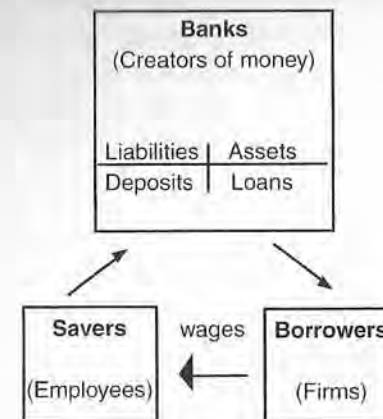
We see that a more suitable simplification of the role of banks is not merely as financial intermediaries, but as the creators of most money (see Figure 2).<sup>9</sup> This reveals that the common classification of corporate finance from banks as “indirect finance” and borrowing through the initial public offering of debt or equity as “direct finance” is somewhat misleading. Unlike borrowing from banks, any fundraising in the capital markets merely diverts already existing purchasing power, and thus constitutes a more indirect way of funding. Borrowing directly from the creators of money appears to be a more suitable candidate for the epithet “direct borrowing.”

Keeping the role of banks as creators of new purchasing power in mind also helps us to understand the role of savings properly. The textbook representation considers them as already existing in the economy, and as the needed requirement for investment to be possible. Much of economic development theory has followed such approaches as the Harrod-Domar model and subsequently emphasized savings as necessary condition in order to be able to increase investment (again, usually based on ex-post accounting identities void of behavioral or causal implications). As Figure 2 illustrates, there is no such condition. In order to increase investment, banks can simply create more money (supported by a central bank that injects more reserves, if needed) and fund the investment. This will then also generate more savings.

### Money and Economic Activity

Next, it is instructive to consider the more general relationship between money and macroeconomic activity. This is normally expressed by the well-known equation of exchange. In its most frequently cited, nonlogarithmic form, this is usually given as:

Figure 2. A More Accurate Representation of the Role of Banks as Money Creators



*Note:* Banks are not financial intermediaries that shift funds from savers to investors, like stock brokers or fund managers. Instead, banks are special: They have a license to create money, which they do through the extension of loans. Thus their main role is to function as the creators of the bulk of the money supply. Borrowing from banks should thus be called “direct financing.” There can also be no “savings shortage” as a restriction on investment, because if needed banks can create the required “savings.”

$$(4) \quad MV = PY$$

Since it is assumed that the velocity is constant in the medium to long-run, the equation establishes a direct relationship between “money” (M) and nominal gross domestic product (GDP). Milton Friedman has referred to this relationship as being of a uniformity approaching that of constants in the physical sciences (Friedman, 1956). Textbooks indicate that it “is an identity since it is derived solely from identities. It is valid under any set of circumstances whatever.”<sup>10</sup> However, empirically this relationship appeared to have broken down in many countries during the 1980s and 1990s, especially in those that were later affected by banking sector crises, such as the Scandinavian countries, the Asian crisis countries and Japan, since a decline in velocity was observed (also referred to in the literature as a “breakdown of the money demand function”; see Goodhart 1989a, Goldfeld and Sichel 1990, Boughton 1991, Werner 1997). This has posed a serious problem for macroeconomics, whether of neoclassi-

cal, Keynesian or monetarist tradition, since without a stable velocity, there is little that can be said about the relationship between money and the economy, let alone that can be done about monetary policy.

According to Werner (1992, 1997), the mediocre empirical record of the traditional quantity equation is due to two fundamental flaws in the model. The first concerns the right-hand side of equation (4). Originally, the equation of exchange was expressed as follows (Newcomb 1885, Fisher 1911):

$$(5) \quad MV = PQ$$

where  $Q$  stands for the quantity of transactions, thus  $PQ$  referring to the total value of all transactions in the economy. Probably partly induced by a lack of statistics representing transactions  $Q$ , researchers proposed what amounts to an approximation, namely to substitute the theoretically sound transactions variable  $Q$  with the more readily available variable for GDP (representing  $Y$  in equation (4)). This approximation is only accurate when  $Q = Y$  and thus all transactions are recorded in the GDP accounts (or if growth rates are considered, and the divergence between  $Q$  and  $Y$  remains constant). However, an important and often changing part of total transactions consists of real estate and financial transactions that are not recorded in GDP. Thus any increase in such economic activities will appear as a "velocity decline" or "breakdown of the money demand function," when in reality it is due to the fact that equation (4) does not hold true (as non-GDP transactions cannot be neglected).

The second problem with the traditional quantity theory is found on the left-hand side of equation (4). Again, the question is which empirical data to use in order to correctly represent a theoretical value—namely the money variable ( $M$ ). Initial work simplified by defining  $M$  purely as paper money issued by the central bank. However, in most countries paper money constitutes less than 10 percent of the total money supply. The majority of purchasing power is created by the private banking system through the process described above. Since Phillips (1920), most researchers have defined money ( $M$ ) as the aggregate of paper money in circulation plus bank deposits (of various maturity characteristics, thus delivering the M1 to M4 "money supply" aggregates). However, this may be misleading. The difficulty with focusing on a subset of private sector assets is their substitutability and hence the propensity of deposit aggregates to become subject to significant shifts of money between asset

classes in and out of the definition domain of the deposit aggregate. Moreover, bank deposits represent an arbitrary subset of private sector savings, thus constituting potential purchasing power and not "money" actually used for economic transactions, as required by equation (5).

The genesis of the fallacy to represent the money creation ability of banks through deposits is instructive: Although nowadays in most countries only central banks have the right to issue paper money, before the arrival of central banks—in the United States as recent as 1913—private banks issued money. When individuals or companies borrowed from banks, the banks issued newly created paper money (thus still commonly referred to as "bank notes"). With the introduction of central banks, the creation of purchasing power by banks did not stop, but took a less visible form. The modern equivalent of such note issuance of private banks was thought by economists to be increases in bank deposits (a tempting conclusion, invited by the fact that the old, literal "bank notes" claimed to be "deposit certificates" of sorts). However, the accurate modern representation of the process of issuing paper money by private banks is the extension of bank loans.

Thus, following Werner (1992, 1997), a more accurate and more general equation of exchange can be formulated. It is based on a disaggregation of total credit  $C$  into credit used for "real" (i.e., GDP-based) transactions (called  $C_R$ ) and credit used for non-GDP, hence "financial" transactions, called  $C_F$ .

$$(6) \quad C = C_R + C_F$$

Substituting into the equation of exchange, we obtain two equations. The first links credit in the "real circulation" to nominal GDP (consisting of the GDP deflator  $P_Y$  and real GDP  $Y$ ), with a constant "real velocity"  $V_R$ :

$$(7) \quad C_R V_R = P_Y Q_R = P_Y Y$$

or, expressed in terms of changes,

$$(7') \quad \Delta C_R = \Delta(P_Y Y).$$

The other links credit in the "financial circulation" with financial transactions, with a constant "financial velocity"  $V_F$ :

$$(8) \quad C_F V_F = P_F Q_F$$

or, expressed in terms of changes

$$(8') \quad \Delta C_F = \Delta(P_F Q_F).$$

Equation (7') demonstrates that nominal GDP can only increase if and when credit creation used for GDP transactions rises. Equation (8') shows that credit creation entering the financial circulation ( $\Delta C_F$ ) is proportional to the change in the value of asset transactions.<sup>11</sup>

Usually more than 90 percent of total credit creation is due to the activity of private banks. Thus the above equations establish the special role of banks, as well as the direct link between bank behavior and macroeconomic stability. Banks, as well as the central bank, are unique institutions in the economy, since they create the "money" circulating in the economy. The aggregate outcome of the banks' collective activities is a main determinant of economic activity, output, asset prices, and capital flows.<sup>12</sup> They therefore fulfill a public goods function that generates externalities affecting the rest of the economy. This function is indeed usually related to the development of a financial crisis and needs to be considered for efficient post-crisis policies.

### The Cause of Financial Crises

Analyzing common features of financial crises, we note that they usually resulted in large-scale resource misallocation and deadweight losses to society. This takes the form of nonperforming loans, deteriorating economic performance and a high fiscal burden (the latter often as the result of the post-crisis reform policies). In Scandinavia, for instance, loan losses incurred by banks in Finland, Norway, and Sweden amounted to 4.2 to 6.7 percent of GDP in 1991–92 (Sheng 1996). Primary bad debts in the banking system exceeded 25 percent of total loans in Japan in the 1990s (Werner 1998) and amounted to as much as 55 to 60 percent in transition economies (Sheng 1992). Wealth losses, including the subsequent loss of GDP growth, often reach vast proportions, such as almost 30 percent for Chile in 1982, or the even larger cost of Japan's "lost decade" of the 1990s. Table 1 compares key features of the Scandinavian and Mexican crisis with that of the East Asian countries in 1998.

Table 1  
The Costs of Banking Crises

Country	Crisis year	Fiscal cost (% of GDP)	Peak NPL (% of loans)	Real GDP growth (%)
Finland	1992	11.0	13.0	-4.6
Indonesia	1998	50.0	65–75	-15.4
Korea	1998	37.0	30–40	-10.6
Malaysia	1998	16.4	25–35	-12.7
Mexico	1995	19.3	29.8	-6.2
Philippines	1998	0.5	20.0	-0.8
Sweden	1992	4.0	18.0	-3.3
Thailand	1998	32.8	33.0	-5.4

Note: Nonperforming loans (NPL's), deteriorating economic performance and a significant fiscal burden are common features of most banking crises (figures and definitions from Claessens et al. 2001).

### Common Features of Systemic Banking Crises

While many researchers of post-crisis bank reform often take the crisis as the starting point of their analysis on how to deal with it (see Claessens et al. 2001), this paper takes a different view. There are three reasons why the cause of banking crises should be the subject of the same analysis that deals with post-crisis policies. First, only a thorough understanding of the causes of an event enables the formulation of a complete set of policies on how to deal with it efficiently; second, post-crisis policies need to avoid creating new problems, such as moral hazard (to avoid moral hazard, an understanding is required of who created the initial problems and where responsibility lies); and third, in order to prevent the recurrence of crises, prevention policies must be taken; again, this is only possible when the causes are understood.

It is argued here that the very feature that makes banks special—their ability to create money—is also the main cause of their fragility. However, this argument takes a different form from that commonly proposed by staff from international organizations or politicians. They frequently argue that banks' tendency to "borrow short" and "lend long" is a cause

for crises. It is referred to as a "term mismatch" or "maturity mismatch" (see the speech by then Japanese finance minister Kiichi Miyazawa 1999, who blamed the Asian crisis partly on such a "mismatch," or the International Finance Corporation's Endo 2001, the World Bank's Rojas-Suarez 2001, the Asian Development Bank Institute's Yoshitomi 2000, or Park 2001). It is clearly true that bank assets tend to be less liquid, and therefore banks face a solvency crisis if a large part of the liabilities is suddenly withdrawn. A number of studies have pointed out that this is a cause for crises, such as Kindleberger (1978), Minsky (1982), Hinds (1988), Davis (1989), Sundararajan and Balino (1991). The international organizations have thus argued that crises can be avoided by reducing the reliance on banking systems entirely, and instead relying on bond markets. However, this argument, as well as the related literature, has neglected the fact that banks are the creators of the majority of the money supply. This activity is not and cannot be performed by bond markets. Moreover, due to this neglect, the true cause of financial and banking crises has not been understood properly. Therefore it is instructive to apply our basic framework to a brief analysis of banking crises.

Banking crises are virtually always preceded by what is afterwards regarded as "excessive lending." The question is therefore to identify just what constitutes "excessive," for at the time most bankers would argue that their lending was principally sound. Werner (1992, 1997) has argued that the main factor determining "excessive" lending, is whether lending is used for "productive" or "unproductive" purposes. In our framework, the main form of "unproductive" lending is, according to equation (8'), lending for non-GDP transactions, namely speculative lending for financial transactions. Usually this takes the form of loans secured with assets as collateral (such as real estate loans or margin loans).

Werner has pointed out that banks often suffer from the fallacy of composition, as one bank considers collateral values as exogenous. By applying a suitably conservative loan/valuation ratio to the collateral, it appears to be taking little risk. However, as other banks act similarly and collateralize the same asset class with their loans, for the whole banking system, collateral values are largely endogenous to bank behavior, as equations (8) and (8') show: The collective action of banks to lend to real estate speculators will push up real estate prices. Thus aggregate bank behavior exerts strong influence on asset prices. In the short term, rising asset prices create capital gains for the borrowers and

render banks' loan books technically sound, thus further encouraging increased loan extension. This will be met by sufficient demand if the loan market is in a state of credit rationing, as is likely (see Stiglitz and Weiss 1981), or if banks stimulate loan demand by raising the loan/valuation ratio, which alleviates credit constraints (see Muellbauer 1992)—a "Say's Law of Credit." However, in aggregate bank loans for unproductive purposes can usually not be recovered, since the only source of income are the capital gains that are only sustainable while such bank lending increases. As soon as bank lending for speculative purposes slows, asset prices fall. This damages speculators, and hence banks, because loans become nonperforming. Thus, banking systems are prone to credit cycles that affect macroeconomic stability.

### How to Prevent a Banking Crisis

The fundamental trigger for banking sector crises is therefore the process that led to the rapid expansion of financial credit creation  $C_f$ . The incipient problems are not easy to spot on the micro-economic level when analyzing individual banks (where asset values are considered an exogenous factor), especially while individual balance sheets of both banks and borrowers are bolstered by the rising asset valuations. However, they can be identified without great difficulty on the macroeconomic level by monitoring the aggregate share of loans that are extended for financial transactions (the ratio  $C_f/C$ ). This ratio increased significantly in most countries that were subsequently struck by banking crises due to increases in credit for financial speculation.

Empirically, two causes for the rise in the ratio  $C_f/C$  can be observed. First, in several important countries that subsequently faced large-scale banking crises and macroeconomic instability, bank credit growth for speculative purposes rose sharply in the preceding period, because the central bank used informal and extra-legal "moral suasion" to encourage banks to increase lending. This was the case in Thailand, Korea and Japan, among others.<sup>13</sup> Second, in several countries that later faced banking crises, rapid expansion of bank credit was preceded by deregulation of the banking sector. This was the case in countries as diverse as Argentina, Brazil, Chile, and Mexico (during the 1970s) and Sweden, Norway, Denmark, and the United Kingdom (during the 1980s).

There is an *a priori* reason why banking sector deregulation may cause a subsequent expansion in credit creation. In general, any market that is



operated as a cartel is characterized by stable market shares among the cartel members. If a regulatory shock is applied to the players through the abolition of the cartel and introduction of competition, the players are likely to respond by initially focusing their optimization behavior on market-share competition, even at the short-term neglect of profit maximization (as such behavior maximizes long-term profits). In order to gain market share, the players will reduce the price of their products, often even in the form of subsidizing them (dumping). Assuming standard price-elasticities of demand, *ceteris paribus* the total amount of products sold in a post-deregulation market must be larger than the number of products in the prederegulation state.

Applying this analysis to banks, we notice that in the prederegulation state, the credit market resembles that of a cartel. The product of the banks are loans. In order to gain market share in the post-deregulation environment, banks will have a lowered risk-aversion and a larger appetite to extend loans. They may lower prices or simply reduce their credit rationing by loosening their standards of credit risk evaluation. The total amount of loans in the post-deregulation environment will consequently be larger, while their quality will tend to be lower. If the preshock steady state  $t_0$  was characterized by total credit growth being in line with GDP (thus credit for financial transactions being negligible), the post-deregulation ( $t_1$ ) environment must be characterized by positive credit creation used for speculative purposes. Whether induced by direct central bank "guidance" or due to increased competition among banks, the result is as follows:

$$(9) \quad \Delta C_F(t_1) > 0$$

and hence

$$(10) \quad \Delta(P_A T_F)(t_1) > 0.$$

Asset prices are being driven up by increased credit creation employed for financial, and thus speculative, transactions. Without suitable policies by the monetary authorities, this process can continue until it escalates into a speculative bubble. The problem can be compounded by implicit or explicit deposit insurance coverage (hence incentive asymmetry and moral hazard), connected ownership of banks and enterprises, excessive concentration of bank lending to a small number of firms or

industrial sectors and inadequate banking supervision or lack of checks and balances on the central bank's policies (whether formal or informal) towards private banks. A similar effect as deregulation can result from increased competition from international banks or innovations in financial products offered by investment banks that compete with bank loans.

From this analysis it is suggestive that banking crises can be prevented by monitoring of the ratio of speculative loans to total credit ( $C_F/C$ ) and direct central bank intervention to suppress a rise in  $C_F$  when necessary.<sup>14</sup> This avoids the financial crises, and hence the cause of bad debts and banking problems.

Once bad debts are on the rise, some form of crisis is inevitable, if not countered by suitable policies.<sup>15</sup> In the following analysis we therefore assume that a substantial increase in speculative loans has already taken place, thus laying the foundation for a banking and economic crisis in the time period ahead.

### The Dynamics of a Bank-Centered Crisis

Bank lending for speculative purposes  $C_F$  is only viable as long as banks continue to increase such lending. It seems a reasonable assumption that banks will not continue to increase their speculative lending  $C_F$  forever. We thus consider what happens when at some stage (perhaps again induced by a regulatory shock, such as a change in the monetary policy of the central bank)  $C_F$  falls. According to equation (8'), asset prices will fall. This will then reduce collateral values and bankrupt the first group of speculative borrowers. As bankruptcies increase, banks become more risk-averse and reduce loan growth further. This further reduces asset prices (equation 8'), which increases bankruptcies. The process can easily make banks so risk-averse that they also reduce lending to firms for productive purposes, in which case GDP growth will also fall (equation 7'). Such credit crunches have been observed in many cases, including the United States.<sup>16</sup> This exacerbates the vicious cycle, since with less economic growth, corporate sales and profits decline. As more firms become unstable, bad debts increase further (see Figure 3).

The call for banking sector reform usually takes place during such a credit crunch cycle. Without taking account of this phenomenon, bank restructuring is likely to exert further detrimental influence on macroeconomic stability.

Figure 3. The Vicious Cycle of a Credit Crunch Recession



*Note:* The vicious cycle of contracting credit that reduces asset prices and GDP growth (following equations 7' and 8'), which in turn reduces credit creation can continue for years, if no policy action is taken. The central bank is the main institution that can step in and end this vicious cycle. Indeed, this task has been given as the justification for the creation of several central banks, such as the U.S. Federal Reserve System (although the Fed failed to act sufficiently when such a vicious credit crunch cycle occurred after 1929).

### Traditional Approach to Banking Sector Restructuring

The traditional approach to banking sector restructuring, as detailed, for instance, in the Letters of Intent to the IMF (see Government of Thailand 1998, Government of Korea 1998) commonly applies comparative static analysis by comparing a post-crisis banking system with its precrisis state or with an ideal state derived from international "best-practice." Since this assessment is done in the midst or early aftermath of a crisis, it is not surprising that it is found that capital adequacy ratios are too low, that the supervisory regime had been too lenient, that accounting standards for nonperforming loans are too lax, and that implicit government guarantees of bank solvency and deposits had created moral haz-

ard. Consequently, the restructuring programs commonly seek to correct these problems by demanding:

- a. an increase in the capital adequacy ratio;
- b. a tightening of accounting standards for nonperforming loans;
- c. an abolition of the implicit government guarantee of bank solvency by allowing banks to fail or forcing mergers, takeovers, or acquisitions of banks;
- d. the introduction of an independent policy regime for monetary, banking, and regulatory policies that implements the above measures;
- e. involuntary exit of the bank management;
- f. infusion of tax money to support write-offs of bad debts; and
- g. foreclosure on borrowers whose loans were written off and distressed sale of their assets.

Given these drastic measures and the likely imminent dismissal of management, it is rational for bank loan officers to become more, not less, risk averse. *Ceteris paribus*, this means that they will reduce the quantity of loans extended and increase credit rationing. As overall credit creation contracts further in the economy, the vicious cycle turns down another notch. A full-blown recession ensues which could last for many years and, depending on the degree of shortfall between nominal GDP and the potential growth rate, will involve disinflation or deflation (as in the case of Japan).

Policymakers often point at the bad debts as the root problem and attempt to tighten the regulatory environment surrounding bank lending. However, it is necessary to distinguish two types of bad debts. Type I bad debts are those that were incurred due to excessive lending for speculative purposes. Since lending for such purposes usually declines with the onset of the crisis, their size is limited and can be estimated. In Japan, for instance, it is well-documented that the so-called financial bubble of the 1980s was mainly due to excessive bank lending for real estate speculation to the three "bubble sectors" (the real estate sector, the construction industry, and nonbank financial institutions; see Werner 1992, 1997, 2002a). Since the beginning of the bubble is commonly put in 1986, and since such loans did not increase significantly after about 1993, their total scale can be estimated by making the conservative assumption that all net new bank lending to these three sectors between January 1, 1986 and January 1, 1993 will eventually become unrecoverable. This places the total bad debt problem at approximately ¥80 trillion.

In early 2002, the official figures for bad debts of the banking system were ¥40 trillion. However, since 1993, Japanese banks had been writing off a total of ¥80 trillion in bad debts. This means that most of the Type I bad debts had been eliminated. Yet, bad debts remained high, and indeed were estimated to rise at the time of writing. This is due to Type II bad debts, which are not the result of the precrisis lending. Instead, they are the result of the recession that was induced by the banking crisis and subsequent decline in credit for GDP transactions (equation 7'). While the size of Type I bad debts can be fairly accurately measured, this is not the case with Type II bad debts, since their scale is contingent on the state of the economy. However, without suitable intervention from the authorities, there is nothing banks can do to extricate themselves from the vicious credit crunch downward spiral. The recession will trigger second-round and third-round bad debts, as even the healthiest companies will find it hard to secure sales and profits in an environment of shrinking demand and falling prices. The longer the suitable policy response is delayed, the more Type II bad debts will increase (with the only theoretical limit being the total outstanding loan balance, when bad debts would have reached 100 percent of all loans).

### Adverse Banking Sector Reform

The above banking sector reform policies of tighter capital adequacy, prudential, supervisory and accounting standards, as well as the threat of regulator-determined exit are policies that may be useful when implemented well before the occurrence of a banking crisis, indeed before the speculative lending that precedes it. In other words, such policies are useful for limiting excessive credit creation and the bad debt problems that may follow. The timing of such policies is crucial. If they are introduced too late, namely when the event that they are meant to prevent has already occurred and a banking crisis has already begun, they do not have a salutary effect on the banking system and the economy. Instead, they compound the problems.<sup>17</sup> There is no doubt that such policies have a negative impact on bank credit growth and that they tend to worsen credit rationing.

The previously cited literature on banks' alleged "maturity mismatch" argues that such a bank credit crunch does not matter, if capital markets are in place. Since this often is not the case in developing countries, bank reform is usually accompanied by reform of capital markets (as in

the case of post-crisis Thailand, Korea, and Indonesia). However, this neglects the finding that even in reasonably advanced economies with somewhat developed capital markets, such as the United States, a credit crunch can follow, because small and medium-sized firms cannot access capital markets as easily as they could previously obtain bank funding. Thanks to our model we also know that even if small firms could indeed borrow freely from capital markets, a reduction in bank credit would have a negative impact on the economy, since it reduces the amount of purchasing power circulating in the economy, the money supply, and hence economic activity (equation 7'). Thus a rise in so-called direct financing from the capital markets would not stimulate a recovery, as such funding does not create credit and hence cannot substitute for bank or central bank credit creation.

In the cases of Japan, Thailand, Korea, and Indonesia, the central bank and/or the IMF implemented the traditional set of banking restructuring policies at a time when banks were burdened with large-scale bad debts. As a result, credit creation slowed further and even turned negative.<sup>18</sup> Macroeconomic stability suffered further. Hence, such banking sector reform, when implemented in times of banking crises, must be classified as *adverse banking sector reform*. While it may be aimed at positive long-term goals, it is not congruent with the macroeconomic policy of creating an economic recovery. By worsening the macroeconomic situation, even the goal of banking sector stability moves further out of reach, as the deteriorating economy once again hurts the banks in a negative feedback loop.

New empirical work supports our theoretical argument: Przeworski and Vreeland (2000) found that the effect of participation in IMF programs is to lower growth rates for as long as countries remain under a program. This is not surprising, since such programs almost always include direct ceilings for central bank and bank credit creation, which reduce economic activity in our model.

### The Case Against Fiscalization

As indicated above, traditional, adverse banking sector reform produces costs for the public purse, such as an injection of money by the government into the banking system, in order to allow banks to write off bad debts. In the post-crisis IMF packages in East Asia, monetization of expenditures was explicitly advised against and instead fiscalization rec-

ommended; that is, the shouldering of costs by the government and the issuance of government bonds in order to defray them. In addition, authors such as Claessens et al. (2001), who have noted that traditional banking reform is usually accompanied by a severe deterioration of economic activity, argue that a solution would be to accompany such banking reform with a "Keynesian" fiscal stimulation program. This also increases government expenditures.

### Quantity-Crowding Out

However, in our framework such reform-induced expansionary fiscal policy is shown to have no positive impact on economic growth, but instead a negative impact on private demand. Such "fiscalization" of costs should therefore be avoided.

Income  $Y$  in equation (7') can be broken up into its components:

$$(7'') \quad \Delta C_R = \Delta(P_Y Y) = \Delta(C + I + G + NX)$$

where  $C$  stands for nominal consumption expenditure,  $I$  for nominal investment,  $G$  for nominal fiscal expenditure, and  $NX$  for nominal net exports. It can immediately be seen that if there is no increase in credit creation for GDP-based transactions ( $C_R$ ), nominal GDP cannot rise, even if government expenditures increase. Any such increase must crowd out private demand. For instance, if credit creation remains constant, thus

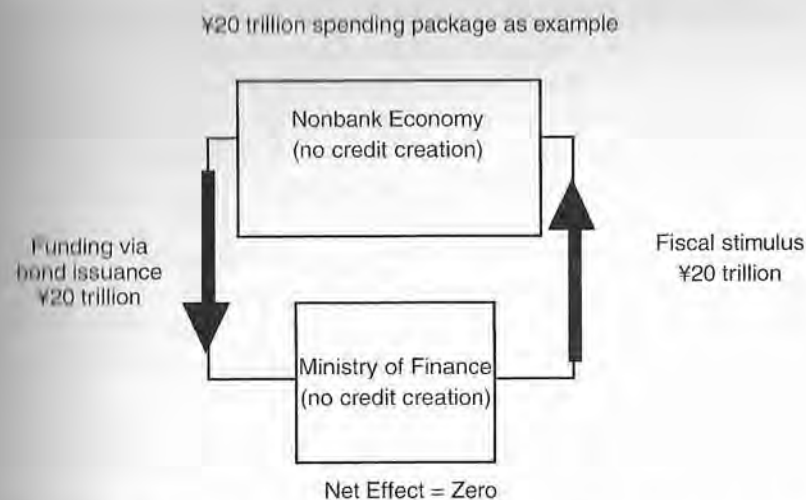
$$(11) \quad \Delta C_R = 0$$

then, solving for nominal government expenditure  $G$ ,

$$(12) \quad \Delta G = -\Delta(C + I + NX).$$

In other words, without an increase in credit creation, any increase in fiscal expenditure must reduce private expenditure by the same amount and result in perfect crowding out. Notice that this crowding out does not occur via interest rate rises, as is often argued in the traditional IS-LM framework, but merely through the budget constraint imposed on the economy through the limitation of credit creation and thus the restriction of available new purchasing power (see Figure 4). Werner (2002b) tested for

Figure 4. Fiscal Stimulation Funded by Bond Issuance



*Note:* When fiscal expenditures are financed by bond issuance sold to the nonbank private sector, there is no increase in credit creation. However, without an increase in credit creation, increased government spending merely raises the share claimed by the government of an unchanged (or shrinking) national income pie, and thus must crowd out private activity.

such quantity crowding out of fiscal expenditure empirically in the case of Japan. During the course of the 1990s over twelve fiscal expenditure programs were implemented, injecting over ¥120 trillion in government expenditure. The ineffectiveness of fiscal stimulation was found by Werner (2002b) to have been due to perfect crowding out.

### Moral Hazard

Another compelling argument against using tax money to shoulder the costs of addressing banking sector problems and restoring economic growth is the need to avoid moral hazard. The main principle here is to place the burden of the costs of such policies on those who have caused the problem. Since there is no evidence that taxpayers caused banking crises and the recessions resulting from adverse banking reform, it would create moral hazard and a distorted incentive structure, if taxpayers were asked to shoulder the costs. Our framework indicates that banking cri-

ses are the result of credit boom-bust cycles. To avoid the excessive use of credit creation for speculative purpose and the excessive expansion of total credit is the task of no other institution but the central bank. Thus there is *prima facie* evidence that central banks are to blame for banking crises.<sup>19</sup> Thus, all costs of bank reform and stimulating the economy should be borne by the central bank. As we see in the following section, central bank credit creation is indeed an efficient way of solving banking crises and restoring economic growth.

### Towards Growth-Consistent Banking Sector Reform

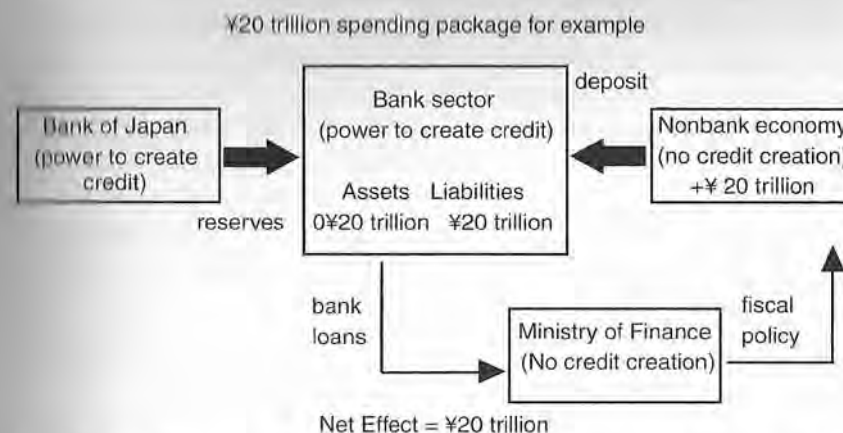
An alternative approach to banking sector reform, here called *growth-consistent banking sector reform*, aims at satisfying the simultaneous objective function of creating an economic recovery and restoring the health of the banking system. To achieve this goal, the sequencing of policies, as well as the method of funding the costs is important.

From our previous analysis of crowding out, we can establish a key principle of growth-consistent bank reform: Since overall economic activity can only be expanded if there is positive creation of purchasing power, as a general rule all fiscal expenditures to defray the costs of bank restructuring should be monetized (i.e., paid for by new credit creation), not fiscalized. As equation (7'') indicates, fiscal stimulation will not in itself be helpful; however, policies that increase credit creation will.

The policies of growth-consistent bank restructuring can be divided into three different implementation phases. In Phase 1, credit creation is expanded by making use of central bank credit creation. This can be achieved by central bank purchases of (a) private sector assets (preferably purchases of the banks' bad debt, real estate collateral of bad loans, and preferred stocks issued by banks to fund recapitalization) and (b) government debt, either in the primary or secondary market. The latter monetizes fiscal policy, and hence avoids crowding out of private sector activity due to increased government spending.<sup>20</sup>

In Phase 2, bank credit creation (for productive and nonspeculative purposes, i.e.,  $C_R$ ) should be expanded. To do this, direct and indirect policies can be implemented. The direct policies include halting all bond issuance by the government and shifting fundraising for the entire public sector borrowing requirement to direct borrowing by the government from banks in the form of standard bank loan agreements. By shifting

Figure 5. Fiscal Stimulation Funded by Bank Borrowing



*Note:* Fiscal policy can stimulate economic growth, if it is monetized. This can either be achieved directly by the central bank through equivalent purchases of government bonds in the open market, or, more effectively, through government borrowing from banks in the form of loan contracts. This will increase bank lending, and thus create more purchasing power in the economy. The role of the central bank is secondary: in a post-crisis situation, most banks are not "loaned up" and thus no new reserve injections by the central bank are necessary.

public sector borrowing from bond issuance to borrowing from banks, crowding out of private sector activity is minimized: Selling bonds to the private sector amounts to a zero-sum game, while borrowing from banks results in credit creation (a positive-sum game), that is, an increase in purchasing power in the economy (and hence, according to equation 7 and 7', increased economic activity). Figure 5 illustrates why changing the funding of government borrowing from bond issuance to borrowing from banks has quite different macroeconomic implications. This argument is in line with Goodhart's (1989b) model of the link between funding fiscal policy and the money supply.

Another policy is to issue government guarantees to banks for bank loans to firms/industrial sectors that are most severely credit-constrained and that would not use the newly created money for speculative purposes. In most countries, loans to small manufacturing firms are an obvious example, as these firms tend to be severely credit rationed, usually even in the best of times.

The indirect methods to increase banking sector credit creation focus on reducing banks' risk aversion via changes in the regulatory environment. This can include the temporary or partial suspension of the BIS capital adequacy requirement and the introduction of new, lenient capital adequacy rules, policies to reduce bad debts (via write-offs, sales or provisions funded by public money, preferential tax treatment, policies to enhance bank profits, the issuance of preference shares, etc.).

Once the initial phases have been completed (approximately six to nine months after the start of the crisis) and macroeconomic stability is ensured, banking reform can take greater precedence. This is the main goal during Phase 3, during which the banking sector incentive structure is reshaped such that in the long-run (by a future target date) banks are required to implement all the international best-practice prudential rules and supervisory structures, ideally in a phased manner.

Should external stability (i.e., currency stability) be an important issue, then, like banking sector restructuring, it would not be efficient to give it precedence over the goal of domestic macroeconomic stability. Countries with stable economic growth are less likely to succumb to currency crises than countries that are in the grips of recession. If necessary, curbs on short-term capital account transactions via reregulation, as were implemented by Malaysia and Chile, are recommended. The potential costs of these policies is likely to be smaller than the large cost of achieving external currency stability and banking sector restructuring by reducing domestic credit creation and therefore creating high unemployment with significant long-term social costs. The results of the Malaysian approach of dealing with the Asian crisis attest to this.

### Open Questions and Further Research

Although many authors (such as Claessens et al. 2001) suggest that the issues involved in dealing successfully with banking crises are "complex," the framework presented in this paper is not intractable. Indeed, the problem of lending-induced boom and bust cycles has recurred for several centuries and it must by now be considered a familiar spectacle. The fruits of traditional, adverse banking sector reform are by now also well documented, such as in the case of Latin America or Thailand and Korea. Moreover, after severe international criticism the IMF reversed its policies of tight credit ceilings in the latter countries from 1999 onwards. Yet, countries that attempted similar policies as proposed here,

such as Malaysia, suffered severe international criticism, while policymakers in many countries with banking crises appear to continue to favor traditional, growth-adverse banking reform. In Japan, for instance, where the almost ten-year-old recession had already bankrupted about 200,000, mainly small and medium-sized companies, it was proposed in late 2002 that tax money be used to help banks write off bad debts, in return for foreclosing on large-scale borrowers.<sup>21</sup>

Given the similarities of the problems and the straight-forward solutions suggested by our framework, a question raised by this paper is why the lessons do not seem to get learned. It is beyond the scope of this paper to provide an answer, and research on this issue, especially from a political economy perspective, is required.

Here, we may note a few observations concerning the issue of "who benefits" from traditional banking reform. In Japan, for instance, recent research suggests that key authorities, namely the central bank, were apparently not interested in growth-consistent post-crisis policies, but instead in implementing structural reform, including an expansion of the market share of foreign companies.<sup>22</sup> Indeed, international rating agencies usually take an increase in foreign ownership as a positive sign.<sup>23</sup>

How is such increased ownership of the domestic financial system justified? Corsetti, Pesenti, and Roubini (2001) argue that "significant ownership of the domestic financial system by foreign banks could help prevent currency and financial crises, and/or help reduce the impact of a crisis on the economy," because "direct ownership of a fraction of the domestic financial system by foreign banks may have positive stabilizing effects. In addition to enhancing competition, efficiency, and to bringing new managerial skills and banking knowledge, international banks may provide specific benefits in periods of crisis." The benefits are, according to Corsetti et al., that foreign banks would "follow an arms-length approach, rather than relationship banking; and they may be less exposed to political pressure to provide direct lending." Also, "foreign ownership of banks operating domestically may reduce the need for central banks in emerging market [*sic*] to provide a safety net, by performing as lenders of last resort" (Corsetti et al. 2001, p. 23f). Both the theory of the framework discussed in this paper, as well as the empirical record of countries where foreign ownership of banks has become substantial—notably Argentina—quickly reveals such arguments as unconvincing. The ownership of banks is not a variable in our model of the creation

of banking crises and also does not feature in the list of suitable policies. There is little reason to argue that foreign banks would exert a "positive stabilizing effect," as Corsetti et al. claim. The explicit or implicit claim that "foreign" banks—meaning banks from industrialized countries such as the United States or Europe—have superior risk management, credit analysis skills, or "managerial skills and banking knowledge" is not supported by evidence. Perhaps Corsetti and colleagues (one of whom is a U.S. Treasury official and another works at the New York Federal Reserve Bank, an organization wholly owned by the Wall Street banks) had the superior managerial skills and banking knowledge of leading foreign bank JP Morgan in mind, when it engaged in its large-scale lending to Enron, to name but an example? The empirical record supports the argument that financial crises can happen, and have happened, in any country, even industrialized countries, whether it be the United States, Sweden, or Japan.

The argument that foreign banks may be less exposed to political pressure to provide lending is based on the unsubstantiated implicit assumption that the banking crises were caused by political pressure on lending. Our discussion of moral hazard pointed to evidence that such pressure came mainly from domestic central banks, as well as foreign pressure groups, including the IMF and the U.S. Treasury. The argument that foreign ownership of banks will mean that domestic central banks would not have to act as lenders of last resort assumes that domestic subsidiaries of foreign banks will be supported by unlimited supplies of liquidity from overseas headquarters (an assumption not backed by empirical evidence) and even then could only hold if 100 percent of domestic banks had been sold to foreign banks. This argument is, of course, contradicted by Argentina's recent experience.

Despite the absence of empirical support for the claim that foreign ownership of banks is a helpful policy, it has been forcefully advanced by the IMF during its intervention in its East Asian client countries. The "Letters of Intent" focused on such ownership issues as changes in laws to allow foreign investors to take over local banks or purchase local real estate or demands that specific banks be sold to "foreign strategic partners" (see Werner 2000a). Since the above reasons cannot rationally support the demand to increase foreign ownership of local banks, further research is needed on what other motivations could exist for the IMF's insistence, and whether there is any causation in the correlation observed by Stiglitz (2002) between the policies advanced by the IMF's

deputy managing director during the Asian crisis and his subsequent employment at the largest U.S. bank. Stiglitz concludes: "Looking at the IMF as if it were pursuing the interest of the [U.S.] financial community provides a way of making sense of what might otherwise seem to be contradictory and intellectually incoherent behaviors" (p. 209).

It is noteworthy that international organizations appear aware of just what provides the main opportunity for increasing foreign ownership and implementing deep changes in the structure of other countries. World Bank staff argue that a "crisis can be a window for structural reform," and it can "be an opportunity to reform the ownership structure in the country" (Claessens et al. 2001, p. 13). The view that a crisis is "an opportunity" or a "window of opportunity" suggests that such crisis is, in some respects, to be welcomed. In Japan, where the crisis has lasted far longer than in most countries, it may not come as surprise to learn that the central bank has been of the same view, arguing, as its governor Mieno did already in 1993, that thanks to the recession everyone was becoming "conscious of the need to implement such [structural] transformation" (Mieno 1993). Bank of Japan official Okina (1999) said: "Couldn't the current low interest rate policy cause some harm? The answer is yes. It could cause some harm. . . . When the economy recovers, nonperforming loans could become collectable, excess inventories could be sold, and excess equipment could become operational" (p. 181). This was to be avoided, since, as the Bank of Japan's Yamaguchi argued, monetary easing would produce a "mitigation of immediate risks," which in turn would result in a "delaying of adopting ultimate solutions" (1999, p. 5).

It remains to be noted that exacerbating a crisis either through lack of action or through active, antigrowth policies *in order to* implement desired structural reforms and changes in the ownership pattern would constitute a Machiavellian and somewhat unethical way to approach financial crises. Whether this has indeed been the main reason why growth-consistent post-crisis policies have rarely been adopted is a topic that requires further research.

## Notes

1. We are therefore not primarily concerned with banking reform that occurs due to different reasons, such as the transition from a socialist to a capitalist economy.

2. In the words of Claessens et al. (2001): "In spite of much analysis, the tradeoffs

along these dimensions are still not well known, leading at times to conflicting policy advice and possibly larger than necessary economic costs" (p. 2).

3. See Kashyap, Stein and Wilcox (1993). Empirical evidence is supportive of the argument that banks are "special" in this sense, such as James (1987), Hoshi, Kashyap and Scharfstein (1991).

4. Hoshi and Kashyap (2000), for instance, advise Japan to "fully open the markets now, most importantly to foreign financial institutions" in order to solve its problems.

5. See Dornbusch and Fischer (1987).

6. See Brunner and Meltzer (1964).

7. Goodhart explains that virtually any multiplier can be construed in order to link a larger aggregate to one of its smaller components. He gives the hypothetical example of the "potato multiplier" of total consumer expenditure to argue eloquently that such exercises do not illuminate behavioral, let alone causal, relationships.

8. See Miller and VanHoose (1993).

9. The introduction of central banks in most countries over the past one hundred or so years did not change the banks' role as the creators of the bulk of the money supply.

10. Handa (2000), p. 25.

11. For an empirical test of these relationships in the case of Japan, see Werner (1997, 2002b). The newly defined velocity was found constant. The model was supported strongly by the data, also in comparison to alternative models. The testing methodology followed the Hendry approach, thus starting with a general model which was sequentially reduced to the parsimonious form. This provides the strongest empirical test of models, as no *a priori* expectations can sway the specification. Werner (1997) also offers an open economy application in which foreign investment is also related to credit in the financial circulation.

12. For successful empirical tests with Japanese data, see Werner (1997, 2002b).

13. The Thai central bank used its "credit planning scheme" to control commercial bank credit. The Korean central bank, just as the Japanese one, used its "window guidance." See Werner (2000a) on Thailand and Werner (1998, 2002a) on how the Bank of Japan used its "window guidance" credit control mechanism to force banks to increase speculative loans during the 1980s.

14. For details on the mechanism designed and commonly employed to prevent such "speculative lending," see Werner (2002c). For details on how this was applied in Thailand, see Werner (2000a); for India, see Werner (2000b); and Japan, see Werner (2002a).

15. Sheng (1992) points out that as a rule of thumb financial distress is likely to become systemic when nonperforming loans, net of provisions, reach 15 percent of total loans (assuming the average ratio of loan/loss provisions to be 50 percent, since then a capital base of 8 percent would be completely eroded by loan loss provisions).

16. For empirical evidence of the credit crunch problem in Japan see, for instance, Matsui (1996). On the United States, see Gertler and Gilchrist (1994).

17. The minimum risk-weighted capital-asset ratio of 8 percent that was introduced by the Basle Committee on Bank Supervision is a case in point. It was implemented in 1992, at a time when the banking boom/bust cycle had turned down in

several countries (Sweden, Norway, Finland, and Japan). There is also evidence that the introduction of the BIS rules compounded the boom/bust cycle by first giving banks incentives to increase credit creation too much (as Japanese banks were allowed to count equity holdings as part of their capital), and then giving them incentives to reduce it when the economy was in recession.

18. For details of the creation and propagation of the Asian crisis in the case of Thailand, see Werner (2000a). For a comparison with the less affected India, see Werner (2000b).

19. In the case of Thailand and Japan, it has been demonstrated that central bank guidance of bank lending triggered the excessive credit creation that produced the subsequent crises (Werner, 2000a, 2002a).

20. Central banks often argue that they should not expand their credit creation through the purchase of assets during times of crisis, as they would make a loss and/or their balance sheets would deteriorate. This argument has no merit for several reasons. First, even if central banks' balance sheets were to deteriorate, then there are no negative consequences. Loss of reputation cannot be an argument, since not adopting the right policies, as has occurred in the case of the Bank of Japan, would surely cause a far more severe loss of reputation. Further, if central banks were not to engage in such transactions in times of crisis, then when should they engage in such transactions? They certainly would not be necessary in times of financial boom. Most of all, the argument that central banks' balance sheets and thus reputations would suffer is based on the assumption that the balance sheet of the central bank is of the same nature as the balance sheet of a private sector corporation or bank. However, a central bank is special. Take the case of a central bank purchasing bad loans from banks at book value (say, for 100), although their market value is lower (say, only 20). It may superficially appear as if a loss of 80 is made. This would be true in the case of agents other than the central bank. The central bank, however, will make a profit of 20 (since it creates money at zero cost and obtains something worth 20 with it). While it is *possible* to represent this transaction on the central bank balance sheet such that the false impression of a loss of 80 is created purely in an accounting-sense, there is no logically compelling reason why one might wish to do so. The habit of treating note issuance as a liability is only a bookkeeping convention due to the historic experience when cash was to be exchanged into gold on demand, and today does not imply that the central bank has any costs or actual liabilities when issuing new money.

Another misunderstanding may arise if one assumes that the economy always operates at the full employment level. As discussed above, in our model the necessary restrictive assumptions are not made and the very nature of a credit crunch recession suggests that the economy will be below full employment. Thus monetary stimulation will not lead to inflation and does not operate via an "inflation tax" or the like.

21. For a more detailed discussion of the Japanese case, see Werner (2002b and 2002d). It echoes the forced closures that were imposed on German companies by the U.S. lenders in the early 1930s.

22. See Posen (2000).

23. As Standard and Poor's argues about Korea and Japan; see David Pilling, "Tokyo Urged to Improve Corporate Governance," *Financial Times*, October 16, 2002.



## References

- Bordo, Michael, Barry Eichengreen, Daniela Klingebiel, and Maria Soledad Martinez-Peria. 2001. "Is the Crisis Problem Growing More Severe?" Mimeo, University of California, Berkeley.
- Boughton, James M. 1991. "Long-run Money Demand in Large Industrial Countries." *IMF Staff Paper* 38, no. 1 (March).
- Brunner, Karl, and Allan Meltzer. 1964. "Some Further Investigations of Demand and Supply Functions for Money." *Journal of Finance* 19, no. 2, Part 1 (May).
- Caprio, Jerry, and Daniela Klingebiel. 1999. "Episodes of Systemic and Borderline Financial Crises." Mimeo, World Bank (October), Washington DC.
- Claessens, Stijn, Daniela Klingebiel, and Luc Laeven. 2001. "Financial Restructuring in Banking and Corporate Sector Crises—What Policies to Pursue?" NBER, April, available at [www.nber.org/books/mgmtcrises/claessens4-24-01.pdf](http://www.nber.org/books/mgmtcrises/claessens4-24-01.pdf).
- Corsetti, Giancarlo, Paolo Pesenti, and Nouriel Roubini. 2001. "Fundamental Determinants of the Asian Crisis: The Role of Financial Fragility and External Imbalances." In *Regional Global Capital Flows: Macroeconomic Causes and Consequences, East Asia Seminar on Economics*, vol. 10, ed. Takatoshi Ito and Anne O. Krueger. Chicago: University of Chicago Press, Federal Reserve Bank of New York, and NBER.
- Davis, E.P. 1989. "Instability in the Euromarkets and the Economic Theory of Financial Crisis." Bank of England Discussion Paper, No. 43.
- Endo, Tadashi. 2001. "Linkage of Corporate Bond Market to Government Bond Market." Paper presented at Workshop on Developing Government Bond Markets in Latin America. International Finance Corporation, World Bank Group, Washington, DC, June 11. Available at [www1.worldbank.org/finance/assets/images/Presentation\\_061101\\_Endo.pdf](http://www1.worldbank.org/finance/assets/images/Presentation_061101_Endo.pdf).
- Faruqi, Shaki. 1994. *Financial Sector Reforms, Economic Growth, and Stability: Experiences in Selected Asian and Latin American Countries*. Washington, DC: World Bank.
- Fisher, Irving. 1911. *The Purchasing Power of Money*. New York: Macmillan.
- Friedman, Milton. 1956. "The Quantity Theory of Money—A Restatement." In *Studies in the Quantity Theory of Money*, ed. M. Friedman. Chicago: University of Chicago Press.
- Fry, Maxwell J. 1978. "Money and Capital or Financial Deepening in Economic Development." *Journal of Money, Credit and Banking* 10, no. 4 (November): 464–75.
- . 1980. "Saving, Investment, Growth and the Cost of Financial Repression." *World Development* 8, no. 4, (April): 317–27.
- . 1984. "Saving, Financial Intermediation and Economic Growth in Asia." *Asian Development Review* 2, no. 1: 82–91.
- Gertler, Mark, and Simon Gilchrist. 1994. "Monetary Policy, Business Cycles, and the Behavior of Small Manufacturing Firms." *Quarterly Journal of Economics* 109, no. 2 (May).
- Goldfeld, Stephen, and Daniel E. Sichel. 1990. "The Demand for Money." In *Handbook for Monetary Economics*, vol. 1, ed. B.M. Friedman and F.H. Hahn, pp. 300–356. Amsterdam: North-Holland.
- Goldsmith, Raymond W. 1969. *Financial Structure and Development*. New Haven: Yale University Press.
- Goodhart, C.A.E. 1989a. "The Conduct of Monetary Policy." *Economic Journal*, vol. 99 (June): 293–346.
- . 1989b. *Money, Information and Uncertainty*. 2d ed. London: Macmillan.
- Government of Korea. 1997, 1998, 1999, 2000. Letter of Intent from the Republic of Korea to the Managing Director of the IMF, Seoul (the public parts of all letters from the first to the ninth are currently available at [www.imf.org/external/country/kor/index.htm?type=23](http://www.imf.org/external/country/kor/index.htm?type=23)).
- Government of Thailand. 1997, 1998, 1999. Letter of Intent from the Kingdom of Thailand to the International Monetary Fund, Bangkok (the published parts of all letters from the first to the eighth are currently available at [www.imf.org/external/country/tha/index.htm?type=23](http://www.imf.org/external/country/tha/index.htm?type=23)).
- Gurley, J.G., and E.S. Shaw. 1955. "Financial Aspects of Economic Development." *American Economic Review* 45, no. 4 (September): 515–38.
- . 1960. *Money in a Theory of Finance*. Washington, DC: Brookings Institution.
- Hinds, Manuel. 1988. "Economic Effects of Financial Crises." Policy Research Working Paper, No. 104. World Bank, Washington, DC.
- Hoshi, Takeo, Anil K. Kashyap, and David Scharfstein. 1991. "Corporate Structure, Liquidity and Investment: Evidence from Japanese Industrial Groups." *Quarterly Journal of Economics*, vol. 106: 33–60.
- International Bank for Reconstruction and Development (IBRD). 2001. *Finance for Growth: Policy Choices in a Volatile World*. Oxford: Oxford University Press.
- James, Christopher. 1987. "Some Evidence on the Uniqueness of Bank Loans." *Journal of Financial Economics*, vol. 19: 217–35.
- Kashyap, Anil K., Jeremy C. Stein, and David W. Wilcox. 1993. "Monetary Policy and Credit Conditions: Evidence from the Composition of External Finance." *American Economic Review* (March): 78–98.
- Kataoka, Hisanori. 1999. "Korean Banking Reform Following the Asian Financial Crisis." Discussion Paper No. 10, March. APEC Study Center, Columbia University, New York.
- Keynes, John Maynard. 1930. *A Treatise on Money*. London: Macmillan.
- Kindleberger, Charles P. 1978. *Manias Panics, and Crashes: History of Financial Crises*. New York: Basic Books.
- Levine, Ross, and David Renelt. 1992. "A Sensitivity Analysis of Cross-Country Growth Regressions." *American Economic Review* 82, no. 4: 942–63.
- Levine, Ross. 1997. "Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Literature*, vol. 35 (June): 688–726.
- Matsui, Kyoshi. 1996. "Kinnen ni okeru ginkou no kashidashi kyoukyuu to jittai keizai katsudou no kankei ni tsuite—Credit crunchron ni kansuru kousatsu." Institute for Monetary and Economic Studies, IMES Discussion Paper 96–J–17, October. Bank of Japan, Tokyo.
- McKinnon, Ronald I. 1973. *Money and Capital in Economic Development*. Washington, DC: Brookings Institution.
- Mieno, Yasushi. 1993. "Current Economic Developments in Japan and Abroad." Special Paper No. 227, May, Bank of Japan, page 13. Transcript of speech

- given by Yasushi Mieno to the Economics Club, Tokyo, April 20, 1993.
- Miller, Roger L., and David D. VanHoose. 1993. *Modern Money and Banking*, International Editions, 3d ed. New York: McGraw-Hill, Inc.
- Minsky, Hyman, P. 1982. "The Potential for Financial Crises." Working Paper No. 46. Washington University, Department of Economics, St. Louis.
- Miyazawa, Kiichi. 1999. "Beyond the Asian Crisis." Speech on the occasion of the APEC Finance Ministers' Meeting in Langkawi, Malaysia, May 15, 1999. Available at [www.mof.go.jp/english/if/e1b068.htm](http://www.mof.go.jp/english/if/e1b068.htm).
- Muellbauer, John. 1992. "Anglo-German Differences in Housing Market Dynamics." *European Economic Review* 36, nos. 2/3 (April): 539-48.
- Newcomb, S. 1885. *Principles of Political Economy*. New York: Harper.
- Okina, Junio. 1999. "Monetary Policy Under Zero Inflation: A Response to Criticisms and Questions Regarding Monetary Policy." *Monetary and Economic Studies* (December 1999).
- Park, Jae-Ha. 2001. "Invitation to Workshop on 'Development of Domestic and Regional Capital Markets' at the Asian Development Bank Institute, June 13-14, Tokyo." Available at [www.worldbank.org/html/extdr/offrep/eap/eapprem/capitalmktworkshopagenda.pdf](http://www.worldbank.org/html/extdr/offrep/eap/eapprem/capitalmktworkshopagenda.pdf).
- Phillips, Chester A. 1920. *Bank Credit*. New York: Macmillan.
- Przeworski, Adam, and James Raymond Vreeland. 2000. "The Effect of IMF Programs on Economic Growth." *Journal of Development Economics* 62, no. 2 (August): 385-421.
- Rojas-Suarez, Juliana. 2001. "From Basel I to Basel II: Implications for Emerging Markets." Washington DC: World Bank.
- Shaw, Edward S. 1973. *Financial Deepening and Economic Development*. New York: Oxford University Press.
- Sheng, Andrew. 1992. "Bad Debts in Transitional Socialist Economies." World Bank, Financial Policy, and Systems Division, Washington, DC.
- . 1996. "Banking Fragility in the 1980s: An Overview." In *Bank Restructuring—Lessons from the 1980s*, ed. Andrew Sheng. Washington, DC: World Bank.
- Stiglitz, Joseph, and Andrew Weiss. 1981. "Credit Rationing in Markets with Imperfect Information." *American Economic Review* 71, no. 3 (June): 393-410.
- Stiglitz, Joseph E. 2002. *Globalization and Its Discontents*. New York: W.W. Norton.
- Sundararajan, Vasudevan, and Tomas Balino, eds. 1991. *Banking Crises: Cases and Issues*. Washington, DC: International Monetary Fund.
- Vittas Dimitri, Gerard Caprio, Patrick Honohan, eds. 2002. *Financial Sector Policy for Developing Countries: A Reader*. Oxford: Oxford University Press, World Bank.
- Werner, Richard A. 1992. "Towards a Quantity Theorem of Disaggregated Credit and International Capital Flows." Paper presented at the Institute of Economics and Statistics, Oxford, and the Bank of Japan, Tokyo, and presented at the Royal Economic Society Annual Conference, York, April 1993.
- . 1997. "Towards a New Monetary Paradigm: A Quantity Theorem of Disaggregated Credit, with Evidence from Japan." *Kredit und Kapital* 30, no. 2 (July): 276-309.
- . 1998. "The Bank of Japan and the Creation of the 'Bubble.'" In *El Japon Contemporaneo*, ed. Florentino Roda and Antonio Lopez. Salamanca: University of Salamanca Press.
- . 2000a. "Macroeconomic Management in Thailand: The Policy-Induced Crisis." In *Rising to the Challenge in Asia: A Study of Financial Markets, Vol. 11, Thailand*, ed., Ghon S. Rhee. Manila: Asian Development Bank. Available at [www.adb.org/Documents/Books/Rising\\_to\\_the\\_Challenge/Thailand/thai-mac.pdf](http://www.adb.org/Documents/Books/Rising_to_the_Challenge/Thailand/thai-mac.pdf).
- . 2000b. "Indian Macroeconomic Management: At the Crossroads Between Government and Markets." In *Rising to the Challenge in Asia: A Study of Financial Markets, Vol. 5, India*. Manila: Asian Development Bank, 2000. Available at [www.adb.org/Documents/Books/Rising\\_to\\_the\\_Challenge/India/indi-mac.pdf](http://www.adb.org/Documents/Books/Rising_to_the_Challenge/India/indi-mac.pdf).
- . 2002a. "Monetary Policy Implementation in Japan: What They Say vs. What They Do." *Asian Economic Journal* 16, no. 2 (June): 111-51.
- . 2002b. "The 'Enigma' of Japanese Policy Ineffectiveness in the 1990s." *The Japanese Economy* 30, no. 1: 25-95.
- . 2002c. "The Impact of Aspects of German Development Economics on Modern Japanese Society." Paper presented at the Sixth Conference on Social Change and Economic Development in the History of Economic Thought, European Society for the History of Economic Thought, University of Crete, Rethymno, March 14-17. (Forthcoming in *Perspectives on the History of Economic Thought*, ed. Yiorgios Stathakis and Gianni Vaggi. London: Routledge).
- . 2002d. "Policies to Increase Nominal GDP Growth in Japan." *Central Banking* 13, no. 2: 48-54.
- Yamaguchi, Yutaka. 1999. "Monetary Policy and Structural Policy: A Japanese Perspective." Speech by Yutaka Yamaguchi, Deputy Governor of the Bank of Japan, before Colloque Monetaire International at Banque de France, October 8-9, 1999. Available at [www.boj.or.jp/en/press\\_](http://www.boj.or.jp/en/press_)
- Yoshitomi, Masaru. 2000. "Policy Prescriptions for East Asia." In *Building an Infrastructure for Financial Stability*, ed. Eric S. Rosengren and John S. Jordan. Federal Reserve Bank of Boston Conference Series No. 44. Boston: Federal Reserve Bank of Boston. Available at [www.bos.frb.org/economic/conf/conf44/cf44\\_20.pdf](http://www.bos.frb.org/economic/conf/conf44/cf44_20.pdf).