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Financial Liberalization, Crisis and Rescue: Lessons for China from Latin America and East Asia?

Barbara Stallings, Brown University

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FINANCIAL LIBERALIZATION, CRISIS, AND RESCUE: LESSONS FOR CHINA FROM LATIN AMERICA AND EAST ASIA?

Barbara Stallings
Brown University

Financial liberalization in the past two decades has profoundly transformed the financial system in developing economies around the world.[1] Broadly speaking, these changes have come about in three stages, although of course there are differences across countries and perhaps across regions. First, liberalization changed the rules under which the financial sector operates, moving from a system where governments heavily influenced the volume, price, and destination of loans to one where private-sector institutions make such decisions on their own. This shift has had important implications for the investment and growth process as well as who has access to finance. Second, in many cases financial liberalization was followed by financial crisis, which required rescue programs absorbing large amounts of fiscal revenues and resulting in steep losses of output. In themselves, these crises have had a long-term impact on the countries where they occurred and the quality of life of their inhabitants. Third, the resolution of the crises further changed the characteristics of the financial sector. On the one hand, they returned governments into the picture, although in a different way than in the past. On the other hand, they brought about significant changes in the ownership pattern of financial institutions, generally including a much stronger role for foreigners.

This paper examines the first two stages of the liberalization process in the context of reflecting on the challenges facing China's financial system and possible lessons that can be learned from the experiences of other emerging market economies. Section 1 begins with a brief look at the characteristics of the Chinese financial sector at the beginning of the twenty-first century. It then turns to selected country experiences from two emerging regions: Latin America and East Asia (excluding China). Section 2 presents our framework and hypotheses for studying liberalization. Section 3 examines statistics on financial liberalization, with particular emphasis on Latin America and East Asia. We ask what policies have been followed, how extensive the changes have been, and whether regional location helps distinguish behavior. Section 4 turns to the relationship between financial liberalization and crisis; it looks at both the theoretical

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[1] This paper is part of a larger project on the "Financial Sector in Latin America and East Asia." I am grateful to the Ford Foundation for its support of the project.

literature and empirical evidence to understand the how liberalization and crisis are linked. Section 5 analyzes short-term rescue mechanisms, their fiscal and other costs, and their degree of success. Longer-term aspects of the rescue programs are beyond the scope of the present paper. Section 6 concludes with some lessons that China might draw from its Asian neighbors and Latin America. Of course, the size of China's economy makes it difficult to extract useful lessons from the experience of others, but many of the issues are common to all emerging markets.

I. CHARACTERISTICS OF THE CHINESE FINANCIAL SECTOR

While China has been undergoing economic reforms for over two decades now, a new turning point was reached when the country joined the World Trade Organization (WTO) in December 2001. Among other obligations, accession to the WTO required much more extensive liberalization of China's financial markets, especially its banking sector. By 2005, geographical and numerical restrictions on foreign banks will be lifted, and the scope of foreign banking activities will be gradually expanded. Five years after accession, foreign banks will enjoy full national treatment. Their aim, of course, is to gain access to the domestic currency market, both for deposits and loans. Just as foreign merchants have hungered for centuries for access to the "China market," so banks and other financial service providers dream of participating in the intermediation of China's $1 trillion pool of household savings. For its part, China's government believes that the resulting rise in competition will increase the efficiency and productivity of the financial sector itself and that it will have positive spillover effects on the production system, in both the state and private spheres of the economy. Thus, the considerable sacrifices that will be required are considered an acceptable price to pay for the expected long-term reward of maintaining a growth rate sufficient to deal with employment and other social needs.[2]

China's financial sector has changed dramatically over the last 25 years. For the first three decades after the 1949 revolution, China had only a single bank, the People's Bank of China (PBC), which allocated credit according to central planning criteria. Starting in 1978, however, with the general initiation of economic reforms, financial diversification also began. Four state commercial banks were set up to assume the commercial banking functions of the PBC: the Bank of China, the Agricultural Bank, the Construction Bank, and the Industrial and Commercial Bank. The PBC, in turn, assumed the normal functions of a central bank. Later,

[2] On China and the WTO, see Lardy (2002), Panitchpakdi and Clifford (2002).

publicly-listed commercial banks were established, and many non-bank financial institutions appeared, notably the thousands of rural and urban cooperatives. In the mid-1990s, three new "policy banks" – the State Development Bank, the Export-Import Bank of China, and the Agricultural Development Bank – took over the role of providing subsidized credit to the government's priority projects. As a consequence, the four state-owned commercial banks evolved further in the direction of their western counterparts and are the dominant institutions of the financial sector today. Beyond banking, China has two stock markets, in Shanghai and Shenzhen, where the number of listed companies rose from zero in 1990 to around 1200 in 2002; market capitalization at some $500 billion exceeds that of all Asian exchanges except Japan.[3] A much smaller bond market, predominantly featuring issues of government paper, completes the current design of the financial sector, as shown in Table 1.[4]

The financial sector just described is embedded in a larger macroeconomic and structural context, which must be taken into account in order to understand the characteristics of the financial sector itself. Just as central planning requirements led to a single bank that served as a funnel for government funds in the early revolutionary period, so the partially liberalized, but still state-controlled, economy shapes financial sector operations today. In macroeconomic terms, the most important characteristics are the closed capital account and the non-convertibility of the renminbi (RMB), together with the power of the authorities to set interest rates. These characteristics limit the volatility to which the financial sector is subject, but they also limit its ability to allocate resources efficiently. In structural terms, the centrality of state-owned enterprises, which are generally in a very weak financial position, and which continue to be the main borrowers from the banks, has a strong negative impact on the latter's balance sheets.

China's performance during the recent Asian financial crisis both provided satisfaction to authorities and served as a wake-up call about what could happen in the future. While GDP growth slowed by about three percentage points between 1995-96 and 1998-99, output nonetheless expanded by nearly 8% in 1998, a year in which most economies in the region contracted.[5] Moreover, the external accounts continued strong, and the RMB maintained it

[3] This figure exaggerates market capitalization in the sense that some 60% of shares are not traded; these are held by the central or local governments or "legal persons." Thus, a complementary statistic is the so-called negotiable capitalization; both statistics are given in Table 1.
[4] For a more detailed look at China's financial sector, see Lardy (1998, chps. 3 and 4); Chen, Dietrich, and Fang (2000); Shirai (2002a and 2002b).
[5] For a comparison, see Fernald and Babson (2000).

nominal value and even appreciated in real terms against the dollar. No banks collapsed or had to be taken over by the government, as happened elsewhere in the region. On the surface, then, it appeared that the Chinese economy was operating from a position of strength.

At the same time, no one – including Chinese officials – doubts that China's financial sector also suffers from serious underlying problems. We have already seen the extent to which banks dominate the financial sector. More important is the dominance within the banking industry of the four state-owned commercial banks. Table 2 shows the high level of concentration among deposit-taking institutions; the four hold 73% of total assets and a similar share of loans and deposits. Foreign banks play an extremely marginal role. While more than 150 foreign banks have branches in China, they are limited to foreign currency transactions and represent a mere 1.3% of total loans outstanding.[6] Taking a more aggressive stance, a few foreign institutions have recently purchased small stakes in some of the publicly-listed (but still state-controlled) banks: Citibank bought 5% of Shanghai Pudong Development Bank; HSBC acquired 8% of Bank of Shanghai and 20% of Bank of Communications; and Newbridge Capital holds a 20% share in Shenzhen Development Bank.[7] In addition, two of the four state banks – Bank of China and the China Construction Bank – are seeking foreign stakeholders.

An examination of the traditional indicators of financial performance reveals significant problems, especially among the four state-owned banks. Return on assets (ROA) is low in international terms, between 0.1 and 0.2 in recent years. This was substantially lower than returns on the publicly-listed banks in China, which had ROA ratios of nearly 2 in the mid-1990s, but have themselves fallen to around 0.5.[8] Capital adequacy ratios are also generally below the BIS-mandated 8%, according to a recent statement by the Governor of the PBC.

Most attention by experts, however, has been directed to the non-performing loans (NPLs) in the banking system. A recent BIS study reported that NPLs amount to 42% of loans outstanding of the four state-owned banks, including both those turned over the asset management companies established to deal with the bad loans and those still held by the banks themselves. The total amounts to 35% of GDP in 2001. The BIS economists also raised concerns about the funding amounts and sources for the asset management firms.[9] Other experts believe

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[6] Lardy (2001:272).
[7] *The Economist* (March 8, 2003).
[8] Shirai (2002a:14).
[9] Ma and Fung (2002).

the NPL problem is even greater than the BIS estimate. Nicholas Lardy cites three reasons, based on information from the Governor of the PBC. First, the NPLs are still continuing to emerge, so the problem is one of flows rather than stocks. Second, China has only recently begun using a more stringent loan classification system, which greatly increases the NPL statistics. The figure reported by the Governor (45% of loans outstanding) could thus be nearer to 65% by the new criteria; this would be 60% of GDP. Third, the figures cited refer only to the four state-owned banks, but the publicly-listed banks are also under state control, and they have NPLs as well.[10]

The main reason for the large stock of NPLs is the weak condition of the state-owned enterprises, which are the main clients of the banks; reportedly 80% of the four banks' loans go to state-owned firms.[11] Until these firms at least begin to break even, there is no way the banks can really improve their performance without changing their client base. A recent study by the Asian Development Bank Institute, which examines the banks and their clients after the reform process, tries to determine whether such a change is taking place. The conclusion is that, during the 1994-2000 period, banks had a lending bias toward large and less profitable firms and firms with greater state ownership.[12] A parallel study looks at China's equity markets and finds that less profitable, large, and old firms prefer bank lending despite rising stock prices that lower the cost of equity finance. This suggests that they are getting favorable financing conditions. The other side of the picture is that newer firms, including exporters and the private sector in general, cannot get credit and have to rely on retained earnings, foreign direct investment, or informal (and thus more expensive) credit.[13]

Despite these criticisms, experts agree that substantial progress has been made toward improving the banking system and the equity markets. Better prudential regulations have been established, together with a new bank regulatory agency; banks are learning about risk management; the asset management firms have begun to tackle the NPLs; and the government has made a third contribution to improving capital-asset ratios. Government officials clearly believe that a greater foreign bank presence will help push the reforms further, as will recent changes in personnel, including the highly-regarded heads of the PBC and the China Bank Regulatory Commission.

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[10] Lardy (2001).
[11] *The Economist* (February 8, 2003).
[12] Shirai (2002a).
[13] Shirai (2002b).

II. FINANCIAL LIBERALIZATION: SOME HYPOTHESES

China's situation can be considered an extreme example of the characteristics of the financial systems in many developing countries in the early postwar period. Domestic financial systems were dominated by the banking industry, which was tightly controlled by economic authorities, either because of concern about financial stability or because banks were an important instrument of development strategy. First, interest rates on both deposits and loans were set by the government. The real rates were often negative, as least ex post, as inflation exceeded nominal rates. Second, reserve requirements were very high, so the commercial banks had little freedom to expand their portfolios. Third, governments issued administrative directives for the allocation of a substantial share of commercial bank credit. Fourth, governments prohibited banks from engaging in international lending or borrowing, or limited the volume and uses of such funds. Finally, government-owned banks were responsible for a large amount of the lending that took place, often intermediating between external sources of credit and local borrowers. Together, these characteristics were referred to as "financial repression."

Proponents of reform saw financial repression as leading to low savings rates, since depositors received low or negative interest on their funds; low monetization of the economies; limited access to credit, especially for small and medium-sized firms; and credit directed to borrowers on the basis of political connections, rather than the profitability of their projects. Financial liberalization would remove these burdens, they argued, enabling countries to mobilize increased volumes of resources, deploy them more efficiently, and thus accelerate investment, productivity, and growth.[14]

Opponents of liberalization were much more cautious. Even those who agreed with the criticisms of financial repression worried that the proposed solution could be worse than the problems it was meant to resolve. On the one hand, there was the concern that the mechanisms already in place to mobilize resources – however flawed they might be – would be replaced by speculative forces that would result in crisis, chaos, and economic decline. These problems would be magnified if domestic liberalization were accompanied by external financial liberalization, such that large, volatile capital flows could overwhelm weak local banks. On the

[14] The early arguments along these lines were made by McKinnon (1973) and Shaw (1973). The classic review of the literature is Fry (1995). More recently, see Caprio, Honohan, and Stiglitz (2001).

other hand, there was a fear that long-term finance would disappear in a liberalized system, and access to finance would be limited to a small group of large firms and wealthy households.[15]

We will argue in this chapter that both positions embody some elements of truth. The outcomes depend heavily on the way liberalization policies are implemented, the other policies that accompany them, and the institutional framework in which the changes take place. Of course, the outcomes also depend on the international context for liberalization, but that is beyond the control of the developing countries themselves.

We begin by defining what we mean by financial liberalization. The term has been used in different ways in the literature, which helps explain some of the confusion and disagreement. For our purposes, financial liberalization refers to the partial or complete elimination of government-imposed restrictions on domestic financial behavior, so that economic agents can make their own decisions with regard to the volume, price, and timing of financial transactions. Two elements are of particular note about this definition. First, there is no implication that complete liberalization is involved; rather the emphasis is on the direction of change. Put another way, the process is not conceived as a dichotomous choice of repression or liberalization, but as a range of possible points on a spectrum. Second, we do not include international financial liberalization as part of the definition per se. While in practice the two usually go together, as components of a more generalized move toward greater reliance on the market, we find it more useful to consider international liberalization as one of the policies that might accompany (domestic) financial liberalization.

Based on this definition, we present a framework for analyzing the liberalization process, which includes the variables mentioned: implementation, accompanying policies, and institutional context. Table 3 summarizes a simple model of financial liberalization, according to these dimensions. The broadest question is whether the liberalization process is "successful," where success (as defined in the introductory chapter) includes financial stability, increased rates of growth, and broader access to finance by lower-income households and small enterprises. Whereas in the book as a whole we are interested in all three goals, in this chapter we concentrate on the first one, asking under what conditions liberalization will have a positive outcome (stability) versus a negative one (crisis).

[15] Fry (1995) reviews a half dozen type of critiques of the McKinnon-Shaw thesis. Major examples include neostructuralists, such as Taylor (1983), and market failure approaches, such as Stiglitz (1994). For an updated version of Stiglitz's argument, see Caprio, Honohan, and Stiglitz (2001: Chp. 2).

With respect to implementation, the key distinction involves speed and extent. Are restrictions eliminated in a very short period of time, or is a more gradual approach followed? If the latter, how far does liberalization go? Are all restrictions eventually removed, or do some remain? Are all public-sector banks terminated, or are some retained? Elaborating on policies accompanying liberalization is more complex; even in simplest terms, three sets of policies must be considered. First is macroeconomic policy. Is price stability maintained, and are deficits kept under control? Is the exchange rate managed to keep a competitive rate or is overvaluation permitted? Equally important, is there stability in the real economy – investment, consumption, and employment? Second, does international financial liberalization accompany domestic liberalization? Specifically, what happens with the capital account of the balance of payments? Are some or all components opened for inward and/or outward transactions? Is this complete or partial? Rapid or gradual? Does it precede or follow domestic liberalization? Third, does a system of prudential regulation and supervision precede financial liberalization? Do rules adhere to international standards on all major items? Is supervision strong enough to enforce the regulations?

A successful financial liberalization requires the strengthening – or even the creation – of a number of institutions. Is there an overall legal framework that protects contracts and responds to complaints in an expeditious manner? Does the central bank have at least some degree of autonomy from the political process? Is there a competent regulatory and supervisory agency? Are the banks sophisticated enough to conduct proper credit analysis of potential borrowers? All of these institutions take time to develop, so the time frame within which the liberalization process is judged is important. Finally, the international context in which domestic financial liberalization occurs will influence the outcome. The economic activity level can be supportive or not; the international regulatory environment for capital flows can help or hinder. But developing countries cannot control this factor, so we do not include it in our schema.

Our hypotheses, as spelled out in Table 3, are that success in financial liberalization is optimized by (1) a gradual process of liberalization, although one that eventually leaves decisions to private-sector actors; if public-sector banks continue, they should be run on a transparent and efficient basis; (2) a policy combination of macroeconomic stability with a competitive exchange rate; partial opening of the capital account, following domestic liberalization; and prudential regulation preceding liberalization; and (3) an institutional

framework with a strong legal system and competent operating agencies. In the discussion that follows and in other chapters, we "test" these hypotheses in a qualitative way by examining experiences in individual countries.

The follow-up to financial liberalization and crisis, if one occurs, is a rescue package and institutional change. In general, these processes have been less controversial than financial liberalization itself. Most experts have been quite pragmatic on the prescription of rescue policies, and most governments have used some combination of market-based and government-managed programs. Nonetheless, there is debate on the extent to which governments should rescue ailing institutions. In particular, the issue of moral hazard is raised, but the use of public moneys to "bail out" private actors has also been a political issue in some cases.[16]

Despite differences of opinion on these several issues, an agreed-upon set of stylized facts can be identified with respect to the empirical process of financial liberalization, crisis, and rescue in recent years. Financial liberalization took place in most developing countries. It was frequently undertaken without an adequate regulatory environment in place. Newly liberated banks increased loans very rapidly without proper credit analysis or provisions for losses. In the extreme, they took advantage of loose regulation by engaging in fraudulent activities. Unless authorities acted in an expeditious and effective way, crisis resulted, possibly facilitated by a volatile economy and policies that stimulated large capital inflows. To prevent a systemic meltdown, governments intervened to rescue the banks – even if such intervention ran counter to their ideological predilections. Short-run policies included takeover of insolvent institutions, recapitalization, purchase of non-performing loans, and support for debtors. Longer-term policies involved divestiture of intervened banks, frequently resulting in increased foreign ownership, and an improved system of regulation and supervision. Whether this sequence resulted in strong performance by the recovering financial system depended on the details of the policies and their implementation.

[16] For examples of a pragmatic, mixed approach compared to one that argues for a particular alternative, see Calomiris, Klingebiel, and Laeven (2004) and Honohan and Klingebiel (2003), respectively.

III. FINANCIAL LIBERALIZATION: EMPIRICAL TRENDS

Financial liberalization has been a very broad-based process in recent decades, involving developed as well as developing countries. Several data sets are available that enable us to compare Latin America with other regions as well as to compare countries within Latin America. Using a cross-regional sample makes it possible to see if Latin America's financial liberalization had unique characteristics or if the worldwide process has been basically the same everywhere.

The most useful for our purposes is a World Bank data set that includes OECD countries, Latin America, and East Asia during the period 1973-2002.[17] The overall index is composed of three sub-indexes: domestic financial liberalization (our definition), international liberalization, and stock market liberalization. Each sub-index, in turn, is made up of several indicators. Domestic financial liberalization includes eliminating regulations on deposit and lending interest rates, allocation of credit, and foreign-currency deposits. International liberalization is measured by the end of regulations on offshore borrowing by financial and non-financial institutions, multiple exchange rate markets, and controls on capital outflows. Stock market liberalization is gauged by the abolition of regulations on foreign acquisition of shares in the domestic stock exchange, repatriation of capital, and repatriation of interest and dividends. All of the indexes vary between 1.0 and 3.0, where larger numbers indicate greater liberalization.[18]

III. 1. THE LIBERALIZATION INDEX IN INTERNATIONAL COMPARISON

Figure 1 plots the monthly variation of the overall index for the three groups of countries. It shows that the OECD countries already had substantially more liberalized financial markets at the beginning of the period and – with the exception of a brief period in the mid-1970s – advanced steadily till 1990,[19] at which time they reached the most liberalized position possible on the index and stayed there throughout the following years. The Asian countries followed a similar path, but they began at a much lower point and had yet to reach full liberalization in

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[17] Only 14 OECD countries are included: Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Norway, Portugal, Spain, Sweden, the United Kingdom, and the United States. OECD members Mexico and Korea are included with their respective regions. The seven Latin American countries are Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela. The East Asian cases are Hong Kong, Indonesia, Korea, Malaysia, Philippines, Taiwan, and Thailand. We have eliminated Hong Kong, since its entrepot status gives it atypical characteristics.

[18] The index is described in Kaminsky and Schmukler (2003). The numerical data are found on Schmukler's home page (www.worldbank.org/research/bios/schmukler.htm).

[19] The small decline in the OECD index was due to the influence of Italy, Denmark, and especially Portugal, all of which had activist governments in the mid-1970s.

2002. The highest point (2.7 on the index) was attained in the early 1990s and continued at that level except for a small drop around the time of the Asian financial crisis. But it is interesting to note how small that reversal was, despite the tremendously negative impact of the crisis in the Asian countries.

In some ways, Latin America lies in between the OECD and Asia. It began in an intermediate position in 1973 and ended between the other two in 2002. In the intervening years, however, Latin America demonstrated characteristics that were quite sui generis. First, the initial increase in the 1970s was very rapid; indeed, the Latin American index actually exceeded that of the OECD countries for a brief period in 1976-78. This rise was followed by a sharp and extended reversal during the debt crisis of the 1980s, in contrast to the much milder reaction in the Asian region in the 1990s. Only in 1988 did the liberalization process begin anew, and for the next several years the speed surpassed any period in any other region. From 1991 to 2002, there was again a good deal of stop-go movement. In other words, as a region Latin America was characterized by a much more volatile liberalization path than East Asia or the OECD.[20]

Since our definition of financial liberalization concentrates on domestic processes, it is important to examine that component of the index separately. Figure 2 does so for the same three regions. While the pattern for the OECD and Asian countries mirrors trends already seen in Figure 1, domestic liberalization in Latin America shows even greater volatility than the overall index. In particular, in the 1970s, domestic financial markets in Latin America were significantly more open than in the OECD region. That gap ended with the debt crisis, however, when Latin American governments reversed their policy stance. By the 1990s, Latin America had joined the OECD countries at the highest level of liberalization, with the exception of limited reversals in the period around the Mexican crisis in 1995 and later in Argentina in 2001-02. With respect to domestic financial liberalization, Asia remained slightly less open than Latin America and the OECD, as it did on the broader index.

III. 2. THE LIBERALIZATION INDEX IN LATIN AMERICA AND EAST ASIA

Figure 3 disaggregates the components of the index for Latin America. The overall index and the domestic financial component are the same trends that have already been presented; data for liberalization of the capital account of the balance of payments and the stock market are added.

[20] This finding is consistent with other characterizations of Latin America as an extremely volatile region on many indicators (see, for example, IDB, 1995).

As can be seen, the domestic financial sector was the leading edge of liberalization, almost always exceeding the overall index. The greatest volatility was embodied in the capital account, which began as the most liberalized part of the index, fell to complete closure in the late 1980s, became completely liberalized in the later 1990s, and then fell off again. The stock market was liberalized more slowly and in smoother fashion.

In general, the seven Latin American countries where data are available followed the volatile path already seen for the region as a whole. As can be observed in Table 4, which shows individual country data for the overall index, the main exception was Colombia. Leaving aside a few months in 1986, Colombia followed a gradual strategy of financial opening throughout the 1973-2002 period. It is perhaps not coincidence that Colombia was the only one of the seven that did not have full financial opening by 2002. Chile also followed a less volatile path than its neighbors. After reaching an index level of 2 in 1981, on the eve of its major financial crisis, the index dropped back to 1 for a single year, and then gradually re-opened again to reach 3 in the late 1990s.

The domestic component of the financial liberalization index for the seven Latin American countries shows more extreme values and changes than the overall index, but this is because of the way the latter is constructed (as the average of the values for the three sub-indexes, where the sub-indexes are integers).[21] That fact aside, Table 5 shows the same differences among the countries as with the overall index. Again, Colombia is the most stable reformer, reaching full liberalization in 1981 and remaining at that level with only a brief, very partial reversal in 1986. Chile reached full liberalization earlier, in 1976, but had a more drawn-out retrenchment in the 1980s. The remaining five countries had much more volatile histories with domestic liberalization.

The other information that is especially useful for our purposes in the World Bank index concerns trends in international financial liberalization (capital account opening) and its relationship to domestic financial liberalization. In three countries – Brazil, Chile, and Colombia – capital account opening lagged domestic financial trends during most of the period 1973-2002. For these three countries, full capital account opening occurred only in the late 1990s. In the

[21] There is no reason that the values of the sub-indexes for any given country should be integers, since they are the average of several indicators. The methodology seems to have been to assign values of 3 (fully liberalized), 2 (partially liberalized), or 1 (fully repressed) based on the behavior of the indicators as a group rather than assigning values to each indicator and taking the average.

other four cases, trends in domestic and international policy were either quite similar (in Argentina and Peru) or the latter was more open than the former (in Mexico and Venezuela).[22] If we assume that the expected pattern would be for both processes to move at more or less the same pace, then it is interesting to speculate on the reasons for deviations from expected behavior. In the case of Mexico and Venezuela, the closer economic relationships with the United States (together with the influence of the oil markets) are probably major explanatory factors. For Brazil, Chile, and Colombia, the pattern reflects the attempt to maintain control over macroeconomic and financial policy through less international opening.[23]

Individual East Asian countries also demonstrated differences among themselves and with Latin America, as can be seen in Table 6. Overall, the East Asian countries were less inclined toward financial liberalization than their Latin America counterparts. By 2002, only two countries – Taiwan and Thailand – were completely open according to the World Bank index for overall financial liberalization, and even they arrived at this position only in the late 1990s. In terms of the liberalization process, the Philippines and Taiwan opened in a gradual, smooth way; so did Korea, except for a reversal during the 1997-98 crisis. Malaysia and Thailand were especially prone to reversals, which occurred at various points, including the crisis, as governments tried to manage the liberalization process. Indonesia opened more rapidly than its neighbors, but then quickly reversed course even before the crisis struck.

Unlike Latin America, domestic financial liberalization was a laggard in East Asia. By the late 1980s, four countries were still completely closed as far as domestic indicators were concerned; what liberalization had taken place was in the capital account or the stock market. By the mid-1990s, however, all had index scores of 3 for domestic liberalization, and these scores did not change during the crisis. It was the capital account that was partially or completely closed in the latter period.[24] The data suggest a much more cautious attitude toward financial liberalization than was found in Latin America.

Summarizing, then, we can say that Latin America was similar to Asia and the OECD in that financial liberalization was a policy choice prevalent in all three groups of countries during the 1973-2002 period. Nonetheless, Latin America was distinctive in that the region

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[22] Calculated from the disaggregated data for the index (Schmukler website).

[23] While this policy preference is well known in Chile in recent times, it is interesting to find it in the early years of the military government as well.

[24] Calculated from disaggregated data for the index (Schmukler website).

demonstrated substantially greater volatility in the liberalization process that did its counterparts elsewhere. This volatility spanned the entire period covered by the World Bank index, but it was especially pronounced during the debt crisis of the 1980s when all countries reversed their liberalization policies. No similar policy change was found in Asia in the 1990s; only a very brief and mild reversal occurred in a few countries (Korea, Malaysia, and Thailand). In addition, Latin America was more positively disposed toward liberalization than its Asian counterparts. Comparisons among Latin American countries suggest some interesting differences. Colombia and Chile showed less volatility than the others; together with Brazil, they were also reluctant to open the capital account completely until the last few years. Argentina, Mexico, Peru, and Venezuela experienced sharper and more frequent policy reversals than the other three, and international liberalization accompanied or even led domestic liberalization. We now want to see if these differences are related to the presence or absence of crises in the region.

IV. FINANCIAL LIBERALIZATION AND CRISIS

The Asian financial crisis, and the Mexican experience a few years earlier, spawned a large literature on new causes of crisis. Moreover, even though Michel Camdessus referred to Mexico as the first crisis of the 21st century, there were close similarities to the Chilean crisis of 1981-83.[25] The analysis of new causes began with the argument that the recent crises were not examples of the old macroeconomic syndrome seen throughout the postwar period, whereby a large fiscal deficit and loose monetary policy led to a devaluation that had negative impacts on the economy and thus on bank loan portfolios.[26] Nor were they the result of microeconomic problems in particular banks, which led to panics that spread to the banking system as a whole and might undermine the currency as a result of rescue policies.

IV.1. NEW EXPLANATIONS FOR CRISES

While most economists agreed that something new was happening, they differed on the key elements of the new paradigm. Two separate approaches emerged initially: one concentrated on domestic factors, while the other focused on international factors and contagion. Over time, some

[25] See Edwards (1996) on the comparison between Chile and Mexico.

[26] It is common to speak of two generations of such models. The first focused on government attempts to defend the currency, followed by a speculative attack after reserves fell to some critical level (e.g., Krugman, 1979). The second was more complex: a speculative attack could result from either a predicted deterioration of economic fundamentals or a self-fulfilling prophecy (e.g., Obstfeld, 1986).

degree of consensus seemed to develop to the effect that both domestic and international processes were involved, perhaps in a necessary-sufficient relationship.

The domestically-oriented approach argued that structural and policy distortions in the countries concerned were the main causes of the crises – even if market overreaction and herding made them more severe than would otherwise have been the case. The early IMF version of this approach with respect to the Asian crisis focused on four alleged problems.[27] First was overinvestment with respect to domestic savings, which – given the lack of fiscal deficits – was the counterpart of large current account deficits and increasing (short-term) foreign capital inflows.[28] Second were deficiencies in macroeconomic management, mainly the pegging of exchange rates to the dollar but also underlying demand pressures that tended to be ignored. Third were financial sector weaknesses, including inadequate regulation and supervision, poor corporate governance, lack of transparency, and imprudent lending. Finally, it was acknowledged that the international environment contributed to the crises, but the focus was more on trade and declining competitiveness than on financial flows and contagion.

Among the most influential academic analyses following the domestic approach, Corsetti, Pesenti, and Roubini centered their argument on three manifestations of moral hazard.[29] At the corporate level, firms made unwise investments with the supposition that they would be bailed out if they got into serious difficulties. At the financial level, banks borrowed excessively abroad and lent excessively at home, enabling unprofitable investment to go on. Although the financial sector was characterized by weak regulation and supervision, low capital adequacy, non-market criteria for project selection, and outright corruption, the close bank-corporate-government nexus again set up the expectation that no bank would be allowed to fail. The international dimension of moral hazard involved foreign banks lending in ways that resembled their local counterparts, assuming that they would be rescued by local governments and/or the IMF if the need arose. These internal weaknesses made the countries vulnerable to a reversal of capital inflows.

The other approach to explaining the crises agreed that these domestic weaknesses were present, but pointed out that they had existed for a long time, while the crisis countries had

[27] IMF (1997). Successive issues of the *World Economic Outlook*, after this first reaction in the early months of the crisis, reflected the increasing convergence of opinions across the initial domestic-international divide.
[28] In the 1997 analysis, the IMF pointed out that in Mexico the issue was overconsumption, not overinvestment (IMF, 1997: 10-11). The same could also be said for the other Latin American cases, where savings and investment have always been far lower than in East Asia.
[29] See Corsetti, Pesenti, and Roubini (1998a, 1998b). The popularized version of the moral hazard argument centers on the concept of "crony capitalism." See, for example, Kang (2001) on Asia and Haber (2002) on Latin America.

nonetheless been extremely successful. Consequently, it was argued, understanding the reasons for the crises required a focus on new relationships with the international financial markets. In particular, the liberalization of the capital account of the balance of payments in developing countries had enabled banks and corporations to borrow large amounts of capital from abroad, but these same flows could easily be reversed if a political, economic, or even psychological shock occurred. The outflows, or "sudden stops," were the main sources of the crises.[30] This argument was frequently accompanied by a sharp criticism of the international financial institutions – especially the International Monetary Fund – for promoting capital account opening as well as for the conditionality on their rescue packages, which were said to have exacerbated the crises.[31]

A more technical version of this argument was provided by Radelet and Sachs, who centered their analysis on "the intrinsic instability of international lending," or what they called self-fulfilling crises.[32] Initially, lenders were eager to pour large amounts of money into countries that were seen as good risks because of rapid growth and other positive features. But a shock of whatever kind could generate sudden demands for repayment, which turned into a panic as each creditor tried to get out first. In such cases, individual creditors acted rationally, but the collective outcome led to costly crises that were not necessary. Central to the argument was the distinction between illiquidity and insolvency. A liquidity crisis occurs when a solvent, but illiquid, borrower is unable to obtain fresh funds from the international markets because of collective action problems. Such a situation creates multiple equilibria. One equilibrium is where loans are rolled over by most or all lenders, the solvent borrower continues to carry out its business activities, and the lenders receive their payments as scheduled. A quite different equilibrium involves a panic among lenders, where no one is willing to roll over loans; this is often referred to as herd behavior. The situation is unstable because it is possible to shift from one equilibrium to the other almost instantaneously, on the basis of changing market psychology.[33]

One of the problems with the above analyses from our perspective – in addition to the tendency to focus on one explanation or the other, rather than the relationship between them – is the blurring of banking and currency crises. Thus, the literature on so-called twin crises is

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[30] Calvo (1998).
[31] See, for example, Stiglitz (2002: Chp. 4). A critical, but more measured, approach to the role of IFIs can be found in Dooley and Frankel (2002: Chps. 10 and 11).
[32] Radelet and Sachs (1998).
[33] See Masson (1999) for a discussion of multiple equilibria.

particularly useful. Kaminsky and Reinhart, together with others who have built on their path-breaking work, stress the need to separate the two types of crisis since they are related, but different.[34] In historical terms, Kaminsky and Reinhart found many currency crises but few banking crises before financial liberalization ended the tightly controlled financial systems in developing countries. In the 1980s and 1990s, by contrast, both were frequent. The general pattern was for banking crises to precede currency crises, being set off by financial liberalization, credit booms, and excess liquidity. A banking crisis undermined the currency, leading to devaluations that, in turn, exacerbated the banking problems. The peak of a banking crisis generally followed a currency crisis.

Other analyses of twin crises put even more emphasis on the relationship with financial liberalization. Glick and Hutchinson, using a much larger sample than Kaminsky and Reinhart, came to the conclusion that twin crises are limited to financially liberalized, emerging market economies; only in that group were robust results obtained.[35] Unfortunately, they do not put much stress on the mechanisms by which financial liberalization brings about crises. In this sense, Weller's analysis is complementary.[36] He finds that both banking and currency crises were more common after domestic and international financial liberalization. The latter allowed more liquidity to enter a country, while the former provided the opportunity for new speculative investment in addition to investment in the real economy. As investors saw a divergence between the real and financial sectors, capital outflow was more likely, bringing with it a higher probability of devaluation. At the same time, overvalued currencies, resulting from the initial capital inflows, also put pressure on the exchange rate. One of the most interesting findings is that currency crises became less likely with the passage of time, while banking crises became more likely. Weller's explanation is that authorities have done a better job of introducing policies to stabilize the real economy than the financial system.

IV.2. FINANCIAL CRISES IN LATIN AMERICA AND EAST ASIA

Latin American countries have suffered many financial crises in the postwar period. The vast majority were either currency crises detonated by excess domestic demand or banking crises set off by problems in individual institutions that spread to the system as a whole. After the

[34] Kaminsky and Reinhart (1999).
[35] Glick and Hutchinson (2001).
[36] Weller (1999).

economic reform process began, prominently featuring both domestic financial liberalization and opening the capital account, the region has witnessed three dramatic twin crises of the "new" type. One reaches back to the early 1980s, and it is no coincidence that it took place in Chile, which was the first country to undertake sustained economic reforms beginning in the 1970s. The second was Mexico in 1994-95, accompanied by spillover effects in Argentina. The third example again took place in Argentina, beginning in 2001.[37]

In East Asia, currency and banking crises have been much less frequent and milder when they occurred. Indeed, the deep crises of 1997 were almost uniformly described as unexpected, and the governments were correspondingly unprepared to deal with them – in contrast with their Latin American counterparts who had much more experience, even if they had been dealing with different types of crisis in the past. While we will discuss the Latin American cases in some detail in later chapters, it is useful to summarize the main points here to see how these cases fit the theoretical propositions in the literature. We also want to see how the Latin American crises were similar to, and different than, those in East Asia. Table 7 provides data to help in the comparison. It includes a number of variables that have been associated with financial crises.

We begin with Chile as the earliest of the twin crises in our sample. The Chilean crisis derived in large part from an extreme version of financial liberalization, reflecting the anti-government ideology of the military regime that took power in 1973. State-owned banks were quickly sold off to (subsidized) private buyers, extensive controls on the financial sector were abolished, and the capital account was partially opened. At the same time, macroeconomic policy used the exchange rate as a nominal anchor to cut inflation, and capital inflows offset large current account deficits in the face of fiscal surpluses. Banks took advantage of the unregulated conditions to pump up loans, including many to "related" borrowers, and ignored potential losses. In 1981, a severe banking crisis erupted. The following year, the situation was complicated by a balance-of-payments crisis, leading to a devaluation of the fixed exchange rate that worsened the banking crisis. The latter was marked by the insolvency of the majority of the private national banks and finance houses, which were taken over or liquidated by the Banking

[37] There have been many other banking crises in recent years in Latin America, but they have typically been due to problems in individual banks that spread to other institutions.

Superintendent. By mid-1982, the crisis had become a systemic one, extending to many of the largest corporations, which also ended up in government hands.[38]

The Mexican crisis 13 years later was extraordinarily similar. Indeed, experts asked how Mexico could have failed to heed the lessons from a relatively recent case in its own region.[39] Mexico also moved from an environment of state-owned banks and strong financial repression to a private-sector dominated, loosely regulated financial system in the space of a few years from the late 1980s to the early 1990s. The credit boom was very similar, as were the insider lending and the failure to make adequate provisions for possible losses. Although Mexico did not have a fixed exchange rate, the currency was informally linked to the dollar in the context of a tripartite agreement designed to lower inflation. Again like Chile, there was no significant budget deficit, but the large volume of capital inflows served to finance large current account deficits, driven by an overvalued peso. Perhaps the greatest dissimilarity was a superficial one – the currency crisis broke first, in December 1994, and the devaluation brought down the banks. Nonetheless, many of the banks had been insolvent earlier, although their condition was hidden by lax government accounting standards.[40] In addition, Mexico’s international relationships were much more favorable than Chile’s had been a decade earlier. Only months before the crisis struck, Mexico had joined the OECD and the NAFTA agreement had gone into effect. Thus, the external dimensions of the Mexican crisis were mitigated by a large loan from the U.S. Treasury and the IMF, while Chile had had to deal with its problems on its own.[41]

The third twin crisis in the Latin American region occurred in Argentina. Ironically, Argentina in the mid-1990s seemed to be a good example of a crisis that was overcome by prompt and effective government action. Caught in the tidal wave of the Mexican collapse, and constrained because its currency board system prevented the central bank from functioning as a lender of last resort, the country suffered a run on its banks, which lost 18% of their deposits in four months. The run was stopped by a large loan from the IMF and World Bank, together with a local “patriotic bond” purchased by the banks and large corporations. The authorities beefed up the system of regulation and supervision and negotiated a contingent credit line with foreign banks, which constituted a proxy lender of last resort. As a result, growth resumed and the banks

[38] For references, see Chp. 5 (this volume).
[39] See, for example, Edwards (1996).
[40] See discussion of different definitions of non-performing loans in Haber (2004).
[41] For references, see Chp. 6 (this volume).

more than regained the deposits they had lost. In terms of capital adequacy ratios, Argentine banks were among the most solid in the world, although other indicators were less positive.

By the end of the decade, however, the picture turned bleak again, due to a combination of international shocks and internal political and economic factors. A large and growing current account deficit resulted from the overvalued exchange rate, and a severe recession after 1998 undermined fiscal revenues and the banks' portfolios. The currency board, of course, prevented the central bank from providing liquidity. Notwithstanding a brief respite due to the election of a new president and another IMF package, conditions deteriorated sharply in 2001. A "voluntary" debt restructuring was carried out to help relieve fiscal pressures, but by the end of the year the government froze all bank deposits to avoid devaluing the currency. In part because of opposition to this move, months of political chaos resulted. Early 2002 saw a large devaluation and the end of the currency board, together with a default on the country's foreign debt obligations. The unique factor in the Argentine case, in contrast to Chile or Mexico, was that the government targeted the banks to pay much of the cost of the crisis. To protect debtors, bank assets and liabilities were converted to local currency at different exchange rates, leaving them insolvent. The government's default on its own obligations, many of which were held by the banks, deepened the latter's problems.[42]

Although Latin America and East Asia had appeared to share similar characteristics of financial repression in the past, significant differences separated the two regions. In particular, East Asia's banking systems were an integral part of a very successful development strategy that had produced the highest growth rates in the world over a 35-year period from 1960 to 1995.[43] For most of that time, East Asia's banks had very little autonomy to make loan decisions; rather governmental authorities provided funds and directed their use in line with attempts to promote particular industries and firms. This meant that regulation and supervision were weak if they existed, central banks were under the control of finance ministries, and banks lacked skills at credit evaluation. While there were differences across countries, from the point of view of an East Asia-Latin America comparison, these were less important than the similarities.[44]

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[42] On Argentina, see Kiguel (2001); de la Torre, Levy, and Schmukler (2003); Fanelli (2003); Todesca and Acosta Ormaechea (2003); Díaz Bonilla et al (2004).
[43] For a summary, see World Bank (1993). Alternative interpretations are found in Amsden (1994), Fishlow (1994), and Stiglitz and Yusuf (2001).
[44] The most important differences were between the Northeast Asian countries (Korea and Taiwan, as well as Japan) and those in Southeast Asia (Indonesia, Malaysia, Philippines, and Thailand). The former were much more closed

By the mid to late 1980s, however, banking systems in East Asia were already beginning to change. In part, this was because of structural shifts in their own economies, but it was also because the East Asian countries had become major players in world markets and the industrial countries complained that their banks provided unfair advantages. Looking back to Table 6, we see that all six economies – Indonesia, Malaysia, Philippines, and Thailand in Southeast Asia as well as Korea and Taiwan in Northeast Asia – became more open in this period, regardless of the level of openness had prevailed previously. The former group started the liberalization process much earlier than the latter, but all six pushed forward in the five years between 1983 and 1987. The particular pattern of liberalization varied, however, as we will see below.

Of the six, four became engulfed in dramatic financial crises a decade later. To the external world, the events began suddenly, in July 1997, when Thailand was forced to devalue the baht. In reality, the problems began much earlier, and financial liberalization again set the stage as it had in Latin America. After suffering financial instability in the early 1980s, Thailand recovered and grew at an average rate of 9% between 1987 and 1996. During this decade, the country implemented many structural reforms, including a comprehensive domestic financial liberalization and the opening of the capital account. As usual, the proper institutional safeguards were not in place before the changes took place. Together, the combination led to a credit boom, stimulated by capital inflows that averaged over 9% of GDP during the period, translating into an investment boom in the productive sectors and a hike in asset prices. By the mid-1990s, the negative consequences of the boom – plus adverse international conditions – were beginning to appear: exports slowed, the current account deficit rose, stock market prices fell, several corporations ran into difficulties, and the portfolios of banks and finance companies deteriorated. The government tried various stop-gap measures, but could not use a high interest rate policy because of the weakness of the financial sector. Ultimately, then, they floated the baht, which quickly depreciated, exacerbating the untenable position of the banks.[45]

What turned one country's problems into a region-wide crisis was the contagion that spread from Thailand to three of its neighbors during the second half of 1997, but internal weaknesses had also built up in other Asian economies. The other Southeast Asian countries that

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and state-dominated, while the latter were more open and depended more on the private sector, including foreign capital.

[45] On Thailand's financial crisis, see Vajragupta and Vichyanond (1999), Alba, Hernández, and Klingebiel (2001), Nidhiprabha (2003), and Warr (2004).

were severely damaged by the crisis – Indonesia and Malaysia – shared some characteristics with Thailand, although Malaysia pursued a more heterodox policy stance both before and after the crisis. Indonesia carried out its domestic financial liberalization in two stages, in 1983 and 1988, both as the result of declines in the price of oil, one of the country's main exports. An important consequence was a rapid rise in the number of banks and the volume of credit as well as the displacement of the state banks from their previously dominant position. While Indonesian authorities tried to improve regulations in step with the liberalization, these were not enforced. In addition, substantial related lending took place, and banks were subjected to political pressures from groups near the Suharto government. At the macroeconomic level, government policies both allowed private-sector agents to borrow abroad and encouraged them to do so through high domestic interest rates and obstacles to particular types of domestic finance. Capital inflows – frequently short-term flows – led to an overvalued exchange rate and an enlarged current account deficit. Contagion from Thailand came both through pressure on the currency and the refusal of foreign banks to roll over loans.[46] The main differences in the Malaysian case were a more gradual financial liberalization process and the continuation of more controls even in the late 1990s. The level of technical expertise at the central bank and the regulatory agencies was also higher than elsewhere in Southeast Asia. Together, these factors meant that Malaysia's level of vulnerability was lower in comparison to its neighbors.[47]

The country whose crisis constituted the biggest surprise to outsiders and insiders alike was Korea, which had become a major economic powerhouse, especially in its export capacity. Partly as a result, Korea was under pressure to liberalize its financial system, and it began to do so in the late 1980s. The plan was to carry out the liberalization gradually to avoid the kind of vulnerabilities that others had encountered. In the early 1990s, however, Korea began negotiations to join the OECD, which led to an acceleration of the reforms, both internal and external. As is now generally acknowledged, the sequencing of the liberalization process was poorly planned, and a very large short-term debt was built up both by financial and non-financial firms. These processes provided the conditions for contagion to spread from Southeast Asia to what appeared to be one of the strongest economies in the world.[48]

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[46] Indonesia's crisis is discussed in Ghosh and Pangestu (1999), Nasution (1999, 2002), Pangestu and Habir (2002).
[47] On Malaysia, see Jomo (2001), Dornbusch (2002), Kaplan and Rodrik (2002), Chin and Jomo (2003). For a comparison of the experiences of Indonesia and Malaysia, see Nasution (1998).
[48] On Korea, see Hahm (1999), Cho (2002), Coe and Kim (2002), Ahn and Cha (2004).

III.3. ANALYSIS OF FINANCIAL LIBERALIZATION AND CRISES

As can be seen from this brief survey, together with the literature based on broader samples of countries and using quantitative methods, there has been a close link between financial liberalization and twin crises. Moreover, a look back at Table 7 confirms that the twin crises in our study have been of the new type. That is, they have taken place when fiscal and monetary indicators were in relative balance, although a number of other problems were certainly present.[49] We finish this section by returning to the hypotheses presented earlier to see if the variables cited there can help specify the nature of the relationship between financial liberalization and crises. We also bring in cases where crises did not occur or where they were of a different type than the new twin crises.

Of the 13 Latin American and East Asian countries included in the World Bank indexes,[50] seven suffered financial problems that belong to the category of new twin crises. In each case, financial liberalization appeared to have set off a process that led to a crisis. Three sets of variables were proposed in Table 3 to disaggregate the concept of financial liberalization and to help explain the juxtaposition of liberalization and crisis. They were the speed, extent, and sequencing of domestic financial deregulation, the policies that accompanied the latter, and the institutions to support the new system.

Reviewing the evidence, the first set of variables seems less important than the others. All 13 cases – crisis and non-crisis countries – had completely opened their domestic financial systems in the period immediately preceding the crises. Moreover, whether they opened gradually or abruptly does not appear to be a crucial factor in distinguishing among cases. Some that opened very rapidly had crises (e.g., Argentina, Chile), others did not (e.g., Peru) In terms of sequencing, the relationship between external and internal opening – together with the presence or absence of adequate regulation and supervision – was more important than the sequencing of dimensions of internal opening.

[49] In this sense, we are in agreement with Kaminsky and Reinhart (1999), who insist that we are not dealing with countries where everything had been done well, such that the only issue to be explained was an undeserved speculative attack.

[50] Actually there were 14, but as mentioned earlier, Hong Kong was eliminated because of its particular characteristics as an entrepot.

The central differences across cases were determined by the policies that accompanied domestic financial liberalization. The key macroeconomic variable turned out to be the exchange rate. If the rate was fixed, whether formally or informally, it tended toward overvaluation and thus current account deficits, especially in the presence of an open capital account. Policy toward the capital account, in turn, was also crucial, most importantly with respect to the rules on short-term inflows; foreign direct investment and official loans were much less disruptive. The most explosive combination was an abrupt opening to short-term flows, when domestic liberalization was taking place simultaneously or had occurred in the recent past. Under these conditions, there was a pent-up demand for external finance, while domestic financial institutions had little or no experience in the international markets. Finally, adequate regulation and supervision were rarely in place before domestic financial liberalization, leading to the familiar phenomenon of a lending boom without concern for losses. The typical pattern was for the strengthening of regulation and supervision to be part of post-crisis clean up rather than pre-crisis preventive strategy.

The third set of variables was relevant because good policies could not be designed and implemented without adequate institutions in place. Clear examples on the public-sector side were central banks free of intense political pressure on monetary policy, and regulatory and supervisory agencies that could set and enforce rules. On the private side, it was important for commercial banks to have both the skills and the incentives to carry out thorough credit analysis of potential borrowers and to make lending decisions on the basis of project potential rather than insider connections. Credit bureaus and rating agencies have come to be recognized as providing useful back-up support to the banks in the lending process. At a broader level, adherence to the rule of law, together with a judicial system that protects private property, provides an appropriate environment of expectations plus the mechanisms to enforce the law so that banks are willing to take the risks involved in lending.

What about the countries that did not suffer twin crises? Can they shed any light on the relationship between financial liberalization and crises? Six of the 13 cases – Brazil, Colombia, Peru, and Venezuela in Latin America, plus the Philippines and Taiwan in East Asia – did not encounter twin crises of the new type, although most had serious problems with their banks. These cases can be divided into three categories: (1) potential twin crisis situations, where governments acted preventively; (2) less developed economies that did not attract much short-term capital; and (3) economies that had banking problems of other kinds.

The prime exemplar of the first category in Latin America is Brazil; in East Asia, the Philippine government followed similar policies. When the Mexican crisis occurred, Brazil's banks were already weak because of the hyperinflation the country had suffered and the adjustment they had to make after the successful 1994 stabilization program. The disappearance of inflationary gains as a source of profit led Brazil's private banks to expand credit, especially to consumers. Together with high interest rate policy and rising unemployment, the credit boom led to a rise in non-performing loans. Public banks faced special difficulties due to their limited capacity to restructure their portfolios and their high operational costs. The key point is that the Brazilian authorities did not wait for a full-blown crisis to erupt, but took the initiative to reduce the number of banks, restructure those that were in difficulty but could be saved, recapitalize the system in general, allow foreign banks to enter the market, expand the powers of bank regulators, and increase requirements for capital adequacy and transparency. Proof of the effectiveness of the measures was the lack of a serious banking crisis in the face of the January 1999 devaluation.[51] In the case of the Philippines, the government also took preventive action under the Aquino and Ramos governments. Balance sheets were cleaned, following the abuses of the Marcos period, and prudential regulations were strengthened substantially, including capitalization requirements, auditing requirements, loan loss provisions, and limits on related lending.[52]

The Philippines also fits into the second category of countries that might well have developed twin crises, but did not because they did not receive much short-term capital inflow. Both the Philippines and Peru had liberalized their domestic financial systems and opened their capital accounts (in the case of Peru, the financial reforms were some of the most radical in the world). Nonetheless, these two countries suffered few problems in relative terms, in part because they appeared as less attractive investment sites than their more successful neighbors in Asia and Latin America, respectively. For example, much more of their foreign debt was owed to official creditors than was the case with their regional counterparts. Peru also had a large quantity of reserves to back up its debt (and one of the few floating exchange rates in emerging markets in the 1990s).[53]

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[51] For references, see Chp. 7 (this volume).
[52] On the financial problems in the Philippines, see Hutchcroft (1999), Montes (1999), Gochoco-Bautista (2003).
[53] Given Peru's lack of a crisis, literature is scarce. See IMF (1998, 2004).

The third category – countries with other types of crises – also had cases in both East Asia and Latin America. Taiwan escaped the 1997 crisis that ravaged the rest of East Asia, in large part because of its huge foreign exchange reserves and perhaps its slower liberalization, but it nonetheless had serious banking problems. The difference with respect to its neighbors is that these problems had no external detonator. They resulted from the bursting of asset bubbles in real estate and the stock market, together with problems in the old public-banking sector, which led to low profitability and a high share of NPLs.[54] On the Latin American side, Colombia and Venezuela had crises that were reminiscent of older style financial problems. Both had large fiscal deficits and crises that were centered on particular banks (Banco Latino in Venezuela) or particular segments of the financial sector (cooperatives and savings and loan institutions in Colombia).[55]

In summary, these examples of countries that did not suffer the new type of twin crisis show that government policy can make a difference in crisis prevention. One lesson centers on improving regulation and supervision before a twin crisis breaks (e.g., Brazil and the Philippines). Another concerns debt management and the need to avoid large short-term foreign debts (e.g., Taiwan, with little debt of any kind; Peru and the Philippines, with emphasis on long-term debt from official lenders). Ironically, a number of the countries that escaped crisis did so because they were perceived to be less attractive than their neighbors – whether for economic or political reasons. Successful countries must be particularly aware of the pitfalls that their very success can generate.[56]

V. RESCUE PROGRAMS: COSTS AND OUTCOMES

Rescue programs have typically consisted of both short- and long-term elements. The latter, which involve structural change as well as new institutions and policy directions, will be the subject of the next three chapters. Here we concentrate on the immediate response, including the characteristics as well as the cost of the rescue programs. In addition, we want to examine the outcomes five years after the crises (or the latest available observation) to see to whether the rescue operations were successful. Success is defined by a country's performance on three

[54] On Taiwan, see Yang and Shea (1999), Chow and Gill (2000), Montgomery (2002, 2003).
[55] On Venezuela, see de Krivoy (2000); on Colombia, see Uribe and Vargas (2002).
[56] See Ffrench-Davis (2001) for a discussion of the special problems of successful countries.

economic variables: the GDP growth rate, the investment to GDP ratio, and the credit to GDP ratio.

There are several taxonomies of short-term rescue measures discussed in the literature. We focus on the provision of liquidity, recapitalization, the removal of non-performing loans from bank balance sheets, and the temporary take-over or the closing of insolvent institutions. In ascending order of interventionism, these are the measures that have been most common among the cases we are examining. Their purpose is to deal with the immediate hemorrhaging of the financial institutions through restoration of confidence in the banking system. It is also to keep credit flowing by improving bank balance sheets. Whether these short-term goals are achieved depends on the severity of the crisis and the context in which it takes place (e.g., overall level of confidence in the government, support from international actors, behavior of other economic variables). In addition, of course, measures are also generally taken to help debtors. While these are intimately connected to support for creditors, they are beyond the scope of our analysis.[57]

The need for liquidity can involve either domestic or foreign currency. The former is simply an extrapolation of the normal function of a central bank as lender of last resort. The microeconomic difficulty in a crisis situation is deciding whether a particular bank is solvent but illiquid, and thus a candidate for support, or whether it is insolvent, in which case other measures are called for. The macroeconomic problem is the tradeoff between providing sufficient liquidity to satisfy the banks' needs versus providing so much that it undermines the value of the currency – and helps provoke a twin crisis, as discussed earlier. If the need for liquidity concerns foreign exchange, the situation is much more complex since it requires the use of the (always limited) stock of international reserves. The ability to call on international assistance is crucial under these circumstances. If the central bank cannot provide liquidity in case of local currency, or international help is not available (or is not considered desirable) in the case of foreign currency, then non-market solutions are likely to be used, such as a deposit freeze and/or capital controls. This was what happened in Argentina and Malaysia, respectively, in comparison with the other crises we have examined.

[57] Measures to help debtors can either help or hurt creditors. In Argentina, for example, a more favorable exchange rate was applied to bank liabilities than to assets, leaving the banks insolvent. On measures to help debtors, including corporate restructuring and its relation to bank restructuring, see Collyns and Kincaid (2003: Chp. V) and Hoelscher and Quintyn (2003: Chp. VII).

Recapitalization goes beyond the temporary need for greater liquidity to deal with the solvency of an institution. Today, a minimum capital-asset ratio of 8% for internationally active banks is mandated by the Bank for International Settlements; some country regulators demand an even higher ratio. If a bank falls below the required level, the least interventionist solution is for the government to require recapitalization. Recapitalization can come through market operations, whereby current shareholders provide additional capital or banks issue new shares. Alternatively, if this is impossible, the government can provide temporary assistance. Often a combination has been used. In Mexico, for example, for each peso the government put in, the banks had to contribute two pesos.

Further support can be provided through the removal of non-performing loans from bank balance sheets. A broad array of techniques has been tried, some more successful than others. In principle, individual banks or groups of banks can set up such an arrangement; Thailand took this route in the early months of its crisis. More common is a government-controlled asset management company, such as those set up in Indonesia, Korea, Malaysia, and eventually in Thailand. Mexico's deposit insurance agency performed a similar function as did Chile's central bank. Argentina's solution still remains to be determined. The incentives embodied in the particular arrangements are very important in whether they push the banks to resume lending. Many experts believe such incentives were not provided in the Mexican case, where credit as a share of GDP continues to fall, whereas they were in Chile, where credit eventually began to expand. In Asia, Korea has been more like Chile, whereas Thailand and Indonesia have been more similar to Mexico.

Finally, in the most extreme situations, a government agency can take control of banks or even close them. Depending on the treatment of depositors, the latter can be very expensive. Also, if it is done poorly, closing banks may make crises worse (as happened in Indonesia). If banks are hopelessly insolvent, however, keeping them open may be the worst decision. With potentially viable banks, temporary government intervention provides an opportunity to restructure and recapitalize them before reprivatizing them at a later stage. Normally, the goal is to keep the banks functioning (the "open bank" solution), as part of the goal of maintaining credit, but a management change is almost sure to occur. In our cases, all governments closed or merged banks, such that the number of financial institutions fell substantially in comparison with

the pre-crisis period. In addition, all governments took over some or most banks and later began to reprivatize them.

These various types of support – together with assistance for debtors, both households and corporations – are likely to be extremely costly to the countries involved. The most commonly cited costs are fiscal outlays. As shown in Table 8, these range from 4% of GDP to 52% in the cases we are examining. The median was 28%, with Latin America and East Asia being very similar. Although not shown in the table, the countries without twin crises had substantially lower costs. Several studies have tried to determine why fiscal costs vary across cases.[58] Here we are mainly interested in underlining the magnitude of lost opportunities – obviously, the government funds that go into bank rescues cannot be used for other activities, whether public-sector investment projects or social services – and asking how Latin America fared in comparison with East Asia.

But the costs are not limited to absorption of government revenues. Others include lost GDP, larger government debt, lack of credit, weaker firms, perhaps higher inflation. Moreover, there is frequently an income transfer to the wealthiest groups in society, which can be debilitating to a government in political terms, and poverty is likely to be negatively affected, which also has political as well as social and economic costs.[59] Table 8 provides indicators of some of these other costs. GDP loss in the worst year of the crises averaged nearly 10%, while interest rates and inflation rose substantially and asset prices plummeted. The main differences between Latin America and East Asia on these other measures was much higher real interest rates in the former, but a steeper fall in asset prices in the latter.

A final point to keep in mind is that crises are usually not resolved quickly. On the contrary, the effects of a serious crisis will last for years. Although measuring the lingering impact of a crisis is very difficult, Table 9 provides some tentative estimates by looking at the variables mentioned earlier – GDP growth, investment, and credit to the private sector – five years after a crisis. GDP, corrected to eliminate the recovery portion of post-crisis growth, in all cases except Mexico was substantially lower in the five years after the crisis than in the comparable period before. The regional data for both Latin America and East Asia show that corrected growth rates fell more than two thirds on average. In the case of the investment ratio,

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[58] Honohan and Klingebiel (2003), for example, argue that accommodating policies lead to higher fiscal costs, while Claessens, Klingebiel, and Laeven (2004) stress the role of institutions in determining the cost of crises.
[59] On poverty and crises, see Cline (2002), Baldacci, de Mello, and Inchauste (2004).

all East Asian countries suffered a large decline from the peak just before the crisis to the end of the five-year post-crisis period. In Latin America, this fall did not occur, perhaps because investment ratios were already at such low levels. With respect to credit to the private sector, there was a general tendency for the ratio to remain much lower five years after the crisis than in the prior peak. There were, however, two exceptions. Chile and Korea, the two countries that arguably did the best job of which responding to their respective financial crises, saw credit either remain at the same level or even increase.

VI. LESSONS FOR CHINA FROM EMERGING MARKET ECONOMIES

At the beginning of the twenty-first century, despite its impressive economic trajectory, China faces a number of challenges with respect to its financial sector. These are magnified by the deadlines for liberalization accepted in the WTO accession process. The main challenges can be summarized as follows:

- Domestic financial liberalization – to provide individual institutions with greater liberty to make decisions on who receives credit and at what price – will have to be expanded.
- Prudential regulation and supervision need to be strengthened, and macroeconomic stability secured, preferably before the liberalization process proceeds much further.
- The capital account must be liberalized in due course, but it should be done in a gradual and orderly manner and, if possible, after the domestic financial system is strong enough to deal with the new challenges that will result.
- NPLs must be rapidly reduced and a more transparent process established for funding them. A means should be developed to avoid incurring large volumes of additional bad loans in the future.
- The trend toward diversification of ownership will have to be stepped up, but some well-run public-sector banks may have a useful role to play in terms of expanding access to finance.
- Over time, the stock and bond markets should be strengthened to provide alternative sources of finance for firms and investments for households.

This paper has concentrated on the first four challenges. Since the financial sector plays such a central role in the economy, and it is such a fragile institution, the liberalization process must be very carefully thought out. Three areas of policy were hypothesized to be important –

the speed and extent of the domestic financial liberalization process, the policies that accompany domestic financial liberalization, and the institutions that are needed to support a liberalized financial system. China lags behind most developing countries in terms of financial liberalization, which means that it can take advantage of their experiences, despite the difference in size and background. As China moves toward a western-style financial system, similarities will become more important than differences.

First, with respect to domestic financial liberalization, no hard evidence was found to link the speed of this process and the stability of the new systems in Latin America or East Asia. But the Chinese case may be different because of the lack of experience in decision-making at the micro level. This would seem to auger for a gradual liberalization process insofar as WTO obligations permit. In particular, it will be important to improve the balance sheets of the individual financial institutions – by cleaning up the NPLs and raising capital ratios – and to strengthen their ability to engage in credit analysis before current regulations are lifted.

Second, the policies that accompany domestic financial liberalization must be selected with great care, and the sequencing must be well planned. China's difficulties in macroeconomic management have been on display in recent months in terms of lack of instruments to slow an overheated economy. Our cases show that stability in the real economy is an essential prerequisite for financial stability; even the best-managed financial system is hard pressed to function well in a volatile setting. Likewise, the international aspects of financial liberalization have often undermined sensible domestic financial and macroeconomic policies. China is currently under substantial pressure to open its capital account completely and to float the RMB. Others have cautioned prudence, however, precisely because of the potential negative effects on the banking system. Our evidence supports the latter position: most financial crises have been detonated by overambitious and poorly planed international financial openings. Fortunately, less controversy exists with respect to the need for improved prudential regulation and supervision of the banking system. Powerful international institutions, especially the BIS and IMF, have been pushing in this direction (although some at the World Bank believe their colleagues are promoting too much regulation). Again, our evidence suggests that liberalization without prior strengthening of regulation and supervision is a recipe for trouble. The typical reaction was a lending boom without concern for quality, which led to the accumulation of non-performing loans and falling capital ratios.

Third, and closely interrelated with both of the previous points, institutional development is essential for a successful financial liberalization process. In overall terms, the rule of law and a strong judicial system are prerequisites. In addition, regulatory and supervisory agencies, central banks, macroeconomic ministries, and individual banks themselves all need to be nurtured – and this takes time. While China has such institutions in the formal sense, of course, they are not fully prepared to deal with the challenges that will arise once the current controls on the financial system are relaxed. The same was true in most of our cases in Latin America and Asia as well, but important strides have been made in these two regions – usually after crises have occurred – and their experiences should prove useful to Chinese authorities.

Like most other developing countries, China has opted for a market-based economy, and an autonomous financial sector is a crucial part of such a system. So it is not a question of whether financial liberalization will occur, but whether it will be an orderly process or a crisis-ridden one. We have shown evidence of the costs that crises incur, costs that persist for a lengthy period and bring great harm to the economies that suffer them. If China can learn some lessons, both positive and negative, from other countries that have already gone through the liberalization process, it may have a chance of escaping the ills that a poorly managed process is bound to bring.

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Table 1. China: Domestic Credit, Bonds, and Stock Market Capitalization, 1992-2000 (% of GDP)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Domestic credit	94.7	103.6	92.3	91.1	97.2	106.2	119.5	130.4	132.7
Bonds	8.4	7.2	6.6	9.6	11.0	13.0	17.2	21.7	24.3
Government	4.8	4.6	4.9	5.6	6.4	7.4	9.9	12.9	15.3
Corporate*	3.6	2.6	1.7	4.0	4.6	5.6	7.3	8.8	9.2
Total stock market capitalization	3.9	10.2	7.9	5.9	14.5	23.4	24.5	32.3	53.8
A shares		9.6	7.5	5.7	13.9	22.9	24.3	31.9	53.1
B shares		0.6	0.4	0.3	0.6	0.5	0.3	0.4	0.7
Negotiable market capitalization	na	2.5	2.1	1.6	4.2	7.0	7.2	10.0	18.0
A shares		2.0	1.7	1.4	3.7	6.5	7.0	9.7	17.4
B shares		0.5	0.3	0.3	0.5	0.5	0.3	0.3	0.6
Total (1)**	107.0	121.0	106.8	106.6	122.7	142.6	161.2	184.4	211.0
Total (2)***	na	113.3	101.0	102.3	112.4	126.2	143.9	162.1	175.2

* Includes bonds isued by financial institutions.

** Total based on total market capitalization.

*** Total based on negotiable market capitalization.

Source: Calculated from Shirai (2002a:13).

Table 2. China: Concentration among Deposit-Taking Financial Institutions, end 2000
(billion yaun and percent)

Type of institution	Total assets	Loans	Deposits
State-owned commercial banks	10,144 [72.9%]	7,606 [74.7%]	7,751 [68.4%]
Publicly-listed commercial banks	1,529 [11.0]	846 [8.3]	1,187 [10.5]
Credit cooperatives	2,073 [14.9]	1586 [15.6]	2,192 [19.4]
Finance companies	162 [1.2]	143 [1.4]	194 [1.7]
Total	13,908 [100.0]	10,181 [100.0]	11,324 [100.0]

Source: Calculated from Fitch Ratings (2002).

Table 3. Relationship between Financial Liberalization and Outcomes

Dimensions	Positive Outcomes	Negative Outcomes
Implementation	Gradual and extensive	Rapid and complete
Other economic policies		
* Macroeconomic	Prices and real economy stable	Instability in one or both
* International	Partial liberalization	Complete liberalization
* Regulatory	Tight regulation/supervision	Loose regulation/supervision
Institutions	Strong	Weak

Table 4. Latin America: Financial Liberalization Index, 1973-2002

Year	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Venezuela
1973	1.0	1.3	1.0	1.0	1.7	1.7	1.7
1974	1.0	1.3	1.3	1.1	2.0	1.7	1.7
1975	1.0	1.3	1.6	1.3	2.0	1.7	1.7
1976	1.3	2.0	1.7	1.3	2.0	1.7	1.7
1977	2.3	2.0	1.7	1.3	2.0	1.7	2.3
1978	2.4	2.0	1.7	1.3	2.0	1.7	2.3
1979	2.7	1.3	1.9	1.3	2.0	1.7	2.3
1980	2.7	1.3	2.0	1.4	2.0	1.7	2.3
1981	2.7	1.3	2.0	1.7	2.0	1.7	2.6
1982	1.6	1.3	1.9	1.7	1.6	1.3	3.0
1983	1.0	1.3	1.0	1.7	1.0	1.3	2.4
1984	1.0	1.3	1.3	1.7	1.0	1.3	1.7
1985	1.0	1.3	1.7	1.7	1.0	1.3	1.7
1986	1.0	1.3	1.7	1.3	1.0	1.3	1.7
1987	1.2	1.3	2.0	1.7	1.0	1.0	1.7
1988	1.7	1.7	2.0	1.7	1.1	1.0	1.0
1989	2.4	2.0	2.0	1.7	1.9	1.0	2.2
1990	3.0	2.3	2.5	1.7	2.0	1.0	3.0
1991	3.0	2.5	2.5	2.3	2.4	2.3	3.0
1992	3.0	2.7	2.7	2.3	3.0	3.0	3.0
1993	3.0	2.7	2.7	2.3	3.0	3.0	2.7
1994	3.0	2.3	2.7	2.3	3.0	3.0	1.4
1995	3.0	2.6	2.7	2.3	3.0	3.0	1.4
1996	3.0	2.7	2.7	2.3	3.0	3.0	2.7
1997	3.0	2.7	2.7	2.3	3.0	3.0	3.0
1998	3.0	2.7	2.8	2.4	3.0	3.0	3.0
1999	3.0	3.0	3.0	2.7	3.0	3.0	3.0
2000	3.0	3.0	3.0	2.7	3.0	3.0	3.0
2001	2.7	3.0	3.0	2.7	3.0	3.0	3.0
2002	1.1	3.0	3.0	2.7	3.0	3.0	3.0

For definitions of indexes, see text.

Source: Sergio Schmukler website.

Table 5. Latin America: Domestic Financial Liberalization Index, 1973-2002

Year	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Venezuela
1973	1.0	1.0	1.0	1.0	1.0	2.0	1.0
1974	1.0	1.0	2.0	2.0	2.0	2.0	1.0
1975	1.0	1.0	2.7	2.0	2.0	2.0	1.0
1976	1.0	3.0	3.0	2.0	2.0	2.0	1.0
1977	3.0	3.0	3.0	2.0	2.0	2.0	1.0
1978	3.0	3.0	3.0	2.0	2.0	2.0	1.0
1979	3.0	1.0	3.0	2.0	2.0	2.0	1.0
1980	3.0	1.0	3.0	2.3	2.0	2.0	1.0
1981	3.0	1.0	3.0	3.0	2.0	2.0	1.8
1982	2.0	1.0	2.8	3.0	1.7	1.0	3.0
1983	1.0	1.0	1.0	3.0	1.0	1.0	3.0
1984	1.0	1.0	2.0	3.0	1.0	1.0	1.2
1985	1.0	1.0	2.0	3.0	1.0	1.0	1.0
1986	1.0	1.0	2.0	2.0	1.0	1.0	1.0
1987	1.5	1.0	2.0	3.0	1.0	1.0	3.0
1988	3.0	2.0	2.0	3.0	1.3	1.0	3.0
1989	3.0	3.0	3.0	3.0	2.8	1.0	3.0
1990	3.0	3.0	3.0	3.0	3.0	1.0	3.0
1991	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1992	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1993	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1994	3.0	3.0	3.0	3.0	3.0	3.0	2.3
1995	3.0	3.0	3.0	3.0	3.0	3.0	1.0
1996	3.0	3.0	3.0	3.0	3.0	3.0	2.5
1997	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1998	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1999	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2001	2.8	3.0	3.0	3.0	3.0	3.0	3.0
2002	1.0	3.0	3.0	3.0	3.0	3.0	3.0

For definition of index, see text

Source: Sergio Schmukler website.

Table 6. East Asia: Financial Liberalization Index, 1973-2002

Date	Indonesia	Korea	Malaysia	Philippines	Taiwan	Thailand
1973	1.0	1.0	1.3	1.0	1.0	1.0
1974	1.0	1.0	1.7	1.0	1.0	1.0
1975	1.0	1.0	1.3	1.0	1.0	1.0
1976	1.0	1.0	1.3	1.3	1.0	1.0
1977	1.0	1.0	1.3	1.3	1.0	1.0
1978	1.7	1.0	1.4	1.3	1.0	1.0
1979	1.7	1.0	1.9	1.3	1.0	1.3
1980	1.7	1.0	2.0	1.3	1.0	1.3
1981	1.7	1.0	2.0	1.5	1.0	1.3
1982	1.7	1.0	2.0	1.7	1.0	1.0
1983	2.0	1.0	2.0	1.7	1.0	1.0
1984	2.0	1.0	2.3	1.7	1.1	1.0
1985	2.0	1.0	2.3	1.7	1.3	1.0
1986	2.0	1.0	2.0	1.9	1.3	1.0
1987	2.0	1.0	2.0	2.0	2.0	1.0
1988	2.4	1.3	2.0	2.0	2.0	1.3
1989	2.8	1.3	2.0	2.0	2.2	2.0
1990	3.0	1.3	2.0	2.0	2.3	2.0
1991	2.4	1.7	2.6	2.0	2.3	2.0
1992	2.3	1.7	2.7	2.0	2.3	2.9
1993	2.3	2.0	2.7	2.0	2.3	3.0
1994	2.3	2.0	2.6	2.7	2.3	3.0
1995	2.3	2.3	3.0	2.7	2.3	2.9
1996	2.3	2.7	3.0	2.7	2.3	2.7
1997	2.3	2.7	3.0	2.7	2.7	2.4
1998	2.3	2.7	2.1	2.7	2.9	3.0
1999	2.3	2.3	2.0	2.7	3.0	3.0
2000	2.3	2.3	2.3	2.7	3.0	3.0
2001	2.3	2.3	2.3	2.7	3.0	3.0
2002	2.3	2.3	2.3	2.7	3.0	3.0

For definition of index, see text

Source: Sergio Schmukler website.

Table 7. Latin America and East Asia: Characteristics preceding Financial Crises

Region/ country	Crisis Date	Liberalization Index* Domestic	Liberalization Index* International	Fiscal ÷ GDP*	Curr Acct ÷ GDP*	Sh-term debt ÷ Reserves*	Δ Credit** Priv Sector	NPLs* ÷ Credit
Latin America		3.0	2.6	-1.4	-4.0	149.2	10.5	
Argentina	2001	3.0	3.0	-2.4	-3.2	112.6	-7.2	
Brazil	[1999]	3.0	2.0	-7.7	-4.3	70.2	4.9	
Chile	1981	3.0	2.0	5.4	-7.1	82.0	36.8	
Colombia	1998	3.0	2.0	-3.7	-4.9	58.7	8.2	
Mexico	1994	3.0	3.0	0.0	-7.0	610.5	26.9	
Peru	[1994-99]	3.0	3.0	0.7	-5.9	76.5	23.0	
Venezuela	1994	3.0	3.0	-2.3	4.3	34.2	-19.0	
East Asia		3.0	2.0	-0.5	-2.5	167.9	17.0	
Indonesia	1997	3.0	1.0	-0.7	-2.3	198.1	15.1	
Korea	1997	3.0	2.0	-1.5	-1.6	262.8	13.8	
Malaysia	1997	3.0	3.0	2.4	-5.9	71.9	21.0	
Philippines	[1997]	3.0	2.0	0.1	-5.3	162.3	30.8	
Taiwan	[1997]	3.0	2.0	-1.6	2.4	na	7.7	
Thailand	1997	3.0	2.0	-1.9	-2.0	144.5	13.5	

Crisis date=year when crisis started

[ ] = date when crisis might have been expected

* One year prior to crisis; Mexico data for 1994 and Asian countries for 1997 (because crisis occurred near end of year)

** Three years prior to crisis (including year of crisis)

Sources: Liberalization index (Schmukler website); fiscal/GDP, curr acct/GDP, Δcredit (International Financial Statistics); short-term debt/reserves (Global Development Finance); NPLs/loans (country sources).
Taiwan data from Asian Development Outlook.

Table 8. Latin America and East Asia: Cost of Financial Crises

Region/ country	Crisis Year	Fiscal Cost	GDP Loss	Interest Rate	Asset Prices	Inflation
Latin America		26.4	10.2	38.4	-54	41.6
Argentina	2002	na	-11.0	44.6	-54.7	40.3
Chile	1982	33.5	-13.4	46.0	na	31.2
Mexico	1995	19.3	-6.2	24.7	-53.3	53.3
East Asia		28.6	-9.5	11.9	70.4	47.2
Indonesia	1998	52.3	-13.1	3.3	-78.5	79.4
Korea	1998	23.1	-6.7	21.6	-45.9	7.2
Malaysia*	1998	4.0	-7.4	5.3	-79.9	5.0
Thailand	1998	34.8	-10.8	17.2	-77.4	10.7

Crisis year=peak year of crisis
Fiscal cost=net fiscal cost as share of GDP
GDP loss=decline in GDP in first year of crisis
Interest rate=peak real money market rate during crisis year
Asset price=largest monthly drop in (real?) stock market index during crisis year relative to January of previous year
Inflation=cumulative CPI for 12 months beginning 1 month prior to crisis
* Honohan and Klingibiel (2003), an alternative source on fiscal cost, whose data are generally similar to the source used here, have a very different figure for Malaysia (16.4%).

Sources: Fiscal cost (Hoelscher and Quintin, 2003:41); GDP loss (Collyns and Kinkaid, 2003:27,30); interest rates (Claessens, Klingebiel, and Laeven, 2002:3, except Argentina and Chile, which were calculated from IFS using similar methodology); asset prices (Claessens, Klingebiel, and Laevan, 2003:3, except Argentina, which was calculated from Standard and Poors using similar methodology); CPI (Collyns and Kinkaid, 2003: 29,31, except Argentina, which was calculated from IFS using similar methodology).

Table 9. Latin America and East Asia: Performance Five Years after Twin Crises

Region/ country	ΔGDP pre-crisis	ΔGDP post-crisis	Inv/GDP pre-crisis	Inv/GDP post-crisis	Credit/GDP pre-crisis	Credit/GDP post-crisis
Latin America	4.8	1.5	20.3	20.7	38.7	27.7
Argentina*	2.6	-2.0	16	15	24	11
Chile	7.9	2.9	23	23	53	54
Mexico	3.9	3.5	22	24	39	18
East Asia	7.8	2.5	38.4	23.1	114.5	93.3
Indonesia	7.6	0.6	31.6	16.0	61	24
Korea	7.1	4.2	38.2	29.4	73	104
Malaysia	8.7	2.8	42.0	21.8	158	142
Thailand	7.9	2.2	41.7	25.2	166	103

GDP pre-crisis=5 years before crisis
GDP post-crisis=5 years after crisis (subtracting crisis decline to correct for recovery)
Inv/GDP pre-crisis=year of highest ratio in couple of years before crisis
Inv/GDP post-crisis=ratio 5 years after crisis
Credit to private sector/GDP pre-crisis=highest ratio in couple of years before crisis
Credit to private sector/GDP post-crisis=ratio 5 years after crisis
* Argentina=1 year after crisis (2003)

Source: World Bank, *World Development Indicators*, online version.

Figure 1. Financial Liberalization Index by Region, 1973-2002

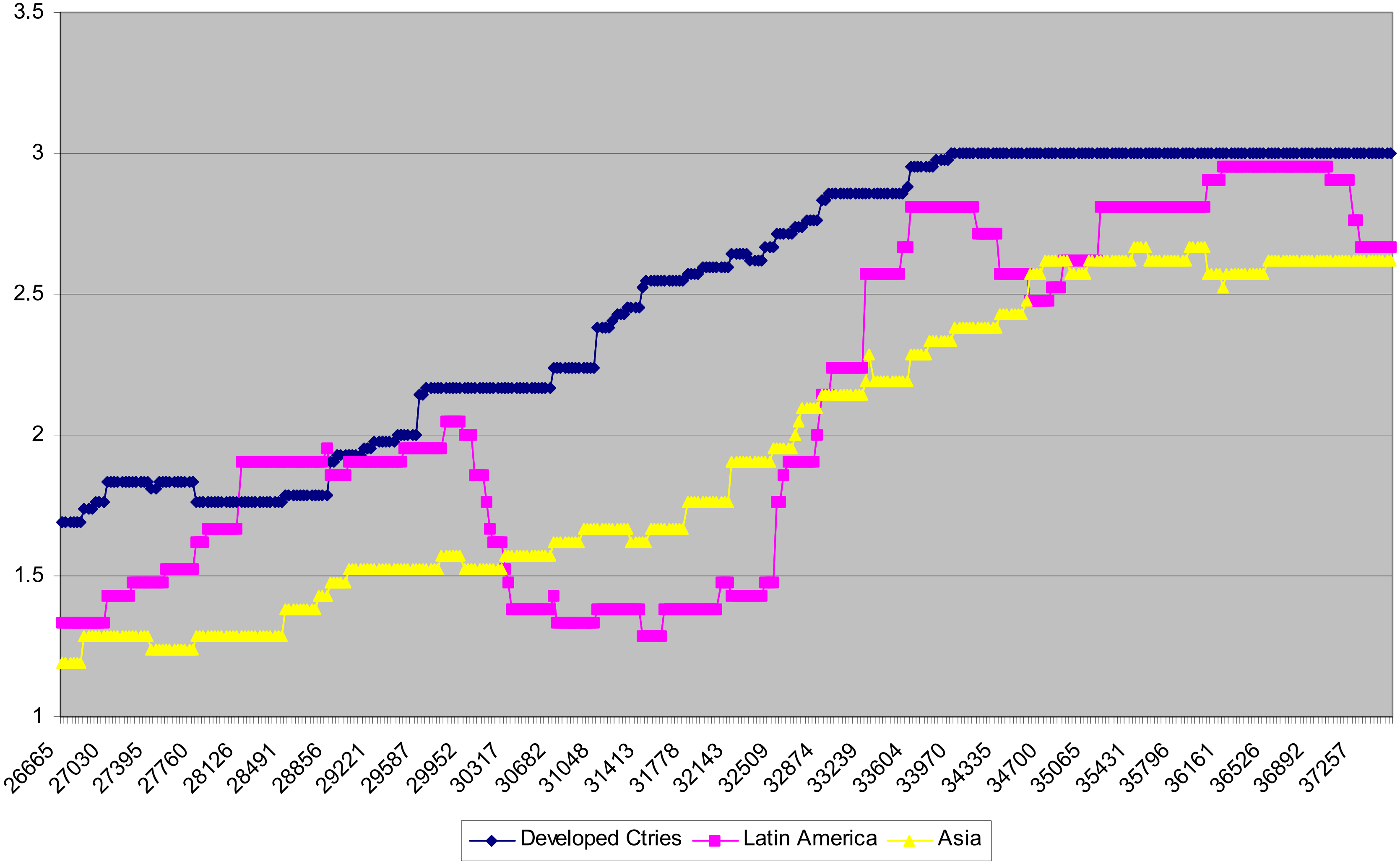
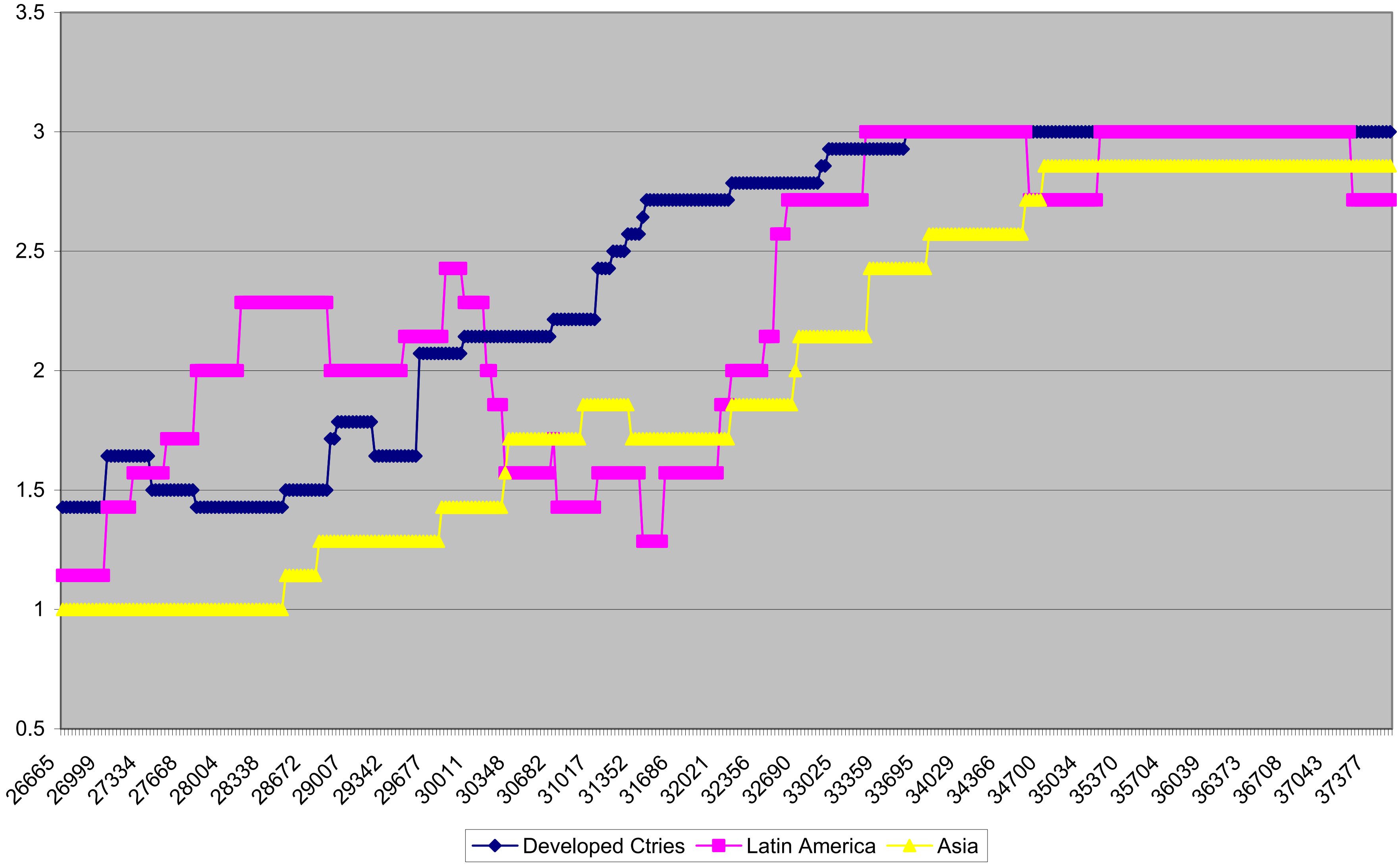
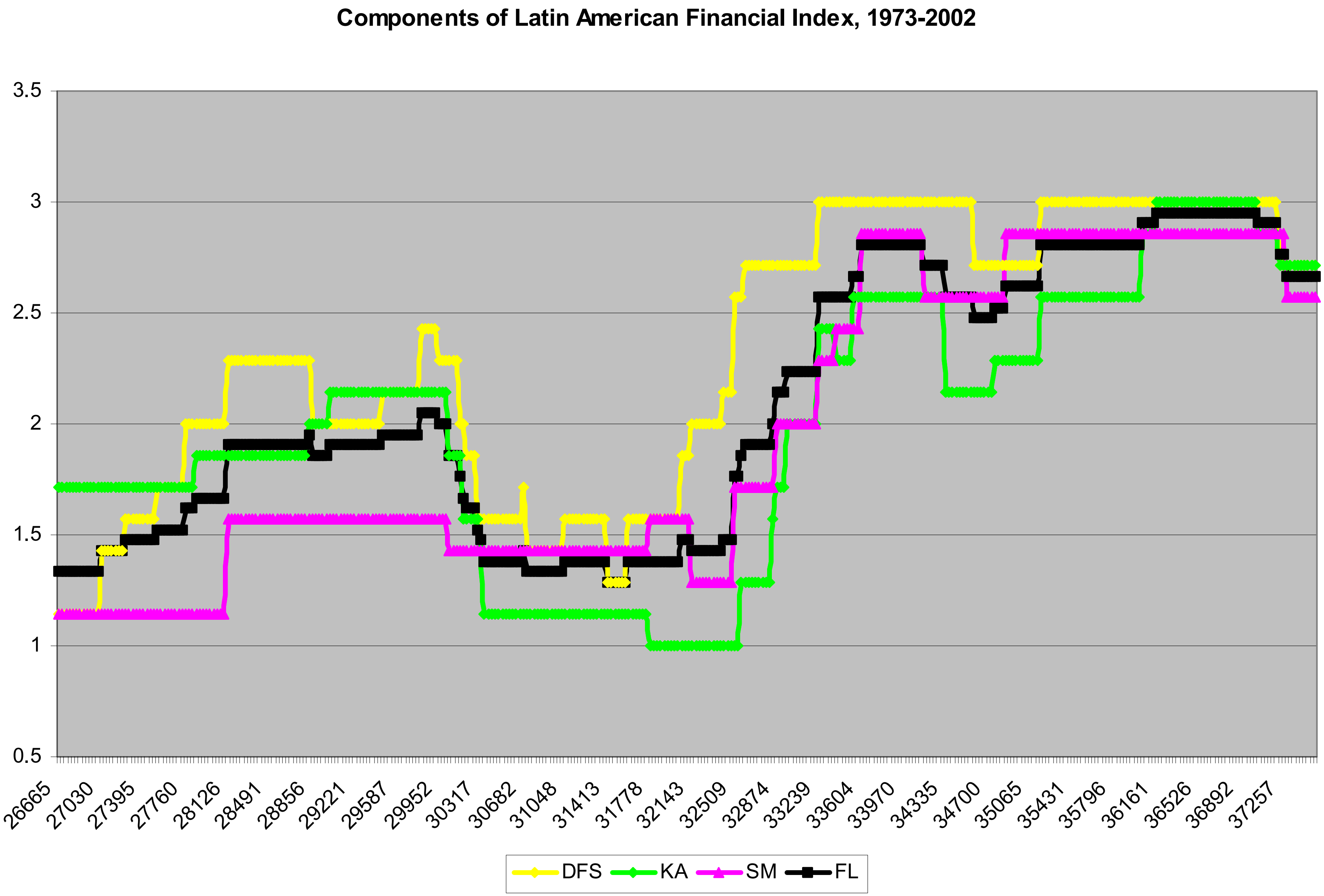


Figure 2. Domestic Financial Liberalization Index by Region, 1973-2002





Components of Latin American Financial Index, 1973-2002
3.5
3
2.5
2
1.5
1
0.5
26665
27030
27395
27760
28126
28491
28856
29221
29587
29952
30317
30682
31048
31413
31778
32143
32509
32874
33239
33604
33970
34335
34700
35065
35431
35796
36161
36526
36892
37257
DFS
KA
SM
FL